

April 4, 2003

To: Metropolitan Policy Committee
From: Tom Schwetz
Subject: Item 4e: Overview of TGM Project for Refinement of TransPlan TDM Element

Background

In Metropolitan Planning Organization areas using alternative performance measures to meet Transportation Planning Rule (TPR) requirements (all four existing MPOs), the TPR requires development of an Integrated Land Use Transportation Plan including:

A transportation demand management plan that includes significant new transportation demand management measures.

In addition, Transportation Demand Management (TDM) is an essential complimentary element to successful implementation of TransPlan's core strategies of Nodal Development and Bus Rapid Transit (BRT).

Through use of a TGM grant, LCOG is currently engaged in the development of a preliminary TDM Refinement Plan; both to lay the groundwork for a response to the TPR requirement and to better integrate TDM activities in the region with the implementation of Nodal Development and BRT.

The original intent of the grant (in 2001) was to provide funding for a refinement of the TDM element in TransPlan as part of the three-year MPO update of the plan. Because of delays in beginning the three-year update, coordination of the update and the TGM grant hasn't been able to take place. With that context, the intent has been to use the grant resource to develop the background research and analysis of individual TDM strategies and alternative packages of strategies to produce a framework that can be taken into the three-year update when it begins in July.

The scope of the project entails 3 broad tasks:

1. Identify specific TDM actions to compliment the implementation of Nodal Development and the BRT
2. Extend TDM project list to the planning horizon of the three-year update (2030)
3. Prepare a draft TDM Refinement Plan

At the MPC meeting in May, staff will present the results of the project in the form of a preliminary draft of the TDM refinement plan. This draft will serve as a beginning point for the development of the TDM element of the three-year update. It should be noted that, as part of the

update process, the draft presented in May could undergo significant change depending on other elements of the update, public input, and policy direction from MPC.

This memo provides a summary of the work effort conducted to develop the framework for the integration of TDM refinement plan into TransPlan as determined by the TPC. It describes the integration framework, specific TDM strategies supportive of the implementation of Nodal development and BRT, and a ranking of individual TDM strategies. It also outlines the alternative TDM scenarios developed as part of the project.

Integration Framework

TDM consists of a broad set of actions oriented toward encouraging the use of modes other than the single-occupant vehicle to reduce VMT and reliance on the auto. The Vancouver Transport Policy Institute's *TDM Encyclopedia* provides a useful categorization of these actions. TDM strategies can be assigned to one or more of these categories:

1. *Improved Transportation Choice*. These strategies improve the range and quality of transportation services available to target populations.
2. *Incentives To Use Alternative Modes and Reduce Driving*. These strategies include various incentives that encourage people to shift to more efficient transportation options.
3. *Parking Management*. These strategies focus on increasing the efficiency of auto parking and also include the provision of bicycle parking.
4. *Policy And Institutional Reforms*. These are organizational changes that overcome barriers and provide support for TDM implementation.
5. *Land Use Management*. These strategies result in more accessible land use patterns that reduce the need for travel and make alternative modes more convenient.
6. *TDM Programs and Program Support*. A program implements a suitable combination of complementary TDM strategies. Programs have specific goals and objectives, responsibilities and activities, staff and budgets.

Table 1 provides a listing of the specific strategies in the TDM Encyclopedia, organized by category. An analysis has been conducted to compare this listing of strategies with the actions identified as part of the TransPlan Update process. The analysis indicates that the listing in Table 1 is inclusive of the set of strategies identified during the TransPlan Update. Given that result, the listing of 62 strategies in Table 1 constitutes the universe of potential strategies to be used in the development of the preliminary TDM Refinement Plan.¹

Project staff met with land use planning staff from Eugene and Springfield to identify TDM strategies that might support the implementation of nodal development. Staff also met separately with BRT planners to discuss those TDM activities that might best support implementation of BRT. The results of these meetings provided a focus to the development of a list of TDM projects that would best integrate with the rest of TransPlan. A brief summary of those meetings is provided below.

¹ It should be noted that there may be several different ways that a particular strategy can be implemented. For example, Parking Management can include several specific actions (allowing parking minimums, shared parking, parking pricing, etc.).

