

**SHORT LIST TECHNICAL RANKINGS
AND
ASSESSMENT OF ADMINSTRATIVE CRITERIA**

**PUBLIC HEARING VERSION
JUNE 28, 1995**

Roadway Preservation

PROJECT: City of Portland: Front Avenue Multi-Use Path
SPONSOR: City of Portland

TECHNICAL RANK: 1st of 3
REQUESTED FUNDS: \$2,368,720

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
'90 Pvm't Cond'n	Poor	8	15	
2015 Pvm't Cond'n	Poor	5	10	
Accident Rating	see comments	20	20	COP list of 240 Hi Accident Locations. 3: Haw. brdg/Front NB; 105: Front/Clay; 138: Front/Market
2040 Support	see comments	25	25	Project serves Central City.
\$/VMT	\$4.17/vmt	15	15	35,550 ADT/cost/20 years.
Multi-Modal	bike/ped/transit factors	12	15	serves bike/ped; pro rate of 2 points for two blocks of transit route.
TOTAL		85	100	

Project Description

Project will reconstruct Front Avenue from NW Everett St. to SW Harrison Street and construct a Multi-Use path directly east of Front Avenue to provide an alternative bicycle access to Waterfront Park and enhance pedestrian amenities along Front Avenue. Project will improve bicycle and pedestrian access in the Central City.

2040 Relationship

Central City

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None

Other Relevant Information

Front is one of few continuous vehicle routes from River District to central downtown and project would integrate with planned redevelopment of the industrial area. VMT data reflects peak hour volumes of 3,550 factored up to estimated ADT of 35,500 and was obtained from the Central City Transportation Management Plan model; Metro EMME/2 model does not handle the Front Ave links and cannot generate VMT data. City of Portland staff indicate that the existing 15' multi-use path experiences extreme congestion during noon hours and most good-weather weekends and is not useable as a regional bicycle facility.

Potential Phases

Phase 1: PE and construct bike lane (\$558,000). Bike lane at \$400,000 ranks approximately 3rd of all current bike projects. However, assumes all future bike trips use new path rather than existing 15' path. No staged street reconstruction phase was offered for analysis although \$558,000 would complete approximately half of the reconstruction project alone.

PROJECT: Hawthorne Bridge Deck Replacement
SPONSOR: Multnomah County

TECHNICAL RANK:
REQUESTED FUNDS:

2nd of 3
\$5,159,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
'90 Pvm't Cond'n	Poor	8	15	
2015 Pvm't Cond'n	Very Poor	10	10	
Accident Rating	see comments	20	20	City of Portland/Metro staff assessment of hazards faced by all modes; substandard AASHTO for bike/ped
2040 Support	see comments	25	25	Project serves Central City.
Cost/Benefit	\$17/VT reduced	0	15	
Multi-Modal	bike/ped/transit factors	15	15	Critical bike/ped/transit link.
TOTAL		78	100	

Project Description

Top ranked preservation project. Very high bicycle, pedestrian, freight (400 vh/day) and transit (800 buses/day) utility. 2040 utility associated with maintenance of both downtown and SE Industrial Sancturary vitality. Multnomah County has hired a consultant to more specifically determine needed structural repairs and potential phasing options including project development and implementation coordination with the currently funded \$16 million bridge painting project and the proposed \$1.5 million Hawthorne Bridge Sidewalk Widening Project.

2040 Relationship

Critical to SE Industrial Sancturary

Adminstrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes (contingent on County obtaining match)
- *Future Projects:* See descritpion, above.

Other Relevant Information

Deterioration of substructure and decking may require weight limitations and closure of outside lanes to transit and truck vehicles. JPACT had requested ranking relative to State's PONTIS System criteria as road facility criteria are poor at reflecting condition of bridge spans. Hawthorne ranks very high statewide against big bridges (but PONTIS does not evaluate electro-mechanical structures).

Potential Phases

Phase 1: \$3.5 million to redeck outer lanes critical to transit operation.

