

RVMPO Transportation Demand Management Reference Guide

Rogue Valley

Metropolitan Planning Organization

155 N. First Street

P.O. Box 3275

Central Point, OR 97502

Website: www.rvmpo.org



 ROGUE VALLEY METROPOLITAN PLANNING ORGANIZATION

 R E G I O N A L
 T R A N S P O R T A T I O N
 P L A N N I N G

 Ashland • Central Point • Eagle Point • Jacksonville • Medford • Phoenix •Talent • White City

 Jackson County • Rogue Valley Transportation District • Oregon Department of Transportation



Table of Contents

Executive Summary	3
Introduction	5
Purpose of TDM Guide	6
Benefits of TDM	8
TDM Issues	8
History of TDM Programs	8
RVTD TDM Program History	8
Current TDM Program	11
Other TDM Programs	15
RTP Recommendations for Expanded TDM	20
Alternative Measures	21
How Alternative Measures Implement TDM Program Goals	24
Potential TDM Projects by Category	26
TDM Policies of the RVMPO	32
Proposed TDM Project List	36
TDM Corridor Identification	46
Evaluating TDM Costs	47
TDM Funding	53
Recommendations	61

Executive Summary

In 2007, the RVMPO began a process to refine the Regional Transportation Plan's Transportation Demand Management (TDM) element. A scope of work outlined four major tasks that resulted in twelve technical memoranda written between November 2008 and January 2011. The guide synthesizes the memos into a single document that will provide a context for revisions to the TDM element during the RTP update, and serve as a reference manual of options that communities may choose to implement to increase the effectiveness of their TDM programs.

TDM can reduce travel demand by influencing people's travel behavior in one of two ways: (1) by reducing the need to travel, or (2) by encouraging use of travel modes other than a single-occupant automobile. If implemented on an area-wide basis and actively supported by agencies, businesses, and residents, TDM strategies may be able to reduce or delay the need for street improvements as well as reduce energy consumption and improve air quality.

TDM ISSUES

The RTP identified the following issues that need to be addressed in order to have a robust TDM program for the MPO:

- The current transportation system is almost completely auto-oriented.
- The Rogue Valley Transportation Management Association (RVTMA) is a fledgling organization, and lack of funding has hampered its efforts at necessary outreach.
- Lack of government staff support of the programs; developers who are interested in designing TDM features into their projects are often unable to get any information from city staff.
- Lack of safe and accessible pedestrian and bicycling facilities.
- The limited transit service, due to insufficient funding.
- The tendency to focus on bedroom community development (outside of Medford) instead of self-sufficient communities with greater jobs-housing balance and less need for regional travel.

TDM FEATURES

TDM programs include, but are not limited to:

- **Public mode support** -- Publicly provided alternatives to Single Occupant Vehicle (SOV) travel, including services and facilities that encourage and support other travel modes.
- **Pricing:** Taxing and pricing mechanisms that affect the cost of transportation and thereby provide monetary disincentives to some travel behaviors.
- **Telecommunications:** Emerging demand-management solutions that are based on advanced telecommunications technologies.
- Land-use policies: Potentially the most effective long-term TDM strategies, which can

shape population density, urban design, land-use mix, travel needs and travel patterns.

- **Public policy and regulation:** Restrictions and regulations that govern private vehicle use and provide political support and guidance to new institutional relationships.
- **Employer-based support** Public and private-sector programs and services that encourage employees to change their commuting practices. Strategies include:
 - Incentives that make publicly provided travel modes more attractive;
 - Disincentives to solo commuting; and
 - Employer management policies that offer employees flexibility in travel mode choices.

BENEFITS OF TDM

- Supports compliance with Alternative Measures
 - Increases transit, bicycle, and pedestrian mode share
 - Fosters proximity of dwellings and transit
 - Promotes bicycle facilities on arterials and collectors
 - o Promotes sidewalks in Transit Oriented Developments (TOD)
 - Encourages mixed use developments that include both employment and residential uses
 - Supports increased funding for alternative transportation choices
- Improves air quality

RECOMMENDATIONS

The plan seeks to complement implementation of the RTP Alternative Measures and the Transportation Planning Rule Integrated Land use and Transportation Planning provisions. It also extends the TDM program to 2034 by offering additional optional measures including implementation of Transit Oriented Design. As noted in the plan's conclusion, one of the most effective ways to implement Transportation Demand Management is for jurisdictions to include TDM measures in their transportation plans and land development codes. While not all of the following will be appropriate for every community, examples of TDM strategies include:

- Identifying, encouraging and assisting role models who use alternative transportation. This can be done through awards, incentives and events.
- Encouraging developers to build high-density, multi-use buildings by establishing minimum density standards in zones that permit multi-family uses.
- Adopting maximum parking space requirements and an option to decrease parking further with the use of TDM measures such as providing attractive bicycle and pedestrian facilities, and carpool spaces within ¹/₄ mile of transit service.
- Partnering with city government to encourage employers with more than 50 employees to adopt TDM strategies.

- Supporting the use of transit among major employers by encouraging the purchase of individual or subsidized group transit passes, having a bus shelter added nearby or other actions to reduce commuting trips.
- Prioritizing all city and county TSP bicycle and pedestrian construction projects to be complete in the earlier phases of this Plan.
- Encouraging developments with a large footprint to have a bicycle and pedestrian circulation plan.
- Adopting traffic-calming street design standards
- Securing funding for street aesthetics such as street furniture, landscaping, lighting, and creating dispersed tiny public places.
- Encouraging development of discount transit fare programs and shuttle services by event sponsors.
- Engaging in public, government and employer outreach to raise awareness about the use of TDM strategies, including actively marketing to groups that have the greatest potential for reducing SOV trips.
- Modifying land use codes to require creation of non-motorized infrastructure on public roadways, and/or the concentration of mixed land uses (residential, office, and commercial) into smaller areas.
- Modifying parking standards to require fewer spaces or set a maximum number of spaces to reduce the amount of land consumed by parking and, and to some extent, the convenience of parking.
- Providing for park-and-ride lots.
- Adopting Trip Reduction Ordinances.
- Including TOD overlays or districts
- Modifying street and parking lot standards to enforce connectivity.

Introduction

TDM programs seek to reduce travel demand by influencing people's travel behavior in one of two ways: (1) by reducing the need to travel, or (2) by encouraging use of travel modes other than a single-occupant automobile (SOV). If implemented on an area-wide basis and actively supported by agencies, businesses, and residents, TDM strategies may be able to reduce or delay the need for street improvements as well as reduce energy consumption and improve air quality. TDM application occurs in both the public and private sectors with developers and employers playing a significant role along with government officials.

On a regional basis, government agencies like the Rogue Valley Metropolitan Planning Organization (RVMPO) serve to direct the initiative for TDM programs. Through policies and funding decisions, the RVMPO promotes TDM efforts in a partnership with RVTD. It then becomes a primary focus of the local TDM program to affect as many travelers as possible utilizing the local transportation network.

TDM programs include, but are not limited to:

- **Public mode support --** Publicly provided alternatives to SOV travel, including services and facilities that encourage and support other travel modes.
- **Pricing:** Taxing and pricing mechanisms that affect the cost of transportation and thereby provide monetary disincentives to some travel behaviors.
- **Telecommunications:** Emerging demand-management solutions that are based on advanced telecommunications technologies.
- Land-use policies: Potentially the most effective long-term TDM strategies which can shape population density, urban design, land-use mix, travel needs and travel patterns.
- **Public policy and regulation:** Restrictions and regulations that govern private vehicle use and provide political support and guidance to new institutional relationships.
- **Employer-based support** Public and private-sector programs and services that encourage employees to change their commuting practices. Strategies include:
 - Incentives that make publicly provided travel modes more attractive;
 - Disincentives to solo commuting; and
 - Employer management policies that offer employees flexibility in travel mode choices.

Purpose of TDM Guide

The Regional Transportation Plan (RTP) is not specific with respect to the TDM implementation actions that will be undertaken. Currently, Rogue Valley Transportation District (RVTD) manages the program and has limited resources to expand current efforts. This project will address these problems by refining the TDM element of the RTP. The intent of this project is to build on the RVTD TDM Program and extend it to cover the full RTP planning horizon (2034). It will identify specific implementation measures needed to support the TDM policies listed in RVTD's program and additional measures needed to specifically support the implementation of the MPO's Alternative Measures and meet the TDM TPR requirements for Integrated Land Use and Transportation Plans (ILUTP).

Throughout this document are links to websites that provide greater detail about TDM concepts and measures. Readers of the on-line version of the report can access the links by hitting the control button on their keyboard and clicking the mouse.

Benefits of TDM

TDM is an essential complementary element to successful implementation of the RTP's Alternative Measures, Transit Oriented Development (TOD), and improving air quality within the Air Quality Maintenance Area (AQMA).

As residential, retail and commercial densities increase in specific areas, urban design features can be implemented that give more emphasis to the mobility of pedestrian, bicycle and transit modes. The addition of parking constraints within a limited area, further affects the use of the automobile. Connecting TODs with a fixed, frequent transit service provides competition for similar trips that would have originally been made using an automobile.

TDM strategies and actions provide comprehensive information about, and incentives to use, alternative transportation programs, services and facilities to residents and employees in TODs. This ensures that options other than driving alone can begin to be considered.

TDM Issues

The RTP identified the following issues that need to be addressed in order to have a robust TDM program for the MPO:

- The current transportation system is built almost entirely for the automobile- this is the primary barrier that TDM faces every day of operations.
- The Rogue Valley Transportation Management Association (RVTMA) is a fledgling organization, and lack of funding has hampered its efforts at necessary outreach.
- Lack of government staff to help support the programs; developers who are interested in designing TDM features into their projects are often unable to get any information from city staff. When trying to change zoning or plan elements to be more TDM-responsive, developers may be turned down because of unsupportive city policies.
- Lack of support for TDM in local government; TDM has little recognition by local officials.

- Lack of safe and accessible pedestrian and bicycling facilities.
- The limited transit service, due to insufficient funding.
- The tendency to focus on bedroom community development (outside of Medford) instead of self-sufficient communities with greater jobs-housing balance and less need for regional travel.

History of TDM Programs

The acronym TDM has been used since the mid-1980s. However, the concept of transportation Demand Management has existed since World War II when the government urged people to carpool in order to conserve gasoline. TDM is, by definition, "the art of influencing traveler behavior for the purpose of reducing or redistributing travel demand." The main goal of TDM is to reduce the number of vehicles (especially SOVs) on the transportation network while at the same time provide other mobility options for those desiring to get from one point to another.

Around the mid-1970's, TDM became institutionalized as a part of the nation's transportation management system requirement fostered by joint transportation planning regulations instituted by the Federal Highway Administration (FHA) and the Urban Mass Transportation Administration, which is now call the Federal Transit Administration (FTA).

Since the mid-1970's TDM has assumed a large role in federal and local transportation policies, being cited in passages of:

- The Clean Air Act Amendments of 1990;
- The Intermodal Surface Transportation Act of 1994 (ISTEA);
- The Transportation Equity Act for the 21st Century (TEA-21) passed in 1998; and,
- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU) passed in 2005.

TDM measures are also contained in many local traffic reduction ordinances (including most jurisdictions in the Rogue Valley) and in development agreements and transportation plans. TDM has become a policy tool with professional legitimacy backed by political validity. TDM has become a concept used in regional transit/ride-sharing agencies, such as the Rogue Valley Transportation District (RVTD), transportation management associations, such as Rogue Valley's RVTMA, employers, and local ordinances (in the form of TODs).

RVTD'S TDM Program

After RVTD was formed in the mid-1970's, continued advertising of the bus service was really the only form of local TDM program until the early 1990's when RVTD initiated a rideshare program. This TDM program was intended, like all TDM programs, to move people out of their SOVs. The rideshare program facilitated commuting by carpooling and vanpooling. RVTD has never abandoned the efforts of their rideshare program; the program is still promoted today through a website, [yet to be determined- Nathan] and ride matching at the worksite by RVTD staff.

A major emphasis of TDM strategies and actions is to reduce SOV travel and the number of trips made by SOVs. Reducing this type of travel lessens congestion and enables the existing transportation infrastructure to move traffic more efficiently.

Commuters frequently are the focus of TDM actions because of their regular, predictable driving patterns, the possibilities of employer partnerships, and the opportunities for ride-sharing programs. It therefore makes sense that TDM programs should be aimed at this group of people performing the same predictable behavior on an almost daily basis. Since the destination is predictable, and the time of day the trip occurs is also predictable, it becomes far easier to attempt to influence driver's commute behaviors. It would be much more difficult, for example, to change a driver's behaviors about destinations for shopping.

Experience with TDM programs reveals the need to rely on participation of local employers to have a successful regional TDM program. A good TDM program includes strategies that garner support from the public and employers and a good program also utilizes costs and land use policies as incentives to get commuters out of their SOVs. One of the more modern aspects of TDM is the emerging field of telecommuting which relies on technology that allows people to work at home, thus reducing the need to commute.

Teleworking

In the mid-1990's, teleworking or telecommuting became the next emphasis for RVTD's efforts at TDM programs. Personal computers were gaining popularity in the workplace and in the home. RVTD worked to capitalize on technological advances by promoting programs for telecommuting, staggered work schedules, job sharing, and compressed work weeks. Telecommuters now have even more methods of communicating with the office in the form of satellite offices (reducing the need to rent so much office space at the main office headquarters, lowering overhead costs) and in the form of video conferencing to provide face to face contact over long distances.

Event/Education Coordination

In the late 1990's, RVTD embarked on a schedule of public outreach and education. Special events were sponsored by RVTD to educate people about the local transit system; their TDM programs (see above), and to introduce their interactive "Gus Rides the Bus" education program, which reaches thousands of school children each year. The class includes safety messages, curriculum on the benefits of alternative transportation and a bus ride.

Recent efforts have expanded the Interactive Program to include other programs like:

- A bicycle safety class;
- A skateboard safety class; and,
- An Interactive Bus class geared to seniors and the disabled.

RVTD has won many national and state awards for the Interactive Bus Program. A skateboard clinic was last offered in 2010, addressing skateboarding as a mode of transport since so many students, including high school and college students, are using skateboards to get from home to school. This is a five-day program with ninety-minute sessions planned for each of the five days and is taught by an experienced skateboarder.