TDM Strategies Supporting the Implementation of Nodal Development

TDM measures that are expected to be most effective in supporting the implementation of nodal development were identified in a meeting with land use planners involved with the Eugene and Springfield's efforts to implement nodal development. These measures were categorized into 4 areas – capital improvements, parking management, education, and incentives as follows:

Capital Improvements

- Off-street bike paths
- Ped/bike bridges

Parking Management

- Long-term vehicle storage
- Reduced onsite parking requirements
- Reduced or eliminated parking minimums

Education/Coordination

- Possible brochure on “How To Benefit From Living In A Node”
- TMAs formed in nodal development areas
- Car Sharing
- ITS – bus information tailored to specific nodal developments (schedule and real time availability)

Incentives

- Location Efficient Mortgages
- Bus passes to nodal residents

TDM Strategies Supporting the Implementation of BRT

A similar meeting was held with BRT planners to identify TDM strategies that can be expected to complement the implementation and operation of BRT. Based on discussion with BRT planners, the most effective TDM strategies are those that:

- address security concerns,
- improve connectivity to BRT (bike paths, park and rides, parking adjacent to BRT stations)
- manage land use to facilitate concentration of activities (nodal development)
- provide information and education on the BRT service
- provide incentives for transit use (bus passes)

In addition to discussing some of the key TDM strategies that are likely to complement BRT operations, the interaction between the BRT development process and TDM was discussed. An important outcome was the recognition that TDM could play a role as well as benefit from early involvement in the BRT development process.

TPC Ranking of TDM Measures

Technical Ranking Method And Relationship To Project Objectives

Having identified a broad list of potential TDM strategies, it was important to conduct a ranking process to identify which strategies would best be suited to supporting the implementation of

Nodal Development and BRT. A ranking process was developed incorporating criteria developed by the TDM Advisory Committee. To get a broad range of expertise involved in the evaluation process, the staff involved in the implementation of nodal development and BRT as well as TPC staff were recruited for the evaluation exercise. The exercise was conducted on October 9th, 2003. The results of that exercise are presented below.

Development of Criteria and Short List of Strategies

The TDM Advisory Committee developed the following set of criteria to be used in evaluating TDM strategies. The objective was to identify criteria that were consistent with the factors identified by implementing planners as important to the success of both nodal development and BRT. The criteria developed are listed below:

Increases Commuter Use of Alt Modes	Can be focused on areas of high congestion
Improves System Connectivity	Increases the Security of alt mode use
Manages Land Use & concentration of activity	Increases intermodal connectivity
increases reliability of alt modes	Improves the level of awareness of alt modes
Manages Parking Supply (level, type, location)	Increases effectiveness and speed of transit
Increases frequency of service	Politically Feasibility

Because of the complexity of the evaluation process, project staff determined that it would be important to have the technical evaluation focus on the most important TDM strategies. To reduce the number of strategies to a manageable number, project staff conducted a preliminary screening of the strategies. This screening considered the feasibility of the strategies and the overlaps among strategies.

Participants in the evaluation were given scoring sheets comprised of the TDM strategies and the criteria. The participants were instructed to evaluate the entire set of strategies considering one criterion at a time. For example, all strategies were evaluated as to their ability to increase commuter use of alternative modes before moving to the next criteria. In addition, participants were asked to evaluate each TDM strategy for nodal development and BRT separately.

Results of the technical evaluation are provided in Table 2. It should be noted that these results are not meant to preclude the use of any of the TDM options. Rather, they attempt to provide some sense of which strategies might be best suited to supporting the implementation of nodal development and BRT.

Development of Alternative TDM Scenarios

The underlying intent of the tDM RTefinement Plan is to provide more specific TDM activities in the framework of the overall regional transportation plan. For purposes of analyzing the effectiveness of alternative packages of TDM strategies, staff developed six alternative TDM scenarios consisting of three budget scenarios in both a voluntary and regulatory environment. These alternatives have been numbered as follows:

Numbering for Alternative TDM Scenarios			
	1/2 Current Budget	Current Budget	3x Current Budget
Voluntary	1	2	3
Regulatory	4	5	6

The three budget scenarios include:

1. 50 percent of current funding:
The FY2002-2005 Statewide Transportation Improvement Plan provides for \$111,000 annually from ODOT which is equivalent to 50 percent of current funding.
2. Current funding level:
Existing funding level.
3. Three times existing budget
This budget scenario is meant to provide insight to what an additional investment in TDM might yield.

Table 3 describes the six scenarios of TDM alternative strategies. Under each scenario, packages of strategies are grouped according to Commuter Solutions program components.

TDM strategies can be implemented along a spectrum ranging from voluntary to regulatory. The TDM policies included in TransPlan call for an expansion of current activities within the voluntary part of the spectrum. Policy #1 also includes language calling for the establishment of TDM benchmarks. Policy #1 goes on to say that “mandatory programs may be established,” should those benchmarks not be met. However, mandatory, or regulatory TDM strategies can range in regulatory intensity from the Employee Commute Option (ECO) strategy currently in place in Portland to no-drive days, bridge tolls, and congestion pricing.