PROJECT: Kruse Way Reconstruction (Boones Ferry Road to Bangy Road)
SPONSOR: Clackamas County

TECHNICAL RANK:
REQUESTED FUNDS:

3rd of 3
\$1,229,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
'90 Pvm't Cond'n	Poor	8	15	
2015 Pvm't Cond'n	Very Poor	10	10	
Accident Rating	see comments	10	20	2.9 accidents/million vehicles miles. Points based on County staff analysis of relative hazards.
2040 Support	see comments	13	25	Project serves 2 town centers; 2040 Corridor
\$/VMT	\$2/vmt	15	15	
Multi-Modal	bike/ped/transit factors	5	15	Sponsor proposes transit amenities/Tri-Met not enthusiastic; bike/ped trail unimproved.
TOTAL		61	100	

Project Description

Deep structural improvements requiring 4 inch grind and replacement with 7 inches of asphalt. Currently served by single peak hour radial bus line (#38); identified as a 2040 Transit Corridor. Bike and pedestrian trail is separated from the roadway facility; technical score multi-modal points reduced as reconstruction would not improve existing multi-modal benefits.

2040 Relationship

Town Centers, Mixed Use Employment, 2040 Corridor

Administrative Criteria

- *Overmatch:* 15%; 4.73% overmatch
- *Multi-jurisdictional financial support:* none
- *Implementable:* yes
- *Future Projects:* I-5/Kruseway/Boones Ferry Rd (Waluga Triangle Study); 3+ projects identified in CIP linked to corridor improvements.

Other Relevant Information

Trans. Mng't Plan mandates employer/developer TDM action plan where LOS C threshold is consistently violated. Premature base failure due to bus and truck traffic increases.

Potential Phases

None identified by sponsor.

ROADWAY EXPANSION

PROJECT: Sunnyside Road (Sunnybrook to 122nd Avenue)
SPONSOR: Clackamas Co.

TECHNICAL RANK: 1st of 17
REQUESTED FUNDS: \$5,000,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.01	15	15	
2015 V/C Ratio	1.76	10	10	
Accident Rating	see comments	20	20	2.9 accidents/million vehicle miles. Points based on County staff analysis of relative hazards.
2040 Support	see comments	19	25	Project west terminus serves Regional Center; 2040 HCT Corridor
Cost/Benefit	\$10,242/vhd reduced	15	15	Project eliminates 51 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	13	15	Extends regional bike syst.; median design to enhance ped travel/safety; #71; #151 line & 2040 HCT route.
TOTAL		92	100	

Project Description

Widen existing 3 lane road to accommodate 4 travel lanes including curbs, sidewalks, bike lanes. Additional ROW (design width of 115 ft.) also to be acquired for turn lanes, median pedestrian refuge and future HCT.

2040 Relationship

2040 Concept plan identifies corridor for future HCT. Project ROW acquisition would secure this objective. Project construction would help to facilitate Clackamas Town Center buildout although this is mostly expected to be driven by market conditions with or without additional public assistance. Congestion benefits are more strongly related to easing conditions associated with existing and planned residential/commercial development east of the Regional Center.

Administrative Criteria

- *Overmatch:* 47% @ total cost of \$10.5 million, and regional provision of \$5.6 million (includes \$600,000 of Regional STP programmed for 30%PE/EIS).
- *Multi-jurisdictional financial support:* Significant private sector participation through system development charges and potential swap of LID funds for state funds related to the Sunnybrook Ext. project.
- *Implementable:* Qualified yes: Draft EIS starts summer '95 using programmed Reg. STP funds. Fin. Design in spring '97. PS&E possible by '98.
- *Future Projects:* Project would coordinate with construction of currently programmed Sunnybrook Extension and serve to minimize congestion expected at the Extension's juncture with Sunnyside Road at 108th. The Extension is, in turn, related to programmed construction of the Sunnybrook Split Diamond Interchange in FY 98. Coordinates with bike and ped improvements on the new Sunnybrook Extension.