RVTD's TDM program became more firmly established in 2001 when a system using quantitative benchmarks and tracking of activities came into use. For example, Park and Ride

lots are evaluated each quarter for use, the Interactive program distributes unique transit passes that when collected can determine the effectiveness of the program, and the number of booths that were hosted to distribute information to the general public are all tracked and summarized in a report. In addition, the TDM program adopted a new image and branded itself the "Way To Go! (WTG) Program". RVTD created a logo and has begun to use WTG instead of TDM for several activities. The WTG has expanded to encompass six primary tasks:

- Education
- Public Outreach
- Employer Outreach
- Government Outreach
- Rideshare, and
- Administration.

Safe Routes

In 1999, Marin County California initiated a Safe Routes to School (SRTS) pilot program. RVTD adopted this program in 2003, which promotes safe pedestrian and bicycle routes to local schools for children. These routes consist of off-street sidewalks, pathways, signalized crossings at major streets and high-visibility areas that, while sometimes not the shortest routes, are safer than on-street walking to school.

RVTD's SRTS Program has grown from one school in 2003 to eleven schools in 2010. RVTD also assists Walker and Helman Elementary schools in Ashland with a Walking Wednesday program in with more than 25 percent of the school using alternative modes each Wednesday. The national SRTS program seeks to have the SRTS day, always the first Wednesday in October, to expand to a monthly or weekly program.

RVTD's WTG Program also coordinates Try Transit Week each fall. This week of events encourages residents to use an alternate mode each day. The week includes Car Free Day, an effort started in Europe that has spread quickly across the globe. RVTD first recognized Car Free Day in 2001 by providing free transit throughout the district, hosting 'People Powered Fuel Stations." More recently the WTG Program closed Oak Street in downtown Ashland to motorized vehicles for an event with booths and fun activities. RVTD has partnered with the City of Medford, the City of Ashland, and Harry and David to promote Car Free Day.

Other events in RVTD's WTG Program include the Ashland Bike Swap, Rogue Valley Earth Day, Rogue Valley Safe Kids Day, and Access Senior Fair.

Current TDM Program

Current RVTD TDM activities include:

- *Alternative Transportation* education programs that reached over 6,000 students in the 2003-4 school year and is now moving into a Senior Education program.
- Public outreach activities to promote TDM and non-SOV transportation modes. The "flagship" of RVTD efforts to promote their service is the award-winning Gus Rides the Interactive Bus program that educates people from all walks of life to safely and efficiently

use the transit service. Combined with this program are alternative transportation education programs that have reached thousands of students over the years, now being expanded into a Senior Education program as well. There are other public outreach activities which promote TDM and non-SOV transportation modes

- Employer bus-pass programs. The U Pass program has existed for some time in other forms, but has benefited from new technology. Under this program, employers who desire discounted passes for their employees purchase passes which are usually discounted more than 50 percent when bought in bulk. The new technology includes a photo ID card distributed to the employees benefiting from the U Pass program to show to the driver when boarding a bus. RVTD eventually hopes to install swipe card systems on the bus fleet to allow the cards and other fare media to be used similar to a debit card. Photo ID dissuades these from selling their discounted passes to regular riders for profit.
- Free assistance with carpools, vanpools, Business Energy Tax Credits, telework, and tripreduction incentive. RVTD staff also conducts free onsite transportation fairs for employers and have also established "Guaranteed Ride Home Programs" for registered employers. These programs provide a sort of 'safety-net' so that these registered employers can safely and conveniently provide an emergency ride for those employees who normally commute by non-SOV. Finally, RVTD supports parking construction mitigation such as explaining to employers how to reduce the need for employee/customer parking spaces through implementation of company-wide TDM measures (like bicycle parking review and site design).
- On site transportation fairs for employers. Promoting transportation options at more than 25 events each year and coordinating the annual Car Free Day and Try Transit Week. Helping establish people-powered fuel stations for employers and school who want to encourage employees/students to try a mode other than SOV. RVTD staff also coordinates events to increase awareness of efficient transportation such as 'Reflect on Walking' and 'Safe Routes to School' programs.
- Promoting transportation options at more than 25 events each year and coordinating the annual Car Free Day and Try Transit Week. Helping establish people-powered fuel stations for employers and school who want to encourage employees/students to try a mode other than SOV. RVTD staff also coordinates events to increase awareness of efficient transportation such as 'Reflect on Walking' and 'Safe Routes to School' programs.
- Distribution of free materials in the community such as pedestrian and cycling reflectors, brochures, water bottles, bicycle helmets.
- Government outreach to educate officials about TDM measures including attending meetings to promote the use of TDM measures, and reviewing planning documents and site design for TDM-supportive policies and infrastructure.
- Supporting parking construction mitigation- reducing the need for parking expansion with TDM measures.
- Bicycle parking review and site design.
- Trip Reduction Incentive Programs- Creating and maintaining a Trip Reduction program that tracks employees' trips and rewards those who use non-SOV modes.
- Coordination of events to raise awareness of efficient transportation such as Car Free Day, Reflect on Walking, Safe Routes to School.
- Marketing of TDM through general advertising in various media. Distribution of free materials in the community such as pedestrian/cycling reflectors, brochures, water bottles,

and bicycle helmets.

- Regional administration of the statewide rideshare online tool.
- In concert with the Rogue Valley Council of Governments (RVCOG), RVTD staff helps orchestrate the efforts of the Rogue Valley Transportation Management Association (RVTMA). This association is composed of local business owners and, among other things, has the goal of implementing region-wide TDM programs. Currently, the RVTMA is inactive; however, reactivation for this association is expected in the near future. In combination with this program is Government outreach to educate officials about TDM measures including attending meetings to promote the use of TDM measures, and reviewing planning documents and site-design for TDM-supportive policies and infrastructure.

RVTD plays a key leadership role in regional TDM programs in order to minimize SOV travel, reduce congestion, increase worker health, foster increased mobility, and improve air quality. RVTD implements their TDM program through education, public outreach, facility design, and facility placement.

Combined with land use goals, TDM programs promote facility design that complements transit access/convenience. RVTD relies on the jurisdictions within the MPO to promote TDM in their own TSPs through land use changes, provision of connections to other modes (bicycle/pedestrian pathways), and adoption of mixed use development ordinances, such as TODs.

In order to expand service, RVTD reviews development proposals of each member jurisdiction. Through this review, RVTD staff identifies:

- transit enhancement possibilities (new stops, rerouting, etc.);
- opportunities to preserve roadway right-of-way for new facilities (bus pullouts, shelters, etc.); and,
- plans for creation of future bus routes.

In support of this review process, RVTD staff asks member jurisdictions to prioritize those areas amenable to increases in, or creation of, transit service. Transit on these corridors should be able to compete favorably with use of SOVs. The corridor should lend itself to:

- TOD type development;
- provision of access to institutional uses (schools, hospitals) and open spaces; and,
- creation of transit demand for many hours of the day, not just during morning and evening peak hours.

According to RVTD, an average housing density of seven units per gross acre within ¹/₄ mile of the transit corridor is optimal, with higher densities being located as close as possible to the transit line.

RVTD emphasizes that planning for future transit must be in concert with the local jurisdictions. While RVTD depends on the local jurisdictions to promote land uses that support transit opportunities through land use ordinances, they also depend on member jurisdictions to discourage developments that might lead to overuse of SOVs. Simultaneously, member jurisdictions rely on RVTD to provide transit service to their more dense developments and to populations which need transit but for some reason (disabilities, distance from transit lines) cannot connect to it. Working in concert, RVTD and member jurisdictions have the opportunity to create an efficient multi-modal transportation system.

The single biggest obstacle to TDM-based efforts at reducing congestion remains the RVMPO's relatively small population. In MPO's with few people (as opposed to L.A. or New York), commuters are not being frustrated enough by local congestion, or associated costs of driving such as parking or tolls, to seek other travel choices. It is therefore difficult for programs such as RVTD's to be as successful as they could be in encouraging commuters to find other methods of getting to work.

RVTD operates during the work hours only on weekdays, and does not provide evening, weekend, or holiday service. This is mostly due to the District not receiving additional funds through the Federal, State or local governments or through regional levies.

Table 1 - Summary of RVTD TDM Pro FY 2010	ograms and	d Budgets	
	Funding S	Sources	X 7 I
TDM Activities	ODOT Region 3	Local Share	-Yearly Budget
1. Education	\$56,343	\$6,513	\$62,856
2. Public Outreach	\$34,895	\$4,733	\$39,628
3. Government Outreach	\$6,094	\$577	\$6,671
4. Employer Outreach	\$9,416	\$956	\$10,372
5. Rideshare	\$15,444	\$0	\$15,444
6. Administration	\$7,917	\$0	\$7,917
Total Costs of RVTD TDM Programs	\$130,109	\$12,779	\$142,888

Table 1 below is a list of RVTD's TDM program activities for FY 2010 with budget estimates.

ODOT Region 3 provides a \$130,109 annual grant to RVTD to implement the TDM program. . The RTP includes a draft TDM Project List.

I. Proposed RVTD TDM Program and Activities to be Included in the 2009-2034 RTP

The following TDM activities are included in RVTD's Transportation Options (TO) program and are proposed to be included the TDM Guide.

1. Education – RVTD provides educational programs and marketing services that

encourage, promote, and inform businesses owners, employees, schools, and general public on TDM strategies and programs' benefits.

- 2. **Public Outreach** RVTD hosts and participates in many different events that provide information, education and activities associated with transportation options. Public outreach efforts also include advertising on TV, radio and buses.
- 3. **Government Outreach** RVTD attends many different transportation-related government committee meetings and coordinates the Bike to Work Week events.
- 1. **Employer Outreach** RVTD is active in outreach to employers through the Park & Ride and Bus Pass Programs. RVTD is in the process of forming a Transportation Management Association (TMA).
- 2. **Rideshare** RVTD helps fund the rideshare matching website CarpoolMatchNW.org and provides assistance to the public on how to get into a carpool.
- 3. Administration Costs to operate the program.

Other TDM Programs

The State of Oregon and member jurisdictions of the RVMPO have goals, policies, strategies, and actions which support the efforts of the MPO and RVTD in their mutual promotion of TDM goals in the region.

Supporting TDM Actions: Oregon Transportation Plan

The Oregon Transportation Plan (TPR) contains two goals and multiple policies and strategies related to Transportation Demand Management (TDM).

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 Integrated Multimodal System

It is the policy of the State of Oregon to plan/develop a balanced, integrated transportation system with modal choices for the movement of people and goods.

Under this goal and policy are four different strategies. In summary, these strategies call for:

1) the planning/development of a multimodal transportation system that increases efficient movement of people/goods in coordination with regional/local plans;

2) promotion of growth of intercity transit, and cargo conveyance systems to link all areas of Oregon with national/international transportation facilities;

3) identification of transportation needs that go beyond state borders, increasing multimodal

passenger/freight connections within the state and beyond; and,

4) development of transportation plans responding to transportation needs, using the most costeffective modes/solutions over the long term.

Policy 1.2 – Equity, Efficiency and Travel Choices

It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.

Under this policy are two strategies:

1) develop/promote inter and intra-city public transportation and,

2) better integrate, locate and design passenger/freight multimodal transportation facilities/connections, expediting travel and provide travel options – facilities are to be designed to connect with other modes.

Policy 1.3 – Relationship of Interurban and Urban Mobility

It is the policy of the State of Oregon to provide intercity mobility through and near urban areas in a manner which minimizes adverse effects on urban land use and travel patterns and provides for efficient long distance travel.

Two strategies support this policy:

1) use regional/inter-regional planning approaches to address multijurisdictional problems; and,

2) coordinate with affected jurisdictions to develop/manage the transportation network so that local trips can be conducted primarily on the local system while the interstate/statewide facilities can primarily serve intercity movement and interconnect the systems.

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

It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.

Under this policy are nine strategies, summarized as follows:

1) Promote TDM and other transportation system operations/techniques reducing peak period travel, shifting traffic volumes away from the peak period to improve traffic flow;

2) Protect the integrity of statewide transportation corridors/facilities from encroachment by

managing access to state highways, limiting interchanges, creating safe modal crossings, and controlling land uses around airports, ports, pipelines, and other intermodal conveyances;

3) Use advanced traveler information devices, incident/speed management, improved signalization, and other technologies to improve efficiency, safety, capacity of transportation systems;

4) Enhance efficiency/reduce conflicts among transportation users;

5) Employ a systematic review process to analyze a project's design and make recommendations for improvement of design to reduce overall costs;

6) Support incentives/regulations for locating high-traffic-generators near fixed route/high frequency public transit;

7) Use a systematic approach to pricing across modes;

8) Evaluate peak period pricing, flexed work schedules/teleworking to reduce congestion; and

9) Evaluate use of tolled express lanes to reduce congestion.

Policy 2.2 – Management of Assets

It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Three strategies underlay this policy and are summarized as follows:

1) Provide and support a strong policy of size/weight enforcement to preserve existing infrastructure;

2) Develop/enhance/implement management systems for transportation network assets including pavement, bridges, rights-of-way, public facilities/equipment, safety features, and other infrastructure; and,

3) Work with all levels of government and agencies to revise current regulations/standards to improve efficiency/reliability of goods and passenger movements consistent with environmental and safety goals/regulations.

In September 2011, ODOT published draft amendments to the TPR, some of which broaden support of TDM practices. Proposed changes include adding off-peak-hour travel and reduced or paid parking to the Demand Management definition. A new section would be added to exempt certain multimodal mixed-use areas from congestion performance standards, permitting greater development densities without having to amend a transportation system plan. Exemptions would be possible when the land is entirely within a UGB, is zoned for multimodal mixed uses, and is either more than ½ mile from an interchange or within an Interchange Area Master Plan (IAMP).

Supporting TDM Actions: MPO Jurisdictional TSPs

Jurisdictional Transportation Systems Plans (TSPs) by member jurisdictions are discussed below. Only the currently adopted TSPs were reviewed although some jurisdictions were on the verge of adopting updated TSPs.

Ashland

TDM measures currently adopted by the City of Ashland include:

- improved pedestrian and bicycle system connectivity, access, and circulation;
- enhanced transit coverage and service (this enhanced service has been reduced due to lack of funding);
- employer-based transit subsidy (e.g. SOU student pass program);
- ridesharing, carpool/vanpool programs; and,
- promotion of mixed land use developments.