Staff discussed the factors which might prompt the region or individual jurisdictions within the region to move to a more regulatory environment. The primary factor staff considered was whether or not the region could achieve the TransPlan goals and associated local goals, or state and federal requirements. For example, the ECO strategy is in place in Portland in order for that region to come in to compliance with federal air quality standards. More regulatory strategies might be implemented to address state requirements related to mobility. Finally, regulatory TDM measures might be used by an individual jurisdiction to achieve specific local goals. For purposes of this study, it is assumed that, in the regulatory scenarios, the focus of regulation is on the more moderate regulatory strategies associated with ECO strategies.

Evaluation of Scenarios and Development of Preliminary Draft

The alternative TDM scenarios are currently being evaluated. The preliminary draft TDM Refinement Plan presented in May will be based on the results of this technical evaluation. Again, the intent of this work is to serve as a beginning point for the development of the TDM element of the three-year update. The Preliminary Draft will include a proposed program of TDM actions including costs and timing intended to match the planning horizon of the 3-year update of the regional transportation plan (2030). MPC will be asked to provide initial comments on the Preliminary Draft. Those comments will be incorporated into the document

which will be used to guide the development of the TDM Element of the three-year update. As part of the update process, the draft presented in May could undergo significant change depending on other elements of the update, public input, and further policy direction from MPC.

Action Requested: Information and Discussion only.

Table 1
VTPI TDM Encyclopedia Strategies by Category ¹

Strategy	Strategy Description
Improved Transport Options	
1. Address Security Concerns	Improving personal safety for walking, cycling, transit and urban infill.
2. Alternative Work Schedules	Flextime, Compressed Work Week (CWW), and staggered shifts used to reduce peak-period vehicle traffic.
3. Bicycle Improvements	Ways to improve bicycle transport.
4. Bike/Transit Integration	Ways to integrate bicycle and public transit to improve mobility.
5. Carsharing	Vehicle rental services intended to substitute for private vehicle ownership.
6. Flextime	Allowing employees flexibility in their daily work schedules to avoid peak-period traffic.
7. Guaranteed Ride Home	Programs that provide an occasional subsidized ride home to commuters who use alternative modes.
8. Individual Actions for Efficient Transport	Actions that individuals can take to travel more efficiently and support TDM in their community.
9. Nonmotorized Planning	Planning for walking, cycling, and small-wheeled transport.
10. Nonmotorized Facility Management	Managing and maintaining nonmotorized facilities such as walkways, sidewalks and paths.
11. Park & Ride	Programs to provide convenient parking at transit and rideshare stations.
12. Pedestrian Improvements	Ways to improve walking conditions.
13. Ridesharing	Ways to support and encourage carpooling and vanpooling.
14. Shuttle Services	Shuttle buses, jitneys and free transit zones.
15. Small Wheeled Transport	Accommodating roller skates, push scooters, handcarts and utility wagons for transportation.
16. Taxi Service Improvements	Ways to improve taxi services.
17. Telework (Telecommuting, Distance Learning, Tele-shopping, etc.)	Ways to encourage use of telecommunications as a substitute for physical travel.
18. Traffic Calming	Roadway design features that reduce vehicle traffic speeds and volumes.
19. Transit Improvements	Ways to improve and promote public transit.
20. Universal Design (Barrier Free Transport Planning)	Designing transportation systems to accommodate people with disabilities and other special needs.
Incentives To Use Alternative Modes and Reduce Driving	
21. Walking And Cycling Encouragement	Programs and activities that encourage nonmotorized transportation.
22. Commuter Financial Incentives	Parking cash out, travel allowance, transit and rideshare benefits.
23. Congestion Pricing	Road pricing used to reduce peak-period vehicle trips.
24. Distance-Based Pricing	Charging insurance, road use fees, emission charges and taxes based on a vehicle's mileage.
25. Fuel Taxes	Increasing fuel taxes to fund roads, encourage energy conservation, and reduce travel demand.
26. HOV (High Occupant Vehicle) Priority	Strategies that give transit and rideshare vehicles priority over other traffic.
27. Parking Pricing	Charging motorists directly for parking.
28. Pay-As-You-Drive Vehicle Insurance	Converting vehicle insurance premiums into distance-based charges.
29. Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes
30. Speed Reductions	Strategies to reduce traffic speeds.
31. Street Reclaiming	Encouraging community interaction on neighborhood streets.
32. Vehicle Use Restrictions	Regulatory strategies to limit automobile travel at a particular time and place.