Other Relevant Information

Bike and pedestrian multi-modal points should be made contingent on commitment to sensitive median design. Signal timing and intersection modifications have already been implemented. Shuttle service from 122nd to Sunnyside Transit Center funded. Capacity needed to accommodate easterly residential buildout. Priority project in the Sunnyside Area Transportation Master Plan, Nov, 1994.

Potential Phases

No feasible lesser construction phase. Reduced ROW would impede securing 2040 HCT alignment. ROW acquisition would achieve primary 2040 goal. Est. of \$1 million for ROW; Final Design cost uncertain.

PROJECT: Greenburg/Mapleleaf Improvements (Locust Street to Highway 217 ramp)

SPONSOR: Tigard

TECHNICAL RANK: 2nd of 17

REQUESTED FUNDS: \$1,272,301

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	0.91	15	15	Recent City study indicates much higher actual congestion at this location. Increase to 15 points?
2015 V/C Ratio	0.99	10	10	See above; Increase to 10 points?
Accident Rating	see comments	20	20	Points based on City and County staff analysis of relative hazards.
2040 Support	see comments	25	25	Project serves Washington Square Regional Center.
Cost/Benefit	\$2,857/vhd reduced	15	15	Off-model calculations show project eliminates an est.7 veh. hrs of delay that would otherwise occur.
Multi-Modal	bike/ped/transit factors	5	15	Aids existing transit service; no bike/ped benefits.
TOTAL		90	100	

Project Description

Add northbound left turn lane at Washington Square Road, and a right turn lane to the northbound off-ramp.

2040 Relationship

Improves access to and from a 2040 Regional Center through low cost capital improvements.

Administrative Criteria

- *Overmatch:* 10.27%
- *Multi-jurisdictional financial support:* No
- *Implementable:* Yes
- *Future Projects:* No

Other Relevant Information

Project is specifically called out in 1995 study of Washington Square circulation and access issues as an example of a location whose Metro modeled characteristics fail to show actual severity of congestion and delay due to complex geometry of the interchange. V/C points probably deserve to be higher (25 versus 13) based on observed peak hour queues in excess of 500 ft.

Potential Phases

None

PROJECT: I-5 & I-84 Connection Ramp Metering
SPONSOR: ODOT

TECHNICAL RANK: 3rd of 17
REQUESTED FUNDS: \$449,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	see comments	15	15	Project encompasses highly congested freeway/arterial interchanges.
2015 V/C Ratio	see comments	10	10	Same as above
Accident Rating	see comments	20	20	Based on ODOT staff analysis
2040 Support	see comments	25	25	Project serves Central City.
Cost/Benefit	\$NA/vhd reduced	15	15	Project impact on delay cannot be calculated in EMME/2. National data supports high cost effectiveness.
Multi-Modal	bike/ped/transit factors	5	15	Queue jumping will aid transit.
TOTAL		90	100	

Project Description

Infills ramp meters at eight locations: Vicotoria Blvd (Colosium) to SB I-5); Grand Ave. NB/Everett St. EB to I-84 EB; Going St. to SB I-5; Greeley Ave. to SB I-5; Morrison Bridge EB to NB I-5; Morrison St. WB to I-5 NB; Morrison Bridge to EB I-84; 16th Ave to EB I-84. Enables remote control of each meter from ODOT's downtown command center. All ramps exceed 31-ft width and are capable of two-lane retrofit supporting HOV priority lanes.

2040 Relationship

See above

Adminstrative Criteria

- *Overmatch: 10.27%, none*
- *Multi-jurisdictional financial support: none*
- *Implementable: yes*
- *Future Projects: none*

Other Relevant Information

City of Portland has concurred with project in concept. HOV-preferential design is not yet confirmed.

Potential Phases

No minimum system configuration has been engineered, but incremental implementation of the eight ramps is possible.