Ashland has five mixed-use areas exhibiting the characteristics of Transit-Oriented Districts (TODs). These TODs are the Downtown-Historic Railroad District, Ashland Community Hospital area, North Mountain Avenue area, Hersey Street Employment District, and the Southern Oregon University zone.

Central Point

Central Point's land use code allows for TODs. Central Point has so far designated one TOD (Twin Creeks) wherein commercial, office, and residential uses are planned. Residential uses and park development exist, and infrastructure is in place for employments uses. The City also has designated lands along Pine Street and Front Street as TOD areas.

Eagle Point

Eagle Point is completing its TSP adoption process. Staff reviewed a draft revised June 2001 that did not contain any specifics on TDM programs, but had detailed descriptions of connected pedestrian and bicycle pathways under a "Bicycle and Pedestrian Plan" segment of the draft document. In summary, Eagle Point is providing alternatives to travel in SOVs through promotion of sidewalks along arterials and collectors and provision of bicycle paths throughout the city.

Jackson County

While Jackson County's currently adopted TSP does not contain a specific TDM section, there are goals (Modal Components) devoted to such a program. Goals and strategies mentioned are designed to:

- plan an integrated transportation system that maintains existing facilities by providing effective multi-modal options through preservation and maintenance of the existing road system, rather than increasing vehicular capacity;
- maintain existing traffic calming effects to provide safe use of pedestrian and bicycle pathways; implement TDM primarily through application of an integrated land use and

transportation plan;

- encourage other methods of TDM as feasible opportunities arise; and,
- ensure parking provision is proportional to proposed development; and
- maintain a .85 volume to (network) capacity ratio during weekday peak periods.

Jacksonville

Jacksonville's currently adopted TSP does not contain a specific section for TDM programs, but includes a provision for altering land use densities to reduce demand for SOV travel and to meet travel needs through other modes of travel. A Draft of a new TSP includes more discussion of bikeways, pedestrian ways, TODs, transit, and even resurrection of an old electric railway.

Medford

Medford's TSP contains TDM strategies to reduce vehicle miles traveled in SOVs. These strategies include:

- promoting of the use of alternative modes of transportation by participating in the local Transportation Management Association (RVTMA), including installing bike racks in the downtown and adding a multi-use path along Larson Creek;
- providing incentives for Medford city employees to participate in TDM programs;
- providing opportunities for City employers to provide for a compressed work week, flexible schedules, and telecommuting;
- encouraging employees to design/implement trip-reduction plans;
- discouraging trips in SOVs;
- encouraging private employers to follow suit with alternative work plans and formation of private TMAs, carpools, and vanpools;
- supporting RVTD in their TDM efforts to create park-and-ride lots and promote TDM programs;
- performing public outreach and education programs to get more commuters out of their SOVs;
- approving two Transit-Oriented Developments (TOD) in Downtown Medford and the Southeast Village, with a third site being implemented on West Main Street;
- adopting reduced off-street parking standards, and requiring maximum parking space limits in addition to minimum space requirements; and
- establishing minimum residential density requirements in all zones.

Phoenix

The City of Phoenix TSP contains four policies supporting TDM strategies:

- the City is to consider implementing flex work hours along with telecommuting where feasible for their employees;
- larger employers seeking approval for development within city limits will be required to implement TDM strategies as an alternative to further construction for parking/roadways;
- future larger employers will also be required to pursue carpool/vanpools through incentives such as preferential parking; and,
- the City will consider adoption of mandatory TDM programs for larger employers.

The City itself is currently experimenting with staggered work hours, flextime, and telecommuting with some degree of success. While these alternative work schedules may not be feasible for all city workers, depending on type of work performed, those employees that have been a part of this pilot program have found success under implementation of these TDM strategies.

Talent

The City of Talent's currently adopted TSP contains a goal related to TDM programs. This goal is to reduce demands placed on the current/future transportation network by the SOV. Objectives and policies of the goal include:

- using alternative travel modes;
- assisting the public with choosing these alternative modes;
- working with employers to provide alternative work schedules and facilitate telecommuting;
- encouraging ridesharing and transit opportunities; and,
- adopting trip reduction goals in those areas with high trip generation.

Conclusion:

Member jurisdictions of the RVMPO have done much to enhance their respective TDM programs. The MPO continues to encourage implementation of TDM programs in order to:

- 1. Comply with federal standards;
- 2. Improve the air quality of the region;
- 3. Conserve a finite resource (petroleum);
- 4. Avoid expensive construction of expanding transportation facilities;
- 5. Encourage the use of other modes of transport besides the SOV;
- 6. Create a healthy and productive workforce; and,
- 7. Attracting more highly skilled people to the region.

RTP Recommendations for Expanded TDM

The RTP TDM element provides policy guidance and outlines a range of potential strategies for implementation. Specific TDM strategies in the RTP include:

- Encouraging developers to build high-density, multi-use buildings.
- Adopting maximum parking space requirements and an option to decrease parking further with the use of TDM measures such as providing attractive bicycle and pedestrian facilities, and carpool spaces within ¹/₄ mile of transit service.
- Partnering with city government to encourage employers with more than 50 employees to adopt TDM strategies.
- Prioritizing all city and county TSP bicycle and pedestrian construction projects to be complete in the earlier phases of this Plan.
- Encouraging developments with a large footprint to have a bicycle and pedestrian circulation plan.
- Securing funding for street aesthetics such as street furniture, landscaping, lighting, and

creating dispersed tiny public places.

- Supporting the use of transit among major employers by encouraging the purchase of individual or subsidized group transit passes, having a bus shelter added nearby or other actions to reduce commuting trips.
- Encouraging development of discount transit fare programs and shuttle services by event sponsors.
- Engaging in public, government and employer outreach to raise awareness about the use of TDM strategies, including actively marketing to groups that have the greatest potential for reducing SOV trips.

Alternative Measures

On December 13, 2001, the Land Conservation and Development Commission approved seven Alternative Measures adopted by the RVMPO in place of the VMT reduction standard contained in the state Transportation Planning Rule (TPR). The Alternative Measures meet requirements reduce reliance on the automobile as specified in OAR 660-012-0035(5).

The seven adopted Alternative Measures relate to an overall TDM program combined with modification of land use. Therefore, these measures are closely linked with work of the RVMPO and member jurisdictions to develop and implement ILUTPs.

Measure 1: Transit, Bicycle and Walking Mode Share

<u>Transit</u>

Transit is used primarily for medium range trips. Most commuters would find that longer commute trips on transit take more time than desired. For example, a car commute might take twenty to thirty minutes while the same commute on transit might take 90 minutes or longer (due to stops and/or transfers).

Bicycle & Pedestrian

As stated previously, cycling and walking are ideal alternatives for making shorter trips and transit accommodates medium range trips. A key here is connectivity; connections need to exist between walking paths, bike routes, and pathways to transit.

Proposed TDM Actions

In order to increase the use of transit, cycling, and walking, TDM strategies dictate the need to more efficiently fund and promote the MPO's transit service, and provide connectivity to the bus system. Combined with Alternative Measure 2 (see below), the provision of required infrastructure to enhance connectivity promotes the use of these non-SOV modes.

Local jurisdictions have been working to provide more bike paths, accomplished by constructing off-street facilities like the Bear Creek Greenway. Other cycling opportunities can emerge through elimination of on-street parking spaces, then restriping those roadways with bike paths. New road construction can also include sidewalks and bikeways (see discussion under Alternative Measure 3).

Sidewalks are being added to provide more pedestrian opportunities. Some jurisdictions have adopted land use codes (especially in areas of Urban Renewal) to require pedestrian amenities such as benches, bus shelters, and landscaping in order to make pedestrian activities more attractive. Some neighborhoods now include pedestrian/bicycle pathways between cul-de-sacs, enhancing access to parks, other sidewalks, and transit lines.

Several jurisdictions promote themselves as pedestrian and cycling friendly towns that provide off-street pathways, walking tours, and rental services for bicycles, Segways, and skates. Providing safe and convenient infrastructure is the primary action that enhances cycling and pedestrian activities.

Increasing ridership on the MPO's only transit facility is difficult because the region has not yet experienced the congestion that compels people to change their travel behavior. Commuters have a hard time giving up the convenience of their cars when it is not that stressful to drive to work.

Measure 2: Percentage of Dwelling Units within ¹/₄ Mile Walking Distance of 30-Minute Transit

Combined with Measure 1, this measure seeks to locate more of the area's population closer to transit lines that provide a minimum of 30-minute service intervals. This measure is intended to document improvements in transit accessibility. Research indicates that a distance of ¹/₄ mile from a dwelling provides reasonable pedestrian access to a transit line, particularly a bus line.

Proposed TDM Actions

Some jurisdictions in the RVMPO are opting for transit-oriented development (TOD) addressed later in this report. A proposed action would be to provide more transit routes and more frequent service to these areas, but funding issues, especially in smaller urbanized areas, might prohibit increases in transit service. Jurisdictions could encourage or require subsidized transit passes for areas of high trip generation that would enable RVTD to find ways to provide limited service to these areas.

Measure 3: Percentage of Collector & Arterials with Bicycle Facilities

Consistent with the (TPR), current RVMPO policy is that all new collector and arterial streets in the MPO include bicycle lanes striped along each side of the street. In rural areas, the same policy holds for roadway shoulders that have greater than a four-foot width.

Proposed TDM Actions

RVMPO policy is for all MPO collectors and arterials to be improved with at least striped bikeways (as opposed to Class I bikeways which are dedicated pathways constructed mostly separate from road rights-of-way). Policy dictates that new or improved collectors and arterials include these on-street bikeways as part of the improvement. Some jurisdictions have replaced on-street parking to make with bicycle lanes. Local jurisdictions should be encouraged to improve all collectors and arterials with on-street bike paths where existing roadway width can accommodate them, otherwise known as a "road diet"

To further this concept, RVMPO policy could be expanded to recommendations to all local jurisdictions adopt this policy as part of their respective land use ordinances.

Measure 4: Percentage of Collectors & Arterials in TOD Areas with Sidewalks

Seven areas have been identified within the RVMPO that are currently planned for mixed-use, pedestrian-friendly development, or are already in downtown areas. The intent of this measure is to develop pedestrian accessibility in these portions of the MPO area, where pedestrian access is most critical.

Proposed TDM Actions

As TODs are proposed, it is RVMPO policy that these areas provide the greatest level of pedestrian accessibility possible. It is also the intent to develop these areas with the highest residential densities possible, and that these areas contain employment centers. The intent of TOD development is to decrease VMTs in SOVs, as required by the TPR. Promoting connectivity, mixed uses, and opportunities to foster multiple modes of travel are land use ordinance actions that can promote TOD and/or "nodal" development.

Measure 5: Percent of New Dwelling Units in Mixed-Use/Pedestrian-Friendly Areas Measure 6: Percent of New Employment in Mixed-Use/Pedestrian-Friendly Areas

Working in tandem, these alternative measures (5 and 6) are intended to demonstrate progress toward creating mixed use, pedestrian-friendly developments (like TOD developments) within the MPO. Mixed use, pedestrian-friendly development already existing within downtown areas in Medford, Central Point, Phoenix, Ashland, and Jacksonville, as well as within proposed TOD sites, are examples of the intent of these measures.

Proposed TDM Actions

As with TOD development, the proposed action would be for local jurisdictions to adopt multiuse standards for new developments, especially for those developments located near downtowns and existing/proposed TODs. Jurisdictions within the MPO are aware of the intent of the TPR and federal requirements to reduce reliance on SOVs, and are encouraged to modify land use regulations to reflect that intent.

Measure 7: Alternative Transportation Funding

The intent of this measure is to demonstrate the RVMPO's financial commitment to implement the alternative transportation projects upon which many of these proposed measures rely. The RVMPO has complete discretion over only those funds received through the Surface Transportation Program (STP). Historically, these funds have been used for vehicular capacity expansion projects.

How Alternative Measures Implement TDM Program Goals

RVMPO staff completed a 2008 analysis of the currently adopted seven Alternative Measures,

using data from 2007. Several of the measures relate to land use and, therefore, are closely linked with work of the RVMPO and member jurisdictions to implement ILUTPs. In particular, two measures set benchmarks for the percentage of new dwelling units and employment growth that must occur within compact, mixed-use, pedestrian, and transit-friendly neighborhoods. By 2007, this pattern of development must have accounted for 9 percent of development in the RVMPO since 2000.

Summary Findings of the 2007 Measurements:

The 2007 measurements show that the region, for the most part, is meeting or exceeding the Alternative Measures benchmarks. The only measure the region is failing to meet is transit, bicycle and walking mode share (Measure 1). A significant reduction in transit service in 2006 because of a funding shortfall could have caused the ridership decline.

Table 2 shows the degree to which the RVMPO is meeting goals (as of 2007) established in the Alternative Measures. All but one of the 2005 benchmarks have been exceeded and two 2010 benchmarks have already been exceeded or equaled as well. Four other 2010 benchmarks are shown to be attainable. The requirements will grow more demanding in the future, which may necessitate adoption of new land use code provisions and adoption of other TDM measures to keep pace with the goals.

From these results, it is reasonable to conclude the existing Alternative Measures in the RTP are an effective step in the region's adoption of more TDM measures. The Alternative Measures already in place are working to reduce SOV use in the region.

Measure	How Measured	2000	2005	Measured 2007	Bench- mark 2010	Bench- mark 2015	Target 2020
Measure 1:	The percent of total daily trips taken by transit and the	%daily trips	%daily trips	%daily trips	% daily trips	% daily trips	% daily trips
Transit and bicycle/pedestrian mode share	Transit and bicycle/pedestrian mode share Transit and bicycle/pedestrian mode share transportation of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).		transit: 1.2 bike/ped: 8.4	transit: 0.9 bike/ped: 7.3	transit: 1.6 bike/ped: 8.4	transit: 2.2 bike/ped: 9.8	transit: 3.0 bike/ped: 11
Measure 2: % Dwelling Units (DUs) w/in ¼ mile walk to 30-min. transit service	Determined through GIS mapping. Current estimates are that 34% of DUs are within ¼ mile walking distance of RVTD transit routes.	12%	20%	34%	30%	40%	50%
Measure 3: % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping. Current estimates are that 37% of collectors and arterials in the MPO have provisions for bicyclists.	21%	28%	37%	37%	48%	60%
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping. Current estimates are that 55% of collectors and arterials in TOD areas have sidewalks.	47%	50%	55%	56%	64%	75%
Measure 5: % Mixed-use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	10%	26%	41%	49%
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State – represents the ratio of new employment in TODs over total regional employment.	0%	9%	17%	23%	36%	44%
Measure 7: Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP).	N/A	\$950,000	\$1.4 Million	\$2.5 Million	\$4.3 Million	\$6.4 Million

Table 2: RVMPO Alternative Measures and 2007 Benchmark Analysis

Table 10 shows the measures and benchmarks as they were adopted. The "as measured" numbers in the 2007 column are the results of recent measurements made as described in the "How Measured" column of the Table. Through this analysis, staff determined that almost all benchmarks are being met. Along with funding problems, the shortfall in meeting benchmarks for Measure 1 can be linked to the fact that the valley simply does not experience the congestion that causes people to trade their automobile trips for the more time-consuming transit commutes.