Parking Management	
33. Bicycle Parking	Selection and location of bicycle racks, bicycle lockers and changing facilities.
34. Car-Free Districts and Pedestrianized Streets	Designing special areas and times for minimal automobile use.
35. Parking Management	Strategies for more efficient use of parking.
36. Parking Solutions	A comprehensive menu of solutions to parking problems.
37. Shared Parking	Sharing parking facilities among multiple users.
Policy And Institutional Reforms	
38. Car-Free Planning	Reduced driving at particular times and places.
39. Comprehensive Market Reforms	Policy changes that result in more efficient and fair transportation pricing.
40. Context Sensitive Design	Flexible design requirements to reflect community values and balance objectives.
41. Institutional Reforms	Creating organizations that support efficient transport.
42. Least Cost Planning	Creating an unbiased framework for transport planning.
43. Regulatory Reform	Policy changes to encourage competition, innovation, diversity and efficiency in transport services.
Land Use Management	
44. Clustered Land Use	Land use practices to create more resource efficient and livable communities
45. Location Efficient Development	Planning, regulatory and fiscal reforms that encourage Smart Growth.
46. New Urbanism	Multi-modal and livable communities based around transit stations.
47. Smart Growth	Locating common destinations close together.
48. Smart Growth Planning and Policy Reforms	Development that maximizes multi-modal accessibility.
49. Transit Oriented Development	Accessible, livable community design.
TDM Programs and Program Support	
50. Access Management	Coordination between roadway design and land use.
51. Aviation Transport Management	Applying TDM to air transport.
52. Campus Transport Management	Transportation management at colleges, universities and other large facilities.
53. Data Collection and Surveys	Collecting data and perform surveys for TDM program planning and evaluation.
54. Commute Trip Reduction	Programs that encourage more efficient commuting.
55. Intelligent Transportation Systems	Use of information technologies to improve transportation system performance and efficiency
56. Freight Transport Management	Methods of increasing the efficiency of freight and commercial transport.
57. School Trip Management	Programs that encourage parents, students and staff to use alternative modes for travel to and from schools.
58. Special Event Management	Transportation management for major events, construction projects and emergencies.
59. TDM Marketing	Programs to promote TDM to users.
60. TDM Programs	Developing an institutional framework for implementing TDM.
61. Tourist Transport Management	Transportation management for tourist and leisure travel.
62. Transportation Management Associations (TMA)	Private, non-profit, member-controlled organizations that provide transportation services in a particular area.
Notes:	
1) Source for VTPI Strategies - Vancouver Transport Policy Institute, May 2002	

Table 2

Technical Assessment of TDM Strategies - Level of Importance to BRT and Nodal Development

VTPI TDM Encyclopedia Strategies	Strategy Description	BRT Ranking	Nodal Ranking	Combined Ranking
Transit Improvements	Ways to improve and promote public transit.	31.0	27.1	58.1
Transit Oriented Dev (TOD)	Accessible, livable community design.	27.1	28.4	55.6
Shuttle /Feeder Services	Shuttle/Feeder buses, jitneys and free transit zones.	28.8	26.6	55.3
Park & Ride	Programs to provide convenient parking at transit and rideshare stations.	29.2	23.7	52.9
Bike/Transit Integration	Ways to integrate bicycle and public transit to improve mobility.	26.1	24.3	50.4
Pedestrian Improvements	Ways to improve walking conditions.	24.2	25.2	49.4
Nonmotorized Facility Management	Managing and maintaining nonmotorized facilities (walkways, sidewalks, paths).	23.1	26.0	49.1
Location Efficient Dev	Planning, regulatory and fiscal reforms that encourage Smart Growth.	23.0	25.8	48.8
HOV (High Occupant Vehicle) Priority	Strategies that give transit and rideshare vehicles priority over other traffic.	26.8	20.2	47.0
Bicycle Improvements	Ways to improve bicycle Transportation.	21.3	24.8	46.1
Address Security Concerns	Improving personal safety for walking, cycling, transit and urban infill.	22.3	23.1	45.4
Bicycle Parking	Selection and location of bicycle racks, bicycle lockers and changing facilities.	21.1	23.6	44.7
TDM Programs	Developing an institutional framework for implementing TDM.	22.7	21.6	44.2
Trans Mgmt Assocs (TMA)	Private, non-profit, member-controlled orgs that provide Transport services in particular area.	21.6	21.8	43.3
Access Management	Coordination between roadway design and land use.	21.8	20.4	42.2
Intelligent Trans Systems	Use of information technologies to improve Transport system performance /efficiency	23.2	17.7	40.9
Parking Management	Strategies for more efficient use of parking.	19.8	21.0	40.8
Car-Free Districts/ Ped-oriented Streets	Designing special areas and times for minimal automobile use.	17.3	19.7	37.0
School Trip Management	Programs that encourage parents, students and staff to use alternative modes for travel to and from schools.	17.4	17.8	35.2
Traffic Calming	Roadway design features that reduce vehicle traffic speeds and volumes.	15.7	19.2	34.9
Carsharing	Vehicle rental services intended to substitute for private vehicle ownership.	15.1	17.9	33.0

