

Chapter 10 Transportation Demand Management



INTRODUCTION

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. The Transportation Planning Rule outlines a goal of reducing vehicle miles traveled (VMT) per capita.¹ TDM measures applied on a regional basis can be an effective tool in reducing vehicle miles traveled. Samples include:

- Employers installing bicycle racks
- Work with property owners to place parking stalls for carpoolers near building entrances
- Provide information regarding commute options to larger employers
- Encourage linkage of housing, retail and employment centers
- Encourage flexible working hours
- Encourage telecommuting
- Provide incentives to take transit and use other modes (i.e. free transit pass)
- Schedule deliveries outside of peak hours

The strategies for transportation demand management were identified in working with the City's TSP Task Force which included the City Planning Commission. These committees provided input regarding the transportation system in Tigard, specifically exploring TDM needs.

BACKGROUND

In 1993, the Oregon Legislature passed a law to help protect the health of Portland area residents from air pollution and to ensure that the area complies with the federal Clean Air Act. The Employee Commute Options (ECO) rules are provisions of the law.² The ECO program requires larger employers to provide commute options to encourage employees to reduce auto trips to the work site. It is one of several strategies included in the Ozone Maintenance Plan for the Portland Air Quality Maintenance Area (AQMA) which will be in place until the year 2006. Employers in the Portland AQMA with more than 50 employees at a work site must provide commute options that have the potential to reduce employee commute auto trips by 10 percent within three years, and maintain the trip reductions through the life of the plan.

TDM can include a wide variety of actions tailored to the individual needs of employers to achieve trip reduction. Table 10-1 provides a list of several strategies identified in the ECO program. Research

¹ By 10 percent over 20 years

² Oregon Administrative Rules Chapter 340, Division 30.

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**Table 10-1
Transportation Demand Management Strategies**

Strategy	Description	Potential Trip Reduction
Telecommuting	Employees perform regular work duties at home or at a work center closer to home, rather than commuting from home to work. This can be full time or on selected work days. This can require computer equipment to be most effective.	82-91% (Full Time) 14-36% (1-2 day/wk)
Compressed Work Week	Schedule where employees work their regular scheduled number of hours in fewer days per week (for example, a 40 hour week in 4 days or 36 hours in 3 days)	7-9% (9 day/80 hr) 16-18% (4/40) 32-36% (3/36)
Transit Pass Subsidy	For employees who take transit to work on a regular basis, the employer pays for all or part of the cost of a monthly transit pass.	19-32% (full subsidy, high transit service) 2-3% (half subsidy, medium transit service)
Cash Out Employee Parking	An employer that has been subsidizing parking (free parking) discontinues the subsidy and charges all employees for parking. An amount equivalent to the previous subsidy is then provided to each employee, who then can decide which mode of travel to use (with subsidy above the cost of a monthly transit pass, those employees would realize monetary gain for using transit).	8-20 % (high transit service available) 5-9 % (medium transit services available) 2-4% (low transit services available)
Reduced Parking Cost for HOVs	Parking costs charged to employees are reduced for high occupancy vehicles (HOV) such as carpools and vanpools.	1-3 %
Alternative Mode Subsidy	For employees that commute to work by modes other than driving alone, the employer provides a monetary bonus to the employee. Most often, the bonus is provided monthly in the employee's paycheck.	21-34% (full subsidy of cost, high alt.modes) 2-4% (half subsidy of cost, medium alt.modes)
On-Site Services	Provide services at the worksite that are frequently used by the employees of that worksite. Examples include cafes, restaurants, dry cleaners, day care and bank machines.	1-2 %
Bicycle Program	Provides support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities and subsidy of commute bicycle purchase.	0-10 %
On-site Rideshare Matching for HOVs	Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator regarding their work hours, availability of a vehicle and place of residence. The coordinator then matches employees who can reasonably rideshare together.	1-2 %
Provide Vanpools	Employees that live near each other are organized into a vanpool for their trip to work. The employer may subsidize the cost of operation and maintaining the van.	15-25% (company provided van with fee) 30-40% (company subsidized van)
Gift/Awards for Alternative Mode Use	Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone.	0-3 %
Provide Buspools	Employees that live near each other or along a specified route are organized into a buspool for their trip to work	3-11 %
Walking Program	Provide support services for those who walk to work. This could	0-3 %

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Strategy	Description	Potential Trip Reduction
	include buying walking shoes or providing showers.	
Company Cars for Business Travel	Employees are allowed to use company cars for business-related travel during the day.	0-1 %
Guaranteed Ride Home Program	A company owned or leased vehicle or taxi fare is provided in the case of an emergency for employees that use alternative modes.	1-3 %
Time off with Pay for Alternative Mode Use	Employees are offered time off with pay as an incentive to use alternative modes (rather than monetary, bonus, gift or awards)	1-2 %

SOURCE: *Guidance for Estimating Trip Reductions From Commute Options*, Oregon Department of Environmental Quality, August 1996.

has indicated that a comprehensive set of complementary policies implemented over a large geographic area can have an effect on vehicle miles traveled³. However, the emphasis of much of the research indicates that these policies must go well beyond the low-cost, uncontroversial measures commonly attributed to TDM (such as carpooling, transportation coordinators/associations, priority parking spaces) to be effective. Elements including parking and congestion pricing, improved services for alternative modes and other market-based measures are needed for TDM to have significant impact on reducing overall vehicle miles traveled.