Proposed TDM Actions

RVMPO jurisdictions have agreed to redirect 50 percent of the STP funding to alternative transportation projects. Half of these STP funds are now used to enhance bicycle/pedestrian and TOD-type, mixed-use development supportive projects. Another portion of this amount goes to RVTD to expand transit programs.

Potential TDM Strategies by Category

A. *Reduction of peak-hour demand* on roadways by eliminating person trips, or shifting these trips to shoulders of peak hours (a little before or after peak periods). This involves employers' willingness to adopt policies allowing flexible work schedules for their employees.

Types of Programs

There are several types of TDM programs an employer can implement in order to achieve the above strategy. These include, but are not limited to the following:

1. Staggered Work Hours

Creating a schedule where employees begin work hourly from 6 a.m. to 10 a.m. For example, some employees work from 6 a.m. to 3 p.m., others from 7 a.m. to 4 p.m., with the latest group working from 10 a.m. to 7 p.m.

This flexible schedule has all workers at the office during the core hours of 10 a.m. to 3 p.m. Implementation of the core hours creates known times for clients of the business when all employees are at the workplace.

Implementation of this program among a number of employers in the same employment region creates a staggered commute from 6 a.m. to 7 p.m., reducing congestion during normal peak commuting hours.

2. Compressed Work Week

Another program allows employees to work a compressed work week, with options including:

- a. Four 10-hour days during the week;
- b. Three 12-hour days with one 4-hour day; or
- c. Eight 9-hour days and one 8-hour day in a two-week pay period.

This type of compressed work week not only provides shoulder hours to relieve daily congestion, but the one or two days off per two-week period reduces peak hour congestion.

3. Telecommuting

This program allows employees to work from their home using computers, phones, and faxes. Features of this program include:

- a. Staff schedule rotation through office personnel so that each employee has the opportunity to work part of the time at home instead of driving to the office.
- b. Offsetting costs associated with fewer workers in the office, and the possibility of shared work spaces.
- c. Reduction in the amount of office space an employer needs to lease, and utility costs.
- d. Like the other programs mentioned above, this program has proven to increase worker morale and productivity, and reduces absenteeism associated with stress caused by congested traffic during peak commuting hours. On the other hand, some studies suggest that there are also negatives aspects of teleworking. This form of work requires a certain personality that can withstand the missed personal interaction at the workplace. This missed staff interaction could also jeopardize promotions. In short, teleworking is not for everyone and there are tools to help employers identify workers that should not telework and compensate for the missed face-time for those who do.
- e. A final opportunity is the quickly growing video-conferencing technology that supplements other home-based telecommuting equipment. Video cameras and microphones allow for long-distance conferencing, another method to reduce the amount of office space (conference rooms) required of an employer.

A disadvantage of telecommuting is the additional capital costs (such as software and/or hardware purchase) associated with this program not incurred by the flex-time options mentioned above.

All these programs, especially when applied to firms having larger numbers of employees, can significantly reduce congestion during peak hours over a wider range of time or by eliminating a few commuting trips each week.

B. *Discouraging SOVs* so that necessary person-trips consume as little roadway capacity as possible.

Types of Programs:

Following are some programs that discourage the use of SOVs in order to reduce demands on the transportation network. Most of these programs rely on the premise that in order to reduce demand for auto oriented space such as parking, a value should be placed on that space, such as charging parking fees or charging tolls, or using congestion pricing on the street system.

1. Parking

The availability of parking, whether limited or abundant, is one of the most important indicators for whether the majority of TDM programs will be successful. If parking spaces come at a premium by lowering the availability of parking stalls, or if they come at a high cost by charging for their use, people may reconsider the benefits of driving. Fewer parking spaces that cost more could force people to make choices regarding carpooling and using other modes of transportation, thereby reducing congestion.

2. Tolls

If there are costs associated with using the most efficient route to get to work, people might make the choice to find alternative routes, carpool, or use a different mode of transportation.

3. Location-based pricing

An example of this is Singapore. Drivers pay a fee to enter certain (usually very congested) areas of the city. If the fee is steep enough, the cost may force people to seek alternative methods of commuting.

4. Deferring infrastructure improvements:

In this instance, instead of merely adding capacity to existing roadways in order to accommodate more traffic, a jurisdiction could defer or cancel improvements. The resulting congestion may compel increasingly frustrated motorists to find other means of travel.

5. Cost of fuel:

The cost of fuel is a self-implementing strategy. As the barrel oil prices escalate, the cost of refined fuel escalates also. For some SOV drivers, this cost alone may cause them to seek other means of transport. Studies show that once fuel reaches \$5.00 per gallon the majority of drivers may begin to consider alternatives.

These five strategies reduce provided facilities and increase costs to the driver, factors that can frustrate SOV drivers to the point that they seek other means of commuting. All this is designed (sometimes unintentionally) to get people to leave their cars home and find other methods of travel.

C. Encouraging non-vehicular alternatives to SOVs such as bicycling and walking for shorter trips. This involves a willingness on the part of employers to support such programs at their workplaces.

Programs listed below promote non-vehicular alternatives to SOVs and encompass many of the programs discussed above. The work commute accounts for only 25-30 percent of all trips. Other commuting destinations include schools, shopping, recreations, etc.

Employers have the ability to provide incentives to encourage their employees to find alternatives to commuting in SOVs, such as cycling, walking, skating, skateboarding/push scooters, public transit, carpooling, and vanpooling.

1. Providing facilities:

Promoting non-motor vehicular alternatives relies on people to move about under their own power, i.e. if motorized vehicles are not used, people will be pedaling or walking to work. Providing showers and lockers at the workplace promotes these alternative travel modes.

2. Providing onsite bike racks:

Employer provide an array of bike racks, lockers for smaller implements like skates and skateboards, and infrastructure for non-motorized vehicles. Examples include pedestrian/bicycle pathways throughout the worksite, or the restriping of roadways to provide separation between the motorized and non-motorized modes of transport.

3. Providing Incentive programs:

Examples of incentives include, but are not limited to: an extra day of vacation for every "x number of days" an employee commutes without the use of gas/diesel motors; extra pay; lunch vouchers; or, abbreviated work days such as allowing for later arrivals, earlier departures, and/or extra time at lunch.

Cost to employers for providing these incentives might include facility and/or infrastructure improvement and/or loss of productivity (abbreviated workdays). Benefits of these programs might include:

- a. A lower rate of employee absenteeism due to better health associated with the daily exercise of non-vehicular commuting;
- b. A lower rate of employee absenteeism because the stress of sitting in congested traffic is avoided;
- c. Lower costs associated with the provision of vehicular parking spaces (this could be offset by the cost of providing bike racks and/or lockers); and,
- d. Higher productivity and morale associated with better employee health.

A difficulty with travel modes requiring people-power is that in order to commute, employees should not live too far from their place of work. An employer has no control over this situation, but could provide incentives to influence as many employees as possible to commute under their own power. Other difficulties include an employer's inability to force local government to adopt land use strategies promoting these alternative modes, such as TODs. It is important that the local land use codes require creation of non-motorized infrastructure on public roadways, and/or the concentration of mixed land uses (residential, office, and commercial) into smaller areas.

D. *Encouraging vehicular alternatives to SOVs* such as use of carpooling, vanpooling, and transit for intermediate length trips.

Programs:

With the exception of Eagle Point, RVTD provides the RVMPO area with public transit. Along with this service, RVTD promotes use of its bus system and carpooling/vanpooling with local employers, along with many other TDM strategies/programs.

In the early 1990s, RVTD initiated a rideshare program, which is still offered to local employers. This is a carpooling/vanpooling program that teaches employers the logistics of setting up employee carpool/vanpool matching for employees. RVTD also offers to implement this program when employers do not wish to undertake the task on their own. This entails matching via a website (<u>www.carpoolmatchnw.org</u>) and ride matching performed at the worksite by RVTD staff. Carpooling/vanpooling can also be set up by employees who all live in the same general area.

RVTD provides local fixed-route and paratransit opportunities. Since its inception in 1975, RVTD has promoted its service through media ad campaigns, educational events and programs.

Eventually, with continued local growth (and escalating fuel prices), the MPO's population and congestion will increase. When this happens, people will begin to more easily make the choice to leave their SOV at home and use the local bus system.

E. Decreasing the total travel distance:

Adoption of land use procedures to increase residential densities and promote mixed-use developments (TODs) will decrease total commute distances. These developments are critical to achieving compliance with the TPR, which requires integration of land use and transportation plans.

Programs:

While this is probably the most difficult TDM goal to implement, it offers substantial benefits. If proximity of home and work had been the incentive for assigning land use designations 100 years ago, there would not be the urban sprawl that many people today consider "blight". The decades-long low cost of gasoline supported urban sprawl as people chose to live farther from urban and employment centers.

1. Transit-oriented development (TODs):

Several proposed Transit-Oriented Districts (TODs) exist in the RVMPO. Aside from Central Point's Twin Creeks and Southeast Medford TOD developments, the only other TOD close to implementation at this point is the West Main (or West Medford) TOD. Development plans call for increased residential densities, mixed-use developments that could include residential, commercial, and office space, pedestrian/bicycle pathways, access to transit, shared parking, on-street parking, traffic calming measures, and other Integrated Land Use and Transportation Plans (ILUTPs). Medford has other TOD locations Downtown and at Delta Waters. There are also proposals for a TOD in Jacksonville and another in Phoenix.

TOD developments promote reduction of SOV use. Their mixed uses combined with other incentives for traffic reduction indicate a willingness on the part of local governments to propose wide-sweeping changes in the status quo. TODs seek to discourage urban sprawl with increased residential densities that create close networks of homes and jobs. Providing infrastructure for other modes of travel (bikes, transit, and walking), combined with a reduction in the number of parking spaces, effectively forces SOV users to make other transportation choices. These choices provide a host of "domino-effect" benefits:

- Fewer VMTs in SOVs saves on gasoline
- With less gasoline being burned, the environment fares better in terms of air and water (runoff from busy streets) quality
- Less time people spend in traffic jams helps to alleviate stress
- By reducing stress, people arrive at work in a better condition to work
- Arriving in a better condition to work means more productivity for an employer, better health (less absenteeism) for employees, and higher worker morale
- Employers located in a TOD might also be more likely to provide flexed work schedules, or a telecommuting option, and also raises morale and reduces absenteeism
- With provision of more TODs in the RVMPO, there is an increased likelihood that the region will comply with federal and state regulations requiring reduction of VMTs in SOVs.

2. Parking Standards:

Research indicates that most land use codes require too much parking for many commercial, office, and residential uses. Modifying the standards to require fewer spaces or maximum number of spaces will reduce the amount of land consumed by parking and, and to some extent, the convenience of parking.

Developments could be approved which provide for shared parking, especially in those areas where office uses (typically open from 8am-5pm) could share parking with retail uses that are normally operating from 10 a.m. to 10 p.m. Shared parking is not itself a new concept, but it could be used on a much broader basis.

3. Park and Ride Lots:

Land use codes can include park-and-ride lot standards. Some codes do not allow for parking lots without another use on the property, but park-and-rides allow people to choose to ride the bus. As an example, commuters could drive to the lot, park their car or, preferably, some non-motorized form of transportation, and take the bus to work, significantly reducing miles driven in the car.

There are many examples of land use code revisions to promote park-and-ride lots. One example is for a local jurisdiction to draw up a shared parking agreement with a church. During the weekdays when people commute to work, cars could be park in an area mostly used on weekends, then ride a transit system to work.

4. Connectivity:

Another program would modify land use codes to enforce connectivity. Many residential developments today perpetuate sprawl by including cul-de-sacs instead of connecting one roadway with another.

Provision of cul-de-sacs is nothing more than provision of more roadways and longer routes for commuters and emergency response vehicles. Promoting connectivity through various residential developments reduces commuting distances, leading to more pedestrian and cycling use.

5. Signalization:

Ordinances can also be passed to coordinate intersection signals, reducing the number of stops along a route. While this doesn't necessarily shorten the distance of a commute, it certainly shortens the duration.

6. Safety:

If safety concerns limit non-motorized commuting choices, infrastructure can be modified to provide on-street bikeways and to provide more pedestrian pathways. In order to provide on street bikeways, ordinances can be adopted which call for replacing all on-street parking on collector/arterials streets with on-street cycle paths. People who feel safer on a roadway shared with cars may more readily choose bikes for their daily commute.

7. Traffic Calming:

Creation of bicycle boulevards, pedestrian blocks, and bulb-outs, tree-lined streets, window and visibility, (and other features) all contribute to a sense of safety or comfort when walking or cycling.

TDM Policies of the RVMPO:

Goal #6 of the 2009 RTP states:

Use incentives and other strategies to reduce reliance on single-occupant vehicles. Policies

under this stated goal include:

- 6.1: Support TDM strategies.
- 6.2: Facilitate alternative parking strategies to encourage walking, bicycling, carpooling, and transit.
- 6.3: Enhance bicycle and pedestrian systems.
- 6.4: Support transit service.

Another RVMPO policy is for all MPO collectors/arterials to be improved with at least striped bikeways along roadway edges, within the confines of roadway pavement (as opposed to Class I bikeways which are dedicated pathways constructed as a separate entity from roadway pavement). Policy dictates that those collectors/arterials that are being improved include these on-street bikeways as part of the improvement. Some local jurisdictions (Ashland and Medford) have removed on-street parking to make way for bicycle lanes. Other local jurisdictions are encouraged to improve all collectors and arterials with on-street bike paths where existing roadway width can accommodate them. Along with other TDM strategies described elsewhere in this report, including on-street bike paths is one means of moving people from their SOVs to other forms of transportation.