Table 3 Description of Alternative TDM Scenarios

VOLUNTARY	50 % of current program (1)	Current program (2)	3 X current (3)
Research	Self selected employee transportation surveys Voluntary self reporting survey	Evaluation of region-wide employer-based transit program Coordination of 4J School transportation with local community groups (BTA/CAT) Analysis of travel patterns along congested corridors (e.g. Country Club Rd.) Development of TDM/STF joint projects: Oakridge Service	Thorough evaluation of outreach efforts Expand car/vanpool outreach Targeted nodal analysis of TDM strategies Pilot TravelSmart Program & evaluate
Technical Assistance	Limited planning TDM regional strategies Limited expansion of employer-based transit program No recruitment of new employers Limited support for ETCs Restricted assistance to congested corridors (TMA development) Limited statewide participation in TDM programs Limited outreach to employers on TDM strategies Limited community-wide incentive program Ride share coordination limited to on-line carpool matching services	Rideshare coordination(carpool/vanpool) Expansion of ETC support program Planning of regional TDM strategies Maintenance of community-wide incentive program Support of school transportation partnerships for (BTA/CAT) Assistance to congested corridors (TMA development)	Develop a region-wide TMA assistance program Funding of TMA start up costs Continual updating of Rideshare program to include CarpoolMatchNW Expansion of School transportation options program (including after-school) Expansion of leased park and ride locations Increased program leveraging Expansion of community-wide incentive program
Education and Awareness	Limited outreach to community Limited public education Breath of outreach limited to businesses rather than communities	Support of school based environmental ed. program (Newspapers in Ed). Outreach to region's communities Targeted public education: Tax Benefit Workshop Program marketing to business about TDM services	Development of extensive outreach campaigns Distribution of multi-modal transportation information centers Promotion of telework campaign Development of community workshops on TDM strategies Implementation of TravelSmart program in nodal development
STAFF	Reduction of 1 FTE	2 FTE	Increase of 1.5 FTE

Table 3 Description of Alternative TDM Scenarios

REGULATORY	50 % of current program (4)	Current program (5)	3 X current (6)
Research	Increased monitoring of business TDM of employers' mandated TDM programs Limited self selected employee transportation surveys Limited assistance with voluntary annual self reporting survey	Increased monitoring of employer travel patterns surveys Increased monitoring of businesses' TDM plans and strategies Decreased research to other community segments (schools, neighborhoods, etc.) Increased documentation of TDM measures to region's jurisdictions	Region-wide evaluation of employer - based TDM program Regional monitoring
Technical Assistance	Ride share coordination limited to on-line carpool/vanpool matching services Limited assistance in developing mandatory TDM programs No planning on regional TDM strategies No expansion of employer-based transit program Limited support for ETCs Restricted assistance to congested corridors No statewide participation in TDM programs	Rideshare coordination (carpool / vanpool/ matching services) Maintenance of ETC support program Planning of regional TDM limited to employers Decreased community-wide incentive program No support for school transportation partnerships (BTA/CAT)	Assistance with mandated TMAs in nodal development Develop a region-wide TMA assistance program Funding of TMA start up costs Continual updating of Rideshare program to include CarpoolMatchNW Expansion of School transportation options program (including after-school) Expansion of leased park and ride locations Increased program leveraging Extensive incentive program
Education and Awareness	Provide limited information to employers with new hires No outreach to community No public education Breath of outreach limited to businesses	Educational outreach only to employers on mandatory program Limited outreach to schools on transportation	Educational outreach to region on mandatory program
STAFF	Reduction of 1 FTE	2 FTE	Increase of 1.5 FTE
Notes:	CS would not have adequate budget to monitor mandatory measures	CS would require shifting resources to allow for monitoring/analysis of mandatory TDM measures	If budget is increased, overall scope of CS may stay constant given budget required to monitor and assist mandatory measures.