At the same time, the same research indicates that employee trip reduction programs can be an effective instrument of localized congestion relief⁴. For example, employers can substantially reduce peak hour trips by shifting work schedules, which may not reduce VMT but can effectively manage congestion. In Wilsonville, a Nike warehouse/distribution site generates 80% less vehicle trips than standard similar uses in the evening peak hour by using employee shifts that are outside the peak period (4 - 6 PM)⁵. This type of congestion management technique can extend the capacity of transportation facilities.

CRITERIA

Tigard TSP Task Force created/refined a set of goals and policies to guide transportation system development in Tigard (see Chapter 2). Goal 2 directly addresses reduction in travel, forming the basis for TDM.

Goal 2 Policy 7

*Tigard will participate in vehicle trip reduction strategies developed regionally
DEQ and Metro have developed regional policies regarding trip reduction.
Some of these policies are aimed at provision of parking and others are aimed at ridesharing (Employee Commute Options—ECO rules).*

³*The Potential for Land Use Demand Management Policies to Reduce Automobile Trips*, ODOT, by ECO Northwest, June 1992.

⁴*Evaluation of Employee Trip Reduction Programs Based upon California's Experience with Regulation XV*, Institute of Transportation Engineers, Technical Council Committee 6Y-51, January 1994.

⁵*Nike Parking Lot Expansion Trip Generation Study*, City of Wilsonville, by DKS Associates, May 1997.

STRATEGIES

Several strategies were evaluated by the TSP Task Force for transportation demand management in Tigard. These strategies are aimed at providing the City with priorities toward implementing transportation demand management projects that meet the goals and policies of the City. The ranking of the strategies follows from most important to least important:

- Focus programs on high demand districts (ie. Downtown Tigard, Tigard Triangle and Washington Square)
- Telecommuting/Fiber Optic to all residents and businesses
- Require larger employers to meet DEQ's ECO rules
- Encourage linkage of housing with retail and employment centers
- Mandate TDM through development review (would reinforce regional DEQ requirements)
- Limiting Parking (establish maximum parking ratios)
- City funded program to provide information regarding commute options to larger employers (possibly via web page and email)
- Support regional pricing policies/strategies
- Do nothing related to TDM
- Provide business association support for TDM coordination

RECOMMENDED PLAN

State, regional and county policy⁶ all call for encouraging and promoting transportation demand management. The proposed policy of this plan calls for the city to support TDM. Collectively, the implementation of the modal plans in this TSP, along with the TDM plan, will contribute to the regional VMT reduction goal. Unlike bicycles, pedestrians and motor vehicles, implementation of this policy does not necessarily require capital infrastructure. In fact, much more of TDM is policy and management rather than concrete and asphalt. Because of this, the recommended TDM plan for Tigard consists of the following:

- Support continued efforts by Washington County, Metro, ODOT, DEQ, Tri-Met and the Westside Transportation Alliance to develop productive TDM measures that reduce VMT and peak hour trips. Focus attention in Washington Square, downtown Tigard and Tigard Triangle.
- Encourage the development of high speed communication in all parts of the city (fiber optic, digital cable, DSL,...). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage development that effectively mix land uses to reduce vehicle trip generation. These plans may include development of linkages (particularly non-auto) that support greater use of alternative modes. Land use density should be higher at commuter rail transit stations (half mile radius) than elsewhere in the community (Tigard Transit Center and Washington Square Station areas).
- Mixed land use projects have demonstrated the ability to reduce vehicle trips by capturing internal

⁶ Transportation Planning Rule, Section 660-12-035; Regional Transportation Policy, Metro, July 1996, page 1-39; and Washington County Transportation Plan, October 1988, page 30.

trips between land use types, encouraging walk/bike trips and producing shorter vehicle trips⁷.

- As vehicle traffic levels increase with the build out of land uses within Tigard, it may become necessary to go beyond the coordination with the regional Employee Commute Options program developed by DEQ. This may include developing localized TDM programs for the city or subareas of the city to address vehicle trip reduction. For example, measures which are appropriate for site planning such as close-in parking for carpools, bicycle parking and convenient transit stops are already part of the Community Development Code (Section 18.765.030(F) calls for close in carpool parking for lots with 20 or more long term spaces and Section 18.360.090 requires pedestrian access to transit).
- As a capital oriented element, coordinate with ODOT and Tri-Met on the development of park-and-ride transit station or freeway interchange locations in Tigard (these are locations proven to be successful in attracting carpool/transit use). Figure 7-2 shows the current park and ride locations. Expansion of these sites should focus on transit station or freeway interchange locations. Interchange reconstruction projects should be required to identify potential sites for park-and-ride (even small sites of 50 spaces). Over the next 20 years, a reasonable budget for park-and-ride expansion might be about \$100,000 per year (about 50 spaces a year, assuming pre-existing ROW).

⁷ *Trip Generation, 5th edition*, Institute of Transportation Engineers, 1991, Chapter VII, indicates potential for PM peak hour capture of between 27% and 66%.