To further this concept, RVMPO policy recommends that each local jurisdiction adopt all the above policies as part of their respective land use ordinances. For example, as TODs (Transit Oriented Developments) are proposed, it is RVMPO policy that these areas provide the greatest level of pedestrian accessibility possible, that these areas be developed with the highest residential densities possible, and that they contain employment centers.

In similar fashion, the above policies could be adopted into local TSPs to encourage the implementation of TDM measures which should decrease reliance on the SOV.

C. TDM Actions:

This section is a summary listing of those proposed TDM actions introduced earlier in this report and in the 2009 RTP. Some of these actions were proposed to facilitate implementation of Alternative Measures and Integrated Land Use and Transportation Plans (ILUTPs).

- **1. Transit:** (as funding allows)
 - Continue funding and promotion of the MPO's transit service, and provide connectivity to the bus system.
 - Provide required infrastructure (bikeways and sidewalks) to enhance connectivity, which promotes use of non-SOV modes (such as transit).
 - Provide park/ride facilities near transit routes.
 - Improve pedestrian access to transit (as in TODs).
 - Support funding to ensure viability of transit service.
 - Ensure transit for disabled/elderly.
 - o Provide transit shelters/bike racks in appropriate locations.
 - Review transit ridership and adjust routing accordingly. As in TODs, provide service within ¹/₄ mile of all urban areas.
 - o Reduce transit headways and expand service hours and days.
 - Establish bays on congested streets so that buses don't block traffic flow.
 - Support transit use among major employers by encouraging the purchase of

individual or subsidized group transit passes, adding bus shelter nearby or other actions to reduce commuting trips.

• Encourage development of discount transit fare programs and shuttle services by event sponsors.

2. Actions related to Parking:

- Encourage lower minimum and maximum parking space standards and increase infill development and provide an option to decrease parking even further with the use of other TDM measures, such as: provision of attractive bicycle and pedestrian facilities, and provision of carpool spaces within ¹/₄ mile of transit service.
- Designate some existing parking spaces for special use, such as designated spaces near building entrances as 'carpool only'.
- Redesign on-street parking spaces as bike lanes or transit stops.
- Modify parking design standards that would require parking at the side or rear of buildings for better pedestrian access to entrances.
- Create park-and-ride lots and/or the support of shared parking agreements. Park-and-ride lots are usually constructed near transit stops or stations to accommodate riders' needs to utilize public transit. Shared parking agreements relate to the use (for example) of a church parking lot by commuters during normal workdays. These actions can be supported through passage of appropriate land use ordinance amendments.

3. Pedestrian and Bicycle Actions:

- Encourage the expansion of regionally connected networks of off-street bicycle and pedestrian facilities (such as the Bear Creek Greenway) and permit only minimal roadway crossings of these facilities.
- o Encourage creation of a non-motorized route classification system.
- o Plan for and build/maintain shared roadways for use by all modes.
- Adopt new land use standards which promote bicycle and pedestrian travel by requiring amenities that support these modes of travel, such as: bike racks, crosswalks, sidewalks, showers and locker facilities at worksites and at retail centers.
- Provide continuous and connected sidewalks in new development while discouraging construction of sidewalk segments.
- Some jurisdictions are promoting themselves as pedestrian/cycling friendly towns which provide off-street pathways, walking tours, and rental services for bicycles, Segways, and skates. The primary action which enhances the cycling/pedestrian activities is the provision of infrastructure for these activities so they may safely and comfortably occur.
- Prioritize all city/county TSP bicycle and pedestrian construction projects to be complete in the earlier phases of TSP implementation.
- Encourage large developments to have bicycle/pedestrian circulation plans.

4. Land Use Ordinance Actions:

- Adopt land use codes to facilitate construction of fewer parking spaces, more bicycle and pedestrian amenities/connectivity, and to provide connections to transit opportunity.
- Adopt a Trip Reduction Ordinance (TRO). Such an ordinance exists in Portland, Oregon and is applicable to the area's largest employers. The goal is to require (through air quality mandates as an example) the larger employers to comply with the TRO by reducing commuter trips.

Incentives can be offered for both employers and employees. Those employers providing opportunities and amenities for biking to work are allowed to reduce the total number of workplace vehicular trips. Fewer calculated trips means lower emissions from the workplace and fewer emissions translates to greater compliance with the TRO.

Incentives the employer can provide include: car/vanpool parking spaces located near the building's entrance; the opportunity to work flex time and staggered hours; the ability to use onsite facilities (locker, showers, etc.); provision of subsidized bus passes; and, provision of a guaranteed ride home in a company car should a carpooling employee have an emergency.

As these incentives are offered, the number of trips being taken to the workplace decreases. This decrease in trips is a natural result of people commuting via modes of travel that do not create the emissions that the SOVs produce. A reduction in emissions by any employer translates to compliance with the TRO. Adoption of TROs into local land use ordinances is then another means to foster the reduction of SOV use in the Rogue Valley.

Many of the RVMPO jurisdictions are opting for the land use alternative of TODs. Transit funding permitting, a proposed action would be to provide more routes and more frequent service.

As with TRO development, the proposed action is for local jurisdictions to adopt multi-use standards for new developments, especially for those developments located near downtowns and existing or proposed transit routes. Jurisdictions within the MPO are aware of the intent of the TPR and federal requirements to reduce reliance on SOVs, and are encouraged to modify their land use regulations to reflect that intent.

5. Developer/Employer/Educational Actions:

- o Identify, assist, and encourage role models who use alternative transportation.
- Encourage developers to build higher density/multi-use buildings.
- Partner with city governments to encourage employers with more than 50 employees to adopt TDM strategies as part of company policy.
- Encourage use of staggered work hours by the valley's employers.
- Engage in public, government, and employer outreach to raise awareness about the use of TDM strategies/actions, including actively marketing to groups that have the greatest potential for reducing SOV trips.
- Provide public education at fairs, festivals, and other large-scale events.
- Facilitate meetings of the Rogue Valley Transportation Management Association (RVTMA) which works with local employers to reduce commutes.
- Encourage local governments and local employers to model TDM strategies related to work hours (staggered and/or flexed work hours/days, telecommuting) and

ridesharing (carpools, vanpools, guaranteed ride home).

D. Funding:

Funding to implement TDM programs will be initiated and monitored by the individual jurisdictions. While state law calls for inclusion of TDM programs in all state Transportation System Plans, it is up to the jurisdictions themselves to pay for these programs. Potential funding sources listed below were obtained from an online TDM Encyclopedia, updated in July 2008 by the Victoria Transport Policy Institute at: <u>http://www.vtpi.org/tdm/tdm119.htm</u>.

- Parking Pricing
- Special Parking Taxes
- Road Pricing (tolls)
- Fuel Tax Increases/Surcharges
- Carbon Taxes (taxes on emissions)
- Dedicated Local/Regional Sales Taxes
- Transportation Impact Fees (TIF)
- Special Property Taxes
- Vehicle Impact Mitigation Fees
- Business/Employee Assessments
- Grants
- Congestion Pricing
- Special Funding for Transportation Problem Solving.

According to the same website, the best funding options are those that are: stable and predictable; considered to be equitable; supportive of TDM objectives (such as: reduction of reliance on single-occupant vehicle use, shift of travel to other modes, and shifting of travel to non-peak hours); and, they are relatively easy to monitor/administer.

There is a difference in funding sources between TDM facilitation (such as this guide) and TDM implementation, which actually funds TDM projects. To facilitate a TDM program, the grant approach would most likely be preferable. To implement and sustain a TDM program would require pricing/taxing schemes as listed above.

Proposed TDM Project List

A. Identification of TDM Strategies

The source of information for new TDM strategies and evaluation criteria is the Victoria Transport Policy Institute (VTPI). The VTPI is an independent research organization dedicated to developing innovative and practical solutions to transportation problems. It provides a variety of resources available free at <u>http://www.vtpi.org/</u> to help improve transportation planning and policy analysis. VTPI is funded primarily through consulting and project grants. VTPI research is among the most current available and has been widely applied. It can help:

- Identify better solutions to transportation problems, including some approaches that are frequently overlooked or misunderstood.
- Identify the full benefits, costs and equity impacts of alternative transportation policies and programs.

- Compare and evaluate alternatives.
- Create a bridge between theory and practice.

B. Recommendations for Expanded TDM

Table 3 below includes TDM strategies indentified by The Victoria Transport Policy Institute (VTPI) that are suitable for MPO's to coordinate and implement. Additional information can be accessed by clicking on the strategy in the table.

Table 3 - TDM Strategies Appropriate for MPOs to Coordinate & Implement ¹			
Strategy	Strategy Description		
Asset Management	Policies and programs to preserve the value of assets such as roadways and parking facilities.		
Bus Rapid Transit	Bus Rapid Transit (BRT) systems provide high quality bus service on busy urban corridors.		
Change Management	Ways to build support for institutional change.		
Freight Transportation Management	Strategies for improving the efficiency of freight and commercial transport.		
Funding Options	Describes various ways to fund transportation programs and evaluates the degree to which they support TDM objectives.		
HOV Priority	Strategies that give transit and rideshare vehicles priority over other traffic.		
Institutional Reforms	Creating organizations that support efficient transport.		
Least-Cost Planning	Creating an unbiased framework for transport planning.		
Light Rail Transit	Light Rail Transit systems provide convenient local transit service on busy urban corridors.		
Location Efficient Development	Development that maximizes multi-modal accessibility		
Operations and Management	Programs that encourage more efficient use of existing roadway systems.		

¹ Victoria Transport Policy Institute (VTPI), 2009

Table 3 - TDM Strategies Appropriate for MPOs to Coordinate & Implement ¹			
Strategy	Strategy Description		
Park-and-Ride	Providing convenient parking at transit and rideshare stations.		
Regulatory Reform	Policy changes to encourage competition, innovation, diversity and efficiency in transport services.		
Ridesharing	Encouraging carpooling and vanpooling.		
Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes.		
Smart Growth	Land use practices to create more efficient and livable communities.		
Smart Growth Reforms	Policy and planning reforms that encourage Smart Growth.		
TDM Programs	Developing an institutional framework for implementing TDM.		
Transit Improvements	Strategies for improving public transit services.		
Transit Station Improvements	Improve public transit stops and stations so they are more convenient, comfortable and attractive.		
Transit Oriented Development	Using transit stations as a catalyst for creating livable communities.		
Transportation Management Associations	Member-controlled organizations that provide transportation services in a particular area.		
Transportation Model Improvements	Discusses ways to improve transport models.		

Evaluation of TDM Strategies

The MPO Public Advisory Council (PAC) and Technical Advisory Committee (TAC) evaluated the set of TDM strategies in Table 3 using the criteria in Tables 4 & 5 below.

Table 4 – Travel Impact Criteria
Objectives
Reduces total traffic.
Reduces peak period traffic.
Shifts peak to off-peak periods.
Shifts automobile travel to alternative modes.
Improves access, reduces the need for travel.
Increased ridesharing.
Increased public transit.
Increased cycling.
Increased walking.
Increased Telework.
Reduced freight traffic.



The TDM strategies in Table 3 and criteria in Tables 4 & 5 are combined into matrices for the PAC and TAC to use for the evaluation.

TDM Project List

Travel Impact and Benefits evaluation surveys were sent to the PAC, TAC and other interested parties in early December 2009. Five completed TDM evaluation surveys were returned to the MPO. The surveys were compiled (both Travel Impact and Benefits) and ranked based on the number of combined points each strategy received.

As a starting point for refining the TDM strategies, staff took the top five ranked TDM strategies from the evaluation survey and identified implementation measures from information provided by the Victoria Transport Policy Institute (VTPI) TDM Encyclopedia.

TDM Strategies and Implementation Measures

Table 6 below depicts the top five ranked TDM strategies identified through the TDM evaluation survey conducted in December 2009. Each TDM strategy includes a list of implementation measures. Table 7 includes the rankings for travel impacts, Table 8 includes rankings for TDM strategy benefits, and Table 9 is a composite of the two previous tables. **Table 6 Top Five TDM Strategies and Implementation Measures**

Strategy	Implementation Measures	How Implemented
Smart Growth	 Increased Density and Infill Development Transit Oriented Development Jobs/Housing Balance Tax, Development Fees and Utility Pricing Reforms Neo-traditional Design Site Design and Parking Management 	• Local growth controls, incentives, taxes, zoning codes, and design controls.
Location Efficient Development	• Location Efficient Mortgage Programs A Location Efficient Mortgage® (LEM) is a type of mortgage that recognizes the savings available to people who live in location efficient communities. LEM lenders count this available savings as additional income for people buying homes in location efficient communities. So people who might not otherwise qualify for a mortgage can become homeowners with a LEM, and qualified homebuyers can secure larger mortgages than would otherwise be available to them.	• Reformed lending practices
Change Management	 Work to create a climate that values innovation and supports appropriate risk taking. Establish a vision with clear goals, objectives and performance indicators. Communicate a sense of urgency. Educate stakeholders about new policies and programs. Emphasize (but don't exaggerate) benefits. 	 Outreach & education programs
Smart Growth Reforms	 Implement utility pricing, public service fees and taxes which reflect differences in the costs of supplying public services due to differences in location accessibility. Reform zoning codes, particularly 	• Local ordinances, fees and reformed lending practices

Table 6 below depicts the top five ranked TDM strategies identified through the TDM evaluation survey conducted in December 2009. Each TDM strategy includes a list of implementation measures. Table 7 includes the rankings for travel impacts, Table 8 includes rankings for TDM strategy benefits, and Table 9 is a composite of the two previous tables. Table 6 Top Five TDM Strategies and Implementation Measures				
	 parking requirements and roadway design standards. Collect additional roadway user fees and parking charges to represent rent and property taxes on roadway rights-of- way. Encourage urban redevelopment and brownfield rehabilitation. Encourage development that reflects Smart Growth principles. Improve the evaluation of alternative modes to better recognize their full value to society. Reform residential lending practices to reflect the additional transportation costs of sprawled housing locations, and implement location-efficient development and mortgages. Correct transportation market distortions that under-price automobile travel, including more direct charges for the use of roads and parking facilities, distance-based insurance and registration fees, and special charges for external costs imposed by automobile use. 			
Road Pricing	 Roadway management strategies: HOV HOT (toll) Congestion Pricing Roadway Pricing (pay for using roads) Value Pricing (pay for using less congested roads) 	 Fees, dedicated HOV/HOT lanes, tolls 		