PROJECT: Barnes Signal Interconnect (Suntek to Miller)
SPONSOR: Washington County

TECHNICAL RANK: 4th of 17
REQUESTED FUNDS: \$18,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.35	15	15	
2015 V/C Ratio	1.36	10	10	
Accident Rating	see comments	20	20	2.27 acc/million veh mi compared to statewide average for comparable suburban facilities of 1.89.
2040 Support	see comments	13	25	Project serves Cedar Hills Town Center.
Cost/Benefit	\$104/vhd reduced	15	15	Project eliminates 9.64 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	Project aids existing transit service.
TOTAL		88	100	

Project Description

Portions of interconnect already exist but additional conduit, wiring, and upgraded controller software are needed. Enables multiple signal system timing plans for peak period, weekend, special event and emergency situations.

2040 Relationship

Town Center access.

Administrative Criteria

- *Overmatch:* 10.27
- *Multi-jurisdictional financial support:* Washington County and ODOT.
- *Implementable:* Yes
- *Future Projects:* No

Other Relevant Information

Project involves transfer of signal operational responsibility from ODOT to Washington County; consistent with Portland-area ATMS Plan.

Potential Phases

None

PROJECT: 124th Avenue/99W/Tualatin Road Intersection
SPONSOR: Tualatin

TECHNICAL RANK: 5th of 17
REQUESTED FUNDS: \$4,486,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.01	15	15	
2015 V/C Ratio	1.43	10	10	
Accident Rating	see comments	20	20	9.56 accidents/million vehicles miles compared to statewide average for comparable facilities of 3.55.
2040 Support	see comments	25	25	Project serves a 2040 Industrial Sanctuary.
Cost/Benefit	\$65,963/vhd reduced	8	15	Project eliminates 3.8 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	10	15	Project continues MSTIP funded bike/ped improvements on Tualatin Road to 99W.
TOTAL		88	100	

Project Description

Close existing Highway 99W/Tualatin Road intersection. Combine/relocate unspecified accesses along approximately a 1/4 mile of the western side of Hwy 99. Move Tualatin Road alignment approximately 400 feet southwesterly to a "T" intersection with newly constructed 124th Ave. Continue bicycle and pedestrian facilities funded by the MSTIP Tualatin Road project. Construct 1,600 feet of 124th Avenue between Leveton Road (south project terminus) and a "T" intersection with Hwy. 99 (north project terminus). Construct 550 feet of Leveton Dr. east from intersection with 124th.

2040 Relationship

Improves existing access to Tualatin industrial area designated as a 2040 Industrial Sanctuary.

Administrative Criteria

- *Overmatch:* None indicated. Subdivision hearings process has obtained ROW easements at an estimated value of \$350,000.
- *Multi-jurisdictional financial support:* No
- *Implementable:* yes
- *Future Projects:* Coordinates with planned construction of 124th south to Tualatin-Sherwood Road and MSTIP 3 bike and pedestrian improvements to Tualatin Road.

Other Relevant Information

Largest Industrial Sanctuary in West Washington County; Completes joint City/County/ODOT project to improve Tualatin Road from I-5 to 99W.

Potential Phases

- Phase 1: Construct Tualatin Rd. realignment to 124th; 124th between new Tualatin Road and Hwy 99W (\$3.4 million); fails 2040 Ind. Sanc. access objective.
- Phase 2: Construct 124th to Tualatin Road realignment; finish Leveton connection to 124th (\$1.6 Million); requires all of phase 1.

PROJECT: I-5/Front Street Ramp Metering
SPONSOR: ODOT

TECHNICAL RANK: 6th of 17
REQUESTED FUNDS: \$90,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	see comments	15	15	Project encompasses highly congested freeway/arterial interchange.
2015 V/C Ratio	see comments	10	10	Same as above
Accident Rating	see comments	20	20	Based on ODOT staff analysis
2040 Support	see comments	25	25	Project serves Central City.
Cost/Benefit	\$NA/vhd reduced	15	15	Project impact on delay cannot be calculated in EMME/2. National data supports high cost effectiveness.
Multi-Modal	bike/ped/transit factors	0	15	Queue jumping would aid transit.
TOTAL		85	100	

Project Description

Install ramp meter at the Front Avenue onramp to SB I-5. Current ramps exceed 31-ft width and are capable of two-lane retrofit supporting HOV priority lanes. However, HOV bypass has not been confirmed and multi-modal points are not assigned.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* 10.27%, none
- *Multi-jurisdictional financial support:* none
- *Implementable:* yes
- *Future Projects:* none

Other Relevant Information

City of Portland has concurred with project in concept. HOV-preferential design is not yet confirmed.