Table 7

TDM Travel Impacts Evaluation				
Strategy	Strategy Description	Total Points	Ranking	
Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes.	82	1	
Change Management	Ways to build support for institutional change.	78	2	
Smart Growth	Land use practices to create more efficient and livable communities.	75	3	
TDM Programs	Developing an institutional framework for implementing TDM.	66	4	
Regulatory Reform	Policy changes to encourage competition, innovation, diversity and efficiency in transport services.	63	5	
Location Efficient Development	Development that maximizes multi-modal accessibility	62	6	
Operations and Management	Programs that encourage more efficient use of existing roadway systems.	62	6	
Institutional Reforms	Creating organizations that support efficient transport.	61	8	
Smart Growth Reforms	Policy and planning reforms that encourage Smart Growth.	59	9	
Least-Cost Planning	Creating an unbiased framework for transport planning.	57	10	
Light Rail Transit	Light Rail Transit systems provide convenient local transit service on busy urban corridors.	51	11	
Transit Oriented Development	Using transit stations as a catalyst for creating livable communities.	51	11	
Funding Options	Describes various ways to fund transportation programs and evaluates the degree to which they support TDM objectives.	50	13	
Transit Improvements	Strategies for improving public transit services.	50	13	
Ridesharing	Encouraging carpooling and vanpooling.	49	15	
Transportation Management Associations	Member-controlled organizations that provide transportation services in a particular area.	49	15	
Park-and-Ride	Providing convenient parking at transit and rideshare stations.	47	17	
Bus Rapid Transit	Bus Rapid Transit (BRT) systems provide high quality bus service on busy urban corridors.	43	18	
Transit Station Improvements	Improve public transit stops and stations so they are more convenient, comfortable and attractive.	41	19	
HOV Priority	Strategies that give transit and rideshare vehicles priority over other traffic.	38	20	
Freight Transportation Management	Strategies for improving the efficiency of freight and commercial transport.	34	21	
Transportation Model Improvements	Discusses ways to improve transport models.	29	22	
Asset Management	Policies and programs to preserve the value of assets such as roadways and parking facilities.	5	23	

Table 8

TDM Strategies Benefits Evaluation				
Strategy	Strategy Description	Total Points	Ranking	
Location Efficient Development	Development that maximizes multi-modal accessibility	52	1	
Smart Growth	Land use practices to create more efficient and livable communities.	47	2	
Smart Growth Reforms	Policy and planning reforms that encourage Smart Growth.	45	3	
Bus Rapid Transit	Bus Rapid Transit (BRT) systems provide high quality bus service on busy urban corridors.	44	4	
Asset Management	Policies and programs to preserve the value of assets such as roadways and parking facilities.	42	5	
Transit Oriented Development	Using transit stations as a catalyst for creating livable communities.	42	5	
Light Rail Transit	Light Rail Transit systems provide convenient local transit service	40	7	
Transit Improvements	Strategies for improving public transit services.	37	8	
HOV Priority	Strategies that give transit and rideshare vehicles priority over other traffic.	35	9	
Institutional Reforms	Creating organizations that support efficient transport.	35	9	
TDM Programs	Developing an institutional framework for implementing TDM.	35	9	
Operations and Management	Programs that encourage more efficient use of existing roadway systems.	34	12	
Least-Cost Planning	Creating an unbiased framework for transport planning.	33	13	
Regulatory Reform	Policy changes to encourage competition, innovation, diversity	31	14	
Ridesharing	Encouraging carpooling and vanpooling.	31	14	
Transit Station Improvements	Improve public transit stops and stations so they are more convenient, comfortable and attractive.	29	16	
Change Management	Ways to build support for institutional change.	27	17	
Freight Transportation Management	Strategies for improving the efficiency of freight and commercial transport.	27	17	
Transportation Management Associations	Member-controlled organizations that provide transportation services in a particular area.	27	17	
Transportation Model Improvements	Discusses ways to improve transport models.	27	17	
Park-and-Ride	Providing convenient parking at transit and rideshare stations.	26	21	
Funding Options	Describes various ways to fund transportation programs and evaluates the degree to which they support TDM objectives.	24	22	
Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes.	20	23	

Тя	h	e	9	

	TDM Travel Impacts and Benefits Evaluation		
Strategy	Strategy Description	Total Points	Ranking
Smart Growth	Land use practices to create more efficient and livable communities.	122	1
Location Efficient Development	Development that maximizes multi-modal accessibility	114	2
Change Management	Ways to build support for institutional change.	105	3
Smart Growth Reforms	Policy and planning reforms that encourage Smart Growth.	104	4
Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes.	102	5
TDM Programs	Developing an institutional framework for implementing TDM.	101	6
Institutional Reforms	Creating organizations that support efficient transport.	96	7
Operations and Management	Programs that encourage more efficient use of existing roadway	96	7
Regulatory Reform	Policy changes to encourage competition, innovation, diversity and efficiency in transport services.	94	9
Transit Oriented Development	Using transit stations as a catalyst for creating livable	93	10
Light Rail Transit	Light Rail Transit systems provide convenient local transit service on busy urban corridors.	91	11
Least-Cost Planning	Creating an unbiased framework for transport planning.	90	12
Bus Rapid Transit	Bus Rapid Transit (BRT) systems provide high quality bus service on busy urban corridors.	87	13
Transit Improvements	Strategies for improving public transit services.	87	13
Ridesharing	Encouraging carpooling and vanpooling.	80	15
Transportation Management Associations	Member-controlled organizations that provide transportation services in a particular area.	76	16
Funding Options	Describes various ways to fund transportation programs and evaluates the degree to which they support TDM objectives.	74	17
HOV Priority	Strategies that give transit and rideshare vehicles priority over other traffic.	73	18
Park-and-Ride	Providing convenient parking at transit and rideshare stations.	73	18
Transit Station Improvements	Improve public transit stops and stations so they are more convenient, comfortable and attractive.	70	20
Freight Transportation Management	Strategies for improving the efficiency of freight and commercial transport.	61	21
Transportation Model Improvements	Discusses ways to improve transport models.	56	22
Asset Management	Policies and programs to preserve the value of assets such as roadways and parking facilities.	47	23

Other Studies/Research

A subsequent analysis of commuter software put out by the Environmental Protection Agency (EPA) in 2008 also revealed the lack of success in getting Rogue Valley residents out of their SOVs and onto local buses. The software is an EPA assessment tool that provides estimates on how commuter habits can affect nitrogen oxide, particulate matter and air toxic emissions, and fuel use and costs.

Using this EPA software to model the MPO's most congested areas, RVMPO staff discovered that the local transit system does not operate at a sufficient level to create any measurable reductions of Rogue Valley trips in SOVs. Analysis of the entire MPO area using the model was not considered viable due to the results returned on the few congested areas. It would then be reasonable to conclude that the Rogue Valley does not have sufficient concentrations of population that would cause commuters to abandon their SOVs for alternative modes of transportation, specifically transit.

Larger west-coast cities have viable public transportation systems, and sufficient population to support these TDM actions. The larger the city, the more ridership, the more funding is available, the more TDM actions begin to make sense. Portland has an extensive public transportation system supported by buses, streetcar and light rail. Bay Area Rapid Transit (BART) is another example of a west coast urban center taking advantage of public funding to create a viable transportation system that causes people to leave their cars home and take transit. Further incentives in these areas include elevated prices for parking in downtown areas. Extreme cases of this occur in Europe where SOV users are charged "congestion fees" to enter certain parts of downtown areas. These are all places where the local population far exceeds that of the entire Rogue Valley.

The Lloyd Center Transportation Management Association (LCTMA) in Portland is an example of an active TMA that has adopted land use incentives for private developers to facilitate TDM programs to reduce SOVs and improve air quality. For example, the city may permit a developer to build more office space in lieu of providing more parking spaces, if the developer gives employees subsidized monthly bus passes, places bike racks next to the building, creates car pool programs for employees, or constructs locker rooms for biking/walking commuters. There are other examples and incentives, but this is an example of how areas with larger populations are able to generate public/private support for alternative forms of transportation.

One of the most attainable TDM actions in this region is the adoption of land use codes that support Transit-Oriented-Development (TOD). There is one existing TOD (Twin Creeks) in Central Point, and several similarly designated areas in the City of Medford. There are many TODs worldwide that are serving to reduce SOVs on local roadways. Locally, TODs are probably the most easily applied TDM action, through adoption of TOD standards by local jurisdictions.

Conclusion

Through analyses of the currently adopted Alternative Measures, it is evident that the Rogue Valley is meeting some success with TDM measures currently in place. Local transit system struggles stem primarily from a lack of congestion and the smaller population that limits funding

opportunities to support expanded service.

The population of the Rogue Valley is significantly smaller than those areas that have implemented successful TDM programs. The best chance for TDM concepts in the area remains the adoption of land use standards which support TOD developments. The standards are easily adapted to the Urban Growth Boundary (UGB) concept which the state has adopted. Higher densities are needed to support the purpose of a UGB and placing higher densities near transit lines is a logical subsequent step to adopting TOD standards.

TDM Corridor Identification

The purpose of this section is to identify potential corridors to implement TDM strategies, using data from the RVMPOv2 regional travel demand model. The intent is to apply TDM strategies along highly congested corridors to improve travel time.

Congested Roads

Traffic Congestion is generally expressed by the volume to capacity ratio (v/c), which is the ratio of the number of vehicles on a roadway to the roadway design capacity. A v/c of 0.0 to 0.8 is generally free flowing. Delays begin occurring around 0.9. A v/c of 1 indicates that capacity has been reached, resulting in significant delay. An example of a volume-capacity ratio of 1 is an intersection where motorists wait through more than one traffic signal cycle.

Though RVMPOv2 regional travel demand model does output roadway volumes, the model's roadway capacity is an "average" capacity, and has not been developed to the same detailed data level as is normally required for a formal v/c analysis. Subsequently, the model output should not be used for v/c. Instead, the model's volume to capacity ratio is defined as a Demand-to-Capacity (d/c), which can be used to "ballpark" congestion on the roadway system.

The RVMPOv2 was used to examine travel conditions on several key roads. Results on Tables 10 and 11 depict estimated existing and future conditions (existing conditions are from 2006 to reflect the travel demand model's base year). Travel conditions expressed are for peak hour conditions, calculated to be the time period that a motorist is likely to encounter the greatest amount of travel in the RVMPO region, generally considered late afternoon-early evening hours. On the two tables in this section, roadway congestion, as defined by d/c, increases from the top of the table to the bottom. The numbers in the roadway columns are the number of lane miles on each particular road that are within the d/c ranges indicated in the first column.

Demand/Capacity Ratios	Hwy 62	I-5	Foothill Rd	N Phoenix Rd	Hwy 99 South	Hwy 99 North	Table Rock Rd	Hwy 238
0 - 0.59	20	86	12	6	46	5	22	26
0.59 - 0.69	8	11	0	2	2	2	1	0
0.69 - 0.79	12	1	0	2	2	0	0	0
0.79 - 0.89	8	1	0	0	1	0	0	0
0.89 - 0.99	2	1	0	0	0	0	0	0
0.99 - 9.99	1	1	0	0	0	0	0	0
Total Lane Miles	51	101	12	10	51	7	23	26

Table 10: Model-estimated traffic volumes, 2006

The data in Table 11 shows that in 2006 (RVMPOv2 model base year), traffic congestion in the selected corridors is minor, approximately 5 lane miles. There are small incidences of congestion attributed to lane miles along Hwy 62 and I-5 (Demand/Capacity Ratios greater than 0.89).

Demand/Capacity Ratios	Hwy 62	I-5	Foothill Rd	N Phoenix Rd	Hwy 99 South	Hwy 99 North	Table Rock Rd	Hwy 238
0 - 0.59	7	40	0	4	40	1	25	24
0.59 - 0.69	7	25	2	1	4	3	2	1
0.69 - 0.79	8	8	1	0	2	1	1	1
0.79 - 0.89	12	25	4	1	0	0	0	0
0.89 - 0.99	9	1	4	0	4	0	0	0
0.99 - 9.99	9	2	1	2	1	2	1	0
Total Lane Miles	52	101	12	8	51	7	29	26

 Table 11 Model-estimated traffic volumes. 2034

Based on the estimated 2034 traffic volumes from RVMPOv2, several of the selected corridors will experience potential congestion in the future, see Table 12. Hwy 62, Foothill Road, North Phoenix Road, Hwy 99 North & South and Table Rock Road are corridors that the model predicts will have high Demand/Capacity Ratios (greater than 0.89).

Evaluating TDM Costs

TDM strategies can impose the following costs.

Program Costs

Many TDM programs have direct resource costs, including financial expenses, road space and traffic management priorities, and staff time.

Consumer Costs

Some TDM programs increase motorist costs and travel time. In response to these higher costs, some consumers forego travel or shift to less convenient travel modes.

Transaction Costs

Some TDM strategies increase transaction costs. For example, charging motorists directly for parking or road use requires systems to collect money and enforce payment. They also inconvenience motorists. (Newer electronic pricing mechanisms can significantly reduce transaction costs.)

Economic Transfers

TDM strategies that involve pricing result in economic transfers, that is, money is transferred from one group or economic sector to another (<u>Evaluating Pricing</u>). These are not true resource costs, but they represent costs to the consumers and businesses that pay additional charges.

Spillover Impacts

Some TDM strategies have spillover impacts that should be considered in evaluation. For example:

- <u>Road Pricing</u> may shift vehicle travel and congestion problems to untolled roads.
- <u>Traffic Calming</u> may shift traffic impacts to other roads.

<u>Parking Pricing</u> in one area may increase parking problems in nearby areas, and may shift economic activity to areas that offer free parking.