Potential Phases

None.

PROJECT: Arterial Signal Optimization Project: SE Division (60th to 257th)
SPONSOR: ODOT

TECHNICAL RANK: 7th of 17
REQUESTED FUNDS: \$258,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.08	15	15	
2015 V/C Ratio	1.12	10	10	
Accident Rating	see comments	20	20	COP 240 HAL list (see Other Relevant Info below).
2040 Support	see comments	19	25	Project serves Gresham Regional Center, I-205 Interchange and 2040 Transit Corridors.
Cost/Benefit	\$2,378/vhd reduced	15	15	Project eliminates 3.91 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	aids existing transit.
TOTAL		84	100	

Project Description

Interconnect corridor signal systems, optimize signal timing, upgrade loop detectors and on-street masters as required; enable future centralized corridor management.

2040 Relationship

Enhances people moving capacity of existing minor arterial connections between the central city, regional centers, town centers, transit corridors and industrial areas without addition of new lane capacity.

Administrative Criteria

- *Overmatch:* None (potentially eligible for 100% federal share)
- *Multi-jurisdictional financial support:*
- *Implementable:* Yes
- *Future Projects:*

Other Relevant Information

COP HAL rank: #91: @ SB I-205 ramps; #111: @ NB ramps; #141 @ 67th; #166 @ 82nd; # 234 @ 112; #159 @ 122; # 179 @ 130th; # 214 @ 148th; # 184 @ 162nd. One of five projects recommended from multi-agency ODOT Technical Advisory Committee to begin implementation of the Arterial Element of the Portland ATMS Plan. Nominated projects are Committee consensus of hi priorities based on fostering inter-jurisdictional cooperation, congestion reduction, freight volumes, transit service and functional coordination with parallel freeway facilities. 2040 points discount corridor segments outside central city/regional centers. Tech ranking inadequate for benefits of increased flexibility and reliability of arterial operation provided by interconnected, centrally controlled systems as demonstrated in the L.A. earthquake. Ranking doesn't credit projects for automated collection of performance data needed to calibrate the regional EMME 2 model and to implement the ISTEA congestion, intermodal and public transit management plans.

Potential Phases

- 82nd to 181st: upgrades controller at 71st to 170-type; leave @ fixed timing from 60th to 82nd (\$183,000)
- 181st to 257th: (all delay and V/C points associated w/ 60th/181st limits.) This phase would extend corridor control to U.S. 26, promote interjurisdictional coordination and honor local commitment of \$120,000 by Gresham/County for E. Co. Signal Optimization Master Plan.

PROJECT: 238th Ave/Halsey Street Intersection
SPONSOR: Multnomah Co.

TECHNICAL RANK: 8th of 17
REQUESTED FUNDS: \$376,531

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.41	15	15	
2015 V/C Ratio	1.17	10	10	
Accident Rating	see comments	20	20	4th worst of 149 county intersections (SPIS rating of 53.43)
2040 Support	see comments	13	25	Project serves Troutdale Town Center; connects to Gateway
Cost/Benefit	\$8,706/vhd reduced	15	15	Project eliminates 2.4 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	15	15	Intersection reconstruction will upgrade bike lanes; pedestrian and transit amenities to be provided.
TOTAL		83	100	

Project Description

Add left and right turn lanes and install new traffic signal to County minor arterial; new sidewalks, street lights, restores existing bike lanes.

2040 Relationship

Project serves Troutdale Town Center, access to Gateway District.