Consumer Costs of Reduced Mobility

Critics of TDM sometime argue that strategies which reduce automobile travel impose significant but difficult-to-measure reductions in consumer mobility benefits. This is not quite true. The following guidelines can be used to evaluate consumer mobility costs from TDM:

- 1. TDM strategies that are optional to consumers and rely on positive incentives (such as improvements in alternative modes and positive financial incentives such as <u>Parking Cash</u> <u>Out</u>) directly benefit consumers, or they would not accept them.
- 2. The consumer surplus impacts of pricing incentives can be measured using the *rule of half*.
- 3. Most TDM incentives allow consumers to choose which trips to forego, resulting in reductions in the least-beneficial vehicle travel, so reductions in consumer surplus tend to be small.
- 4. <u>Road</u> and <u>Parking</u> pricing are economic transfers (money shifted) and so their overall impacts depend on how revenues are used. For example, Road Pricing costs may be offset by reductions in taxes or public service improvements financed by the additional revenue.

Resource Costs and Economic Transfers

It is important to differentiate between resource costs and economic transfers. Resource costs reduce the total supply of a scarce resource. Economic transfers shift resources from one person or group to another. For example, traffic crashes cause economic costs (i.e., damage to vehicles and people). <u>Parking Pricing</u> is primarily an economic transfer, since payments by motorists are revenue to the parking facility owner.

Conversely, when an employer provides financial incentives to commuters who use alternative modes, this cost to employers is offset by the economic benefit to the commuters who receive

additional money. The true *resource* costs of such programs are any transaction and enforcement costs, such as administrative and policing expenses, and any additional inconvenience to users, such as the time required to make a payment. When evaluating TDM programs that involve pricing it is important to take into account both the costs (payments) and the benefits (revenue) of these economic transfers. Of course, such costs and benefits are very real and important to the individuals who pay or receive them, and have important equity impacts that must be considered, as described later.

Valuing Travel Time Changes

Conventional traffic <u>Models</u> often use simplified travel time cost functions which assumes that any shift from driving to an alternative mode increases travel time costs. This is wrong for two reasons. First, alternative modes are sometimes as fast as driving. Cycling is often as fast as driving for short trips, door-to-door. Ridesharing and transit are sometimes faster than driving with grade separated systems or <u>HOV Priority</u>.

Second, consumers do not always consider additional travel time a cost. The value that people assign to travel time is highly variable, depending on factors such as comfort and enjoyment. For example, some people consider transit or rideshare travel to be less stressful than driving in traffic. Other people enjoy walking or bicycling for recreation and exercise, and will choose these modes even if the trips take longer. In other words, consumers sometimes consider time spent travel by alternative modes to have a lower cost per minute than driving.

If a positive incentive (such as a <u>Transit Improvements</u>, <u>Pedestrians and Cycle Improvements</u> or <u>Parking Cash Out</u>) induces consumers to shift from driving to an alternative mode, they must be directly better off or they would not make the change.

For this reason, newer transport cost <u>Models</u> use consumer surplus analysis to measure the incremental costs and benefits of travel changes. This techniques estimates net benefits and costs to consumer based on their willingness-to-pay (Small, 1999). This is a far more accurate way to measure economic impacts than traffic models that use general assumptions about travel time costs.

Economic Development Impacts

Transportation Demand Management tends to support economic development by increasing transportation system efficiency and shifting consumer expenditures to goods that provide more local employment and business activity (TDM and Economic Development). Many TDM strategies can increase economic efficiency and productivity because they reflect Market Principles. This is not to say that all TDM programs increase economic development, but choosing TDM policies and strategies that reflect market principles can provide additional economic benefits that are not usually reflected in conventional economic analysis.

For example, funding road and parking facilities with user charges tends to be more efficient and fair than indirect funding, and variable fees that increase during congested periods are more efficient and equitable than flat fees. Similarly, strategies that improve transport choice (particularly improvements to <u>Basic Mobility</u>) can provide broad economic benefits that may be difficult to measure. Economic analysis should indicate how a proposed policy or program

impacts market principles and economic development objectives.

Various techniques can be used to <u>Model</u> the economic impacts of a particular transportation policy or project, including transportation-land use models, benefit-cost analysis, input-output models, economic forecasting models, econometric models, case studies, surveys, real estate market analysis and fiscal impact analysis (Cambridge Systematics, 1998; Weisbrod, 2000; O'Fallon, 2003).

Double-Counting

The transportation improvement objectives used in the Encyclopedia were selected to reflect different perspectives and priorities. For example, one planning process or stakeholder group may be most interested in congestion reduction and safety benefits, while another may be most concerned with consumer choice and environmental protection. As a result, the categories that are used are not mutually exclusive: they may overlap. For example, traffic congestion reduction is an objective in itself and can also affect environmental protection, road safety and community livability. If a benefit-cost analysis is used it is important to take such overlaps into account to avoid double-counting.

The operating costs for traffic monitoring, management, and control systems, such as integrated traffic control systems, incident management programs, and traffic control centers, are eligible for federal reimbursement from National Highway System and Surface Transportation Program funding. For projects located in air quality non-attainment and maintenance areas, and in accordance with the eligibility requirements of 23 USC 149(b), CMAQ Improvement Program funds may be used for operating costs for a 3-year period, so long as those systems measurably demonstrate reductions in traffic delays. Operating costs include labor, administration, utilities and rent, and system maintenance, associated with the continuous operation of the system.

The movement of people, goods, and vehicles on the nation's surface transportation system is now critically dependent on how effectively that system is managed and operated. Adding to the roadway system is necessary in some key locations and corridors to serve the demands for this movement, and in some cases, provide for economic development in the area. However, the construction of new lanes will never alleviate the need for effective management and operations of the system - on existing as well as new segments. Well planned, cost-effective transportation operations and management actions can improve mobility, safety, and productivity of the system for transportation users in urban and rural areas.

Funding Background - Legislative

The Transportation Equity Act for the 21st Century (TEA-21), signed into law on June 9, 1998, reinforces the Federal commitment to manage and operate the nation's transportation system. Under TEA-21, the Federal-aid Highway Program continues eligibility of operating costs for traffic monitoring, management, and control.

(1) The legislation defines operating costs as including labor, administration, utilities and rent, and other costs associated with the continuous management and operation of traffic systems, such as integrated traffic control systems, incident management programs, and traffic control centers.

(2) An "operational improvement" continues to mean a capital improvement for installation of

traffic surveillance and control equipment; computerized signal systems; motorist information systems; integrated traffic control systems; incident management programs; transportation demand management facilities; strategies, and programs; and such other capital improvements to public roads as the Secretary may designate, by regulation.

(3) By definition, an operational improvement still does <u>not</u> include restoration or rehabilitating improvements; construction of additional lanes, interchanges, and grade separations; and construction of a new facility on a new location. For both National Highway System (NHS) and Surface Transportation Program (STP), TEA-21 continues the eligibility of capital and operating costs for traffic monitoring, management, and control facilities and programs.

(4) Also, TEA-21 clarifies the eligibility of NHS and STP funds for ITS capital improvements to specifically allow funds to be spent for infrastructure-based ITS capital improvements.

(5) For the CMAQ Improvement Program, TEA-21 continues to include the establishment or operation of a traffic monitoring, management, and control facility or program as potentially eligible projects.

(6) TEA-21 also explicitly adds, as an eligible condition for funding, programs or projects that improve traffic flow, including projects to improve signalization, construct high occupancy vehicle lanes, improve intersections, and implement ITS strategies.

Interpretation / Rationale

Examples of typical eligible operating cost and expenses for traffic monitoring, management, and control include those costs mentioned in the legislative definition for operating costs. In order to assure continuous operation, costs associated with maintaining these systems are necessary operating expenses so that traffic monitoring, management, and control facilities or programs provide their intended functions. Examples of these maintenance costs include system maintenance activities to assure peak performance (preventive computer maintenance) and replacement of defective or damaged computer components and other traffic management system hardware (including street-side hardware). Specific eligibility determinations related to traffic control operational costs and maintenance expenses are the discretion of the FHWA Division Office in a particular state.

This interpretation is consistent with the FHWA Strategic Plan, specifically related to the Mobility Goal and the Strategic Objective to "improve the operation of the highway systems and intermodal linkages to increase transportation access for all people and commodities." In light of TEA-21, which reaffirms and increases the Federal commitment to manage and operate the nation's surface transportation system, this interpretation is also consistent with the intent of Congress.

It is appropriate for FHWA to adopt policies that encourage efficient management and operation of surface transportation. With a greater shift toward applying technology to addressing transportation needs, a broader life-cycle view of transportation operations is warranted that includes all activities related to sustaining system performance.

Examples

Some of the types of Federal-aid projects that may be funded include the installation and integration of the Intelligent Transportation Systems Infrastructure such as:

• Planning for regional Management and Operations programs

- Traffic Signal Control Systems
- Freeway Management Systems
- Incident Management Systems
- Multimodal Traveler Information Systems
- Transit Management Systems
- Electronic Toll Collection Systems
- Electronic Fare Payment Systems
- Railroad Grade Crossing Systems
- Emergency Services
- Implementation of the National ITS Architecture for metropolitan and rural areas
- Development of regional ITS Architecture

Some examples of typical Federal-aid capital improvement projects that may include eligible operating costs include:

- System Integration
- Telecommunications
- Reconstruction of Buildings or Structures that house system components
- Control / Management Center (Construction) and System Hardware and Software for the projects
- Infrastructure-based Intelligent Transportation System capital improvements to link systems to improve transportation and public safety services
- Dynamic / Variable message signs
- Traffic Signals

Some examples of typical eligible operating costs and expenses for traffic monitoring, management, and control include:

- Labor Costs
- Administrative costs
- Costs of Utilities and Rent
- Other costs associated with the continuous operation of the above-mentioned facilities and systems
- System Maintenance (activities to assure peak performance)
- Replacement of defective or damaged computer components and other traffic management system hardware (including street-side hardware).

Table 12 provides cost estimates for specific TDM projects to be included in the Guide. Cost estimates for FY 2010 were provided by RVTD. Short, medium and long-term cost estimates are based on anticipated funding (e.g., ODOT will continue funding and RVMPO approves STP funding for TDM). See assumptions in the table below for more information.

Table 12: Proposed RTP Budg	et Scenario for RV	TD TDM Pr	ograms (2009	-2034)	
RVTD TDM Activity		Short-Term	Medium-Term	Long-Term	Total
		(2009-2013)	(2014-2019)	(2020-2034)	(2009-2034)
	Funding Sources	Programmed	ODOT & RVN	1PO Funding I	Vot Planned
-	ODOT	\$233,986	\$194,868	\$487,170	\$916,024
Education	RVMPO	\$64,500	\$194,868	\$487,170	\$746,538
	Locat	\$34,163	\$44,607	\$111,518	\$190,288
		\$332,649	\$434,343	\$1,085,858	\$1,852,850
	Funding Sources		* 1 * 0 • 6 0		
	ODOT	\$144,915	\$120,690	\$301,725	\$567,330
Public Outreach	RVMPO	\$40,230	\$120,690	\$301,725	\$462,645
564 (2138-009) 77-019(2010) 77-019(2010) 77-019(2010)	Local	\$21,191	\$27,627	\$69,068	\$117,885
		\$206.226	\$260.007	\$670 518	¢1 147 960
	Funding Counses	\$200,550	\$209,007	\$072,310	\$1,147,000
	Tunung Sources	\$39 104	\$32 568	\$81.420	\$153.092
Employer Outreach	RVMPO	\$10,856	\$32,568	\$81,420	\$124 844
Employer Suddach	Local	\$5,718	\$7,455	\$18,638	\$31,811
		\$55,678	\$72,591	\$181,478	\$309,747
	Funding Sources				
	ODOT	\$25,308	\$21,078	\$52,695	\$99,081
Government Outreach	RVMPO	\$7,026	\$21,078	\$52,695	\$80,799
	Local	\$3,701	\$4,825	\$12,062	\$20,588
		\$36,035	\$46,981	\$117,452	\$200,468
	Funding Sources				
51 (1997) 1 (1	ODOT	\$64,137	\$53,418	\$133,545	\$251,100
Rideshare	RVMPO	\$17,805	\$53,418	\$133,545	\$204,768
	Local	\$9,379	\$12,228	\$30,570	\$52,176
		\$91,321	\$119,064	\$297,660	\$508,044
	Funding Sources				
	ODOT	\$32,878	\$27,384	\$68,460	\$128,722
Administration	RVMPO	\$9,127	\$27,384	\$68,460	\$104,971
	Local	\$4,808	\$6,268	\$15,671	\$26,747
		\$46,813	\$61,036	\$152,591	\$260,440

TDM Funding

Each region of ODOT determines funding levels for TDM programs within the region. The process varies but typically involves a funding request by the responsible entity for inclusion in the State Transportation Improvement Program (STIP). The Transportation Options programs are federally funded.

ODOT Region 3 provides a \$130,109 annual grant to RVTD to implement the TDM program. State funding in 2012 and 2013 is scheduled to decrease to \$75,000 (per year), but will be restored to current levels (\$130,109) beginning in 2014. In October 2009, the MPO Policy Committee approved a total \$150,000 in MPO Surface Transportation Program (STP) funding for 2012 and 2013 (\$75,000 per year) to support RVTD's TDM program.