Administrative Criteria

- *Overmatch:* 10.27%
- *Multi-jurisdictional financial support:* NA
- *Implementable:* yes
- *Future Projects:* Coordinates with ODOT programmed widening of I-84 and reconstruction of I-84/238th Interchange which can be expected to increase pressure on the Interchange. No specific leverage of one project with the other.

Other Relevant Information

High technology development is occurring near the project site; the Edgefield Station development is nearby.

Potential Phases

None

PROJECT: Murray South Signal Interconnect (Farmington to Milikan Avenue)
SPONSOR: Washington County

TECHNICAL RANK: 9th of 17
REQUESTED FUNDS: \$31,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.08	15	15	
2015 V/C Ratio	1.27	10	10	
Accident Rating	see comments	20	20	3.55 acc/million vehicles miles compared to statewide average for comparable suburban facilities of 1.89.
2040 Support	see comments	13	25	Project serves Cedar Mills Town Center; Farmington Main St.; Beaverton Crk & Teck LRT Stations.
Cost/Benefit	\$-2,134/vhd reduced	15	15	See "Other Relevant Information" below.
Multi-Modal	bike/ped/transit factors	5	15	Project serves existing transit.
TOTAL		78	100	

Project Description

Install a master controller, signal interconnect, and develop multiple signal system timing plans for peak period, weekend, special event and emergency situations.

2040 Relationship

See above.

Administrative Criteria

- *Overmatch:* 10.27%
- *Multi-jurisdictional financial support:* No
- *Implementable:* Yes
- *Future Projects:* Project optimizes intersection of Murry with two state highways (OR 8 & 10) and would coordinate with proposed TV Highway Signal Optimization project seeking Region 2040 funds.

Other Relevant Information

Delay data for this project is dominated by effects of a separate proposal (Murry Overcrossing: Terman to Milikan). The Overcrossing project releases approximately 55 hours of delay into the segments of Murray modelled for the proposed project which then records a 1 hour increase in delay. Signal benefits would be positive without the Overcrossing project and/or delay at the intersections would be greater without the signal project. Based on cost/benefit of other similar projects, 15 points were assigned despite modelled delay increase.

Potential Phases

None

PROJECT: Murray North Signal Interconnect (Highway 26 to Cornell Road)
SPONSOR: Washington County

TECHNICAL RANK: 10th of 17
REQUESTED FUNDS: \$9,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.55	15	15	
2015 V/C Ratio	1.79	10	10	
Accident Rating	see comments	20	20	8.03 acc/million vehicles miles compared to statewide average for comparable suburban facilities of 1.89.
2040 Support	see comments, below	13	25	
Cost/Benefit	\$549/vhd reduced	15	15	Project eliminates 0.91 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	Project enhances existing transit service.
TOTAL		78	100	

Project Description

Interconnect signals at three intersections on Murry Blvd (@ US 26, Science Park Drive and Cornell Road); placement of master controller, conduit and development of multiple signal system timing plans for peak period, weekend, special event and emergency situations..

2040 Relationship

SProject serves Murray/Cornell 2040 Town Center; Murray transit corridor and optimizes local system coordination with US 26.

Administrative Criteria

- *Overmatch:* 10.27
- *Multi-jurisdictional financial support:* No
- *Implementable:* Yes
- *Future Projects:* No

Other Relevant Information

Project is consistent with Portland-area ATMS Plan.

Potential Phases

None

PROJECT: SE Johnson Creek Blvd. Ph. 2 (36th - 45th Ave)
SPONSOR: City of Portland

TECHNICAL RANK: 11th of 17
REQUESTED FUNDS: \$1,272,301

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.33	15	15	
2015 V/C Ratio	1.29	10	10	
Accident Rating	see comments	10	20	Moderate points based on City of Portland staff analysis of relative hazards.
2040 Support	see comments	13	25	Project provides access to Milwaukie Regional Center and connects 82nd Ave with 99E.
Cost/Benefit	\$9,220/vhd reduced	15	15	Project eliminates 7.7 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	15	15	Critical bike link to Springwater Trail; 6.5 ft. s/walk enhances ped travel/safety; enhances transit amenities.
TOTAL