	Project	Federal	Federal Funding		
MPO	Description	Fiscal Year	Source*	Amount	
		2010	STP	\$130,109	
	RVTD TDM	2011	STP	\$130,109	
	Program	2012	STP	\$150,000	
		2013	STP	\$ 150,000	
Bend	Vanpool Program Support	2010	STP	\$116,000	
		2010	STP	\$43,000	
Convollio	City of Corvallis	2011	STP	\$43,000	
Corvailis	TDM Program	2012	STP	\$43,000	
		2013	STP	\$43,000	
		2011	STP	\$55,633	
		2011	STP-U	\$138,000	
	Regional Rideshare	2012	STP	\$55,417	
			STP-U	\$145,000	
		2103	STP	\$55,417	
SKATS		2100	STP-U	\$152,000	
ORATO		2011	STP	\$45,762	
		2011	STP-U	\$16,000	
	Regional TDM	2012	STP	\$51,146	
	Program	2012	STP-U	\$16,000	
		2103	STP	\$51,146	
		2100	STP-U	\$18,000	
		2010	STP	\$106,779	
Central	TDM Program	2011	STP	\$106,779	
Lane MPO	i Bin i rogiani	2012	STP	\$106,779	
		2013	STP	\$106,779	

Table 13 - Oregon MPO Federal TDM Funding

Oregon MPO TDM Federal Funding

*Source: MPO 2010-13 TIPs

**STP is ODOT discretionary funding allocated per region. STP-U is MPO discretionary funding.

Potential TDM Funding Options (Victoria Transport Policy Institute)

There are many possible funding sources for TDM activities. Some support planning objectives such as traffic and parking congestion reduction, more accessible land use development, pollution reduction, and increased equity. Below are common funding options:

- **Parking Pricing** Public parking revenues dedicated to transportation programs.
- **Special Parking Taxes** Special taxes imposed on commercial parking transactions or on parking facilities.
- **Road Pricing** Road tolls and congestion fees used to fund transportation programs, including roadway facilities, transit improvements and TDM programs.
- **Fuel Tax Increases and Surcharges** A portion of fuel tax revenues dedicated to special transportation programs (such as dedicating 1% of fuel tax revenues to non-motorized facilities), or impose an optional, additional fuel tax for local transportation programs.
- **Carbon Taxes** Special taxes based on fossil fuel carbon content, and therefore a tax on carbon dioxide emissions.
- **Transportation Impact Fees** Fees paid by developers based on the transportation costs imposed by their projects. For example, a developer may be required to pay for roadway improvements, public parking facilities (called *in lieu* fees), funding for a Transportation Management Association, walking and cycling improvements, or other programs that mitigate local traffic impacts.
- **Special Property Taxes** Special property taxes imposed in areas served by transportation programs and services, sometimes called a Local Improvement District.
- Vehicle impact mitigation fees Fees on each vehicle registered in the region to pay for programs and projects that serve motorists and mitigate the negative impacts caused by vehicle traffic.
- **Business or Employee Assessments** Special assessments on businesses in an area, based on floor area, revenues or number of employees, to fund Transportation Management Associations and Commute Trip Reduction programs.

The best funding options reflect these attributes:

- Stable and predictable.
- Considered equitable.
- Support TDM objectives (reduce peak-period vehicle travel, encourage shifts to more efficient modes, support smart growth, etc.).
- Relatively easy to administer.

Fees and taxes support TDM objectives if they are based on the amount of automobile travel that occurs, particularly variable fees that are higher for peak periods and locations, and lower for off-peak. This type of pricing encourages motorists to limit their peak-period driving, reducing traffic and parking congestion problems.

Table 14 below compares the degree to which various transport funding options support TDM objectives. Fees that are higher during urban-peak conditions are best. General taxes and fees are worst.

Rank	General Category	Examples
Best	Time- and location- specific road and parking pricing	Variable road pricing, parking pricing (higher rates for peak periods and locations, lower rates for off- peak)
Second Best	Mileage-pricing	Weight-distance fees, Mileage-based emission fees
Third Best	Fuel charges	Fuel tax increases and surcharges
Fourth Best	Fixed vehicle fees	Motor vehicle fees, vehicle purchase taxes
Worst	Not charged specifically to motorists	General sales taxes, general property taxes, business taxes, employee fees and taxes.

 Table 14 – How Well Different Fees Support TDM Objectives

If there is agreement that some new source of revenue is needed for TDM, it makes sense to structure the funding system to support other strategic planning objectives, such as encouraging more efficient travel patterns and land use development. For example, if property taxes are used to fund transportation services, they can be structured to support smart growth land use planning objectives by having fees that reflect the higher cost of providing public services in dispersed locations, and by providing property tax discounts for households that do not own an automobile.

Congestion Mitigation and Air Quality (CMAQ) funds for TDM

There are several general conditions that must be met for operating assistance to be eligible under the CMAQ program:

- a. Operating assistance is limited to new transit services, intermodal facilities, and travel demand management strategies (including traffic operation centers); and the incremental cost of expanding existing transit services.
- b. In using CMAQ funds for operating assistance, the intent is to help start up viable new transportation services that can demonstrate air quality benefits and eventually cover their costs as much as possible. Other funding sources should supplement and ultimately replace CMAQ funds for operating assistance, as these projects no longer represent additional, net air quality benefits but have become part of the baseline transportation network.
- c. Operating assistance includes all costs of providing new transportation services, including, but not limited to, labor, fuel, administrative costs, and maintenance.
- d. When CMAQ funds are used for operating assistance, non-Federal share requirements still apply.
- e. With the focus on start-up costs only, operating assistance under the CMAQ program is limited to three years. The provisions in 23 U.S.C. §116 place responsibilities for maintenance on states. Since facility maintenance is akin to operations, three years of CMAQ assistance provides adequate incentive and flexibility while not creating a pattern of excessive or even perpetual support. Exceptions are listed below under Travel Demand Management, Public Education, and Carpooling and Vanpooling.

Travel Demand Management

Travel demand management (TDM) encompasses a diverse set of activities that focus on physical assets and services that provide real-time information on network performance and support better decision-making for travelers choosing modes, times, routes, and locations. Such projects can help ease congestion and reduce SOV use, contributing to mobility, while enhancing air quality and saving energy resources. The following activities are eligible for CMAQ funds if they explicitly aim to reduce SOV travel and associated emissions:

- Fringe parking
- Traveler information services
- Shuttle services
- Guaranteed ride home programs
- Market research and planning in support of TDM implementation
- Carpools, vanpools
- Traffic calming measures
- Parking pricing
- Variable road pricing
- Telecommuting
- Employer-based commuter choice programs

CMAQ funds may support capital expenses and up to three years of operating assistance to administer and manage new or expanded TDM programs.

Marketing and outreach efforts to expand use of TDM measures may be funded indefinitely, but only if they are broken out as distinct line items. Eligible telecommuting activities include planning, preparing technical and feasibility studies, and training. Construction of telecommuting centers and computer and office equipment purchases should not be supported with CMAQ funds.

Public Education and Outreach Activities

The goal of CMAQ-funded public education and outreach activities is to educate the public, community leaders, and potential project sponsors about connections among trip-making and transportation mode choices, traffic congestion, and air quality. Public education and outreach can help communities reduce emissions and congestion by inducing drivers to change their transportation choices. More important, an informed public is likely to support additional regional measures necessary to reduce congestion and meet CAA requirements.

A wide range of public education and outreach activities is eligible for CMAQ funding, including activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits, transit "store" operations, and any other activities that help forward less-polluting transportation options.

Using CMAQ funds, communities have disseminated many transportation and air quality public

education messages, including maintain your vehicle; curb SOV travel by trip chaining, telecommuting and using alternate modes; fuel properly; observe speed limits; don't idle your vehicle for long durations; eliminate "jack-rabbit" starts and stops, and others.

The *It All Adds Up to Cleaner Air* public education messages and materials (regarding vehicle maintenance, proper fueling, trip chaining, and alternate modes) have been successful in raising awareness, garnering funds and in-kind support, and building coalitions of diverse groups across the country. These commercial-quality materials, which were developed in response to requests by state and local transportation and air agencies, are free and communities are encouraged to use and build on them. More information is available at http://www.italladdsup.gov/.

Long-term public education and outreach can be effective in raising awareness that can lead to changes in travel behavior and ongoing emissions reductions; therefore, these activities may be funded indefinitely.

Transportation Management Associations

Transportation Management Associations (TMAs) are groups of citizens, firms, or employers that organize to address the transportation issues in their immediate locale by promoting rideshare programs, transit, shuttles, or other measures. TMAs can play a useful role in brokering transportation services to private employers.

CMAQ funds may be used to establish TMAs provided that they reduce emissions. Eligible expenses include TMA start-up costs and up to three years of operating assistance. Eligibility of specific TMA activities is addressed throughout this guidance.

Carpooling and Vanpooling

Eligible activities can be divided into two types of costs: *marketing* (which applies to both carpools and vanpools) and *vehicle* (which applies to vanpools only).

- a. Carpool/vanpool marketing covers existing, expanded, and new activities designed to increase the use of carpools and vanpools, and includes purchase and use of computerized matching software and outreach to employers. Guaranteed ride home programs are also considered marketing tools. Marketing costs may be funded indefinitely.
- b. Vanpool vehicle capital costs include purchasing or leasing vans for use in vanpools. Eligible operating costs, limited to three years, include empty-seat subsidies, maintenance, insurance, administration, and other related expenses.

CMAQ funds should not be used to buy or lease vans that would directly compete with or impede private sector initiatives. States and MPOs should consult with the private sector prior to using CMAQ funds to purchase vans, and if private firms have definite plans to provide adequate vanpool service, CMAQ funds should not be used to supplant that service.

Carpooling and vanpooling activities may be funded with up to 100% federal funding, with certain limitations.

Best Practices in TDM Program Funding (*Metropolitan Council TDM Evaluation & Implementation Study, August 2010*)

National research has shown that while TDM program funding is still heavily reliant upon CMAQ, a variety of other funding sources are slowly being developed at the state, regional, and local level. Research conducted by the Center for Transportation and the Environment² of nine regional programs found nearly 60 percent of all funding stems from the CMAQ program. Other federal funding accounted for 7 percent, state funding was 16 percent, and local funding 18 percent. The regions studied included Atlanta, Massachusetts (statewide *MassRIDES* program), Chicago, Houston-Galveston area, Miami-Dade, Phoenix, Riverside, CA, the San Francisco Bay Area, and the Washington DC metropolitan region.

Figure 1 below displays the results of this research.



Figure 1

² Center for Transportation and Environment. 2006. "TDM Program Comparison Study: Program comparison research for nine regions across the nation." Atlanta, GA: Georgia Department of Transportation.

TDM program annual budgets of five of the regions studied are detailed in Table 16 below.

TDM Program	Funding Sources			Annual Budgets (2008)			
1DM 1Togram	CMAQ	Local	Other	CMAQ	Local	Other	Total
Valley Metro (Phoenix)	48% distributed through State and Maricopa County Trip Reduction Program	49% Proposition 400: 1/2 cent sales tax	3% Small grants and resources for marketing, office space, etc provided in-kind.	\$3,049,090	\$3,112,613(local proposition 400)	\$190,568 Bike Education (Safe Routes to School)	\$6,352,272
MWCOG (Washington, DC)	50% through State and local DOT's	49% State	Special projects (between 1 to 2%)	\$2,600,083	2,548,081	\$52,000	\$5,200,166
Clean Air Campaign (Atlanta)	80% through CMAQ	20% total local match. Composed of state (11%) and private corporations/ fundraising	TMAs in Atlanta also receive funding from Community Improvement District (CID)or Business Investment District (BID)	\$3,200,000	\$800,000 (corporations, fundraising, and improvement district contributions)	None	\$4,000,000
South Florida Commuter Services (Miami/Ft. Lauderdale)	No CMAQ funding	40% through regional agency 50% State Funds	10% Federal Funds for Urban Partnership Agreement (I-95 Express Lanes)	\$0	\$2,182,500	\$242,500	\$2,425,000
511 Rideshare (San Francisco Bay Area)	75% through Congestion Management Agency (MTC)	25% from the Bay Area Air Quality Management District	None	\$2,122,500	\$707,500	None	\$2,830,000

Recommendations :

One of the most effective ways to implement Transportation Demand Management is for jurisdictions to include TDM measures in their transportation plans and land development codes. While not all of the following will be appropriate for every community, examples of potential TDM strategies include:

- Identifying, encouraging and assisting role models who use alternative transportation. This can be done through awards, incentives and events.
- Encouraging developers to build high-density, multi-use buildings by establishing minimum density standards in zones that permit multi-family uses.
- Adopting maximum parking space requirements and an option to decrease parking further with the use of TDM measures such as providing attractive bicycle and pedestrian facilities, and carpool spaces within ¹/₄ mile of transit service.
- Partnering with city government to encourage employers with more than 50 employees to adopt TDM strategies.
- Supporting the use of transit among major employers by encouraging the purchase of individual or subsidized group transit passes, having a bus shelter added nearby or other actions to reduce commuting trips.
- Prioritizing all city and county TSP bicycle and pedestrian construction projects to be complete in the earlier phases of this Plan.
- Encouraging developments with a large footprint to have a bicycle and pedestrian circulation plan.
- Adopting traffic-calming street design standards
- Securing funding for street aesthetics such as street furniture, landscaping, lighting, and creating dispersed tiny public places.
- Encouraging development of discount transit fare programs and shuttle services by event sponsors.
- Engaging in public, government and employer outreach to raise awareness about the use of TDM strategies, including actively marketing to groups that have the greatest potential for reducing SOV trips.
- Modifying land use codes to require creation of non-motorized infrastructure on public roadways, and/or the concentration of mixed land uses (residential, office, and commercial) into smaller areas.
- Modifying parking standards to require fewer spaces or set a maximum number of spaces to reduce the amount of land consumed by parking and, and to some extent, the convenience of parking.
- Providing for park-and-ride lots.
- Adopting Trip Reduction Ordinances.
- Including TOD overlays or districts
- Modifying street and parking lot standards to enforce connectivity.

Appendices

Appendix B – RVMPO Alternative Measures

The table below summarizes the seven alternative measures along with 5-year benchmarks and 20-year targets.

RVMPO Alternative Measures for TPR Compliance

Measure	How Measured	Current 2000	Benchmark 2005	Benchmark 2010	Benchmark 2015	t Target 2020
<i>Measure 1:</i> Transit and bicycle/pedestrian mode share	The percent of total daily trips taken by transit and the combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data)	% daily trips transit: 1.0 bike/ped: 8.2	% <i>daily trips</i> transit: 1.2 bike/ped: 8.4	% daily trips transit: 1.6	% daily trips transit: 2.2 bike/ped: 9.8	% daily trips transit: 3.0 bike/ped: 11
Measure 2: % Dwelling Units (DU's) w/in ¼ mile walk to 30-min. transit service	Determined through GIS mapping. Current estimates are that 12% of DU's are within ¼ mile walking distance of RVTD transit routes.	12%	20%	30%	40%	50%
<i>Measure 3</i> : % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping. Current estimates are that 21% of collectors and arterials in the MPO have provisions for bicyclists.	21%	28%	37%	48%	60%
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping. Current estimates are that 46% of collectors and arterials in TOD areas have sidewalks.	47%	50%	56%	64%	75%
<i>Measure 5</i> : % Mixed-use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	26%	41%	49%
<i>Measure 6</i> : % Mixed-use employment in new development	Estimated from annual employment files from State - represents the ratio of new employment in TODs over total regional employment.	0%	9%	23%	36%	44%
<i>Measure 7</i> : Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP).	N/A	\$950,000	\$2.5 Million	\$4.3 Million	\$6.4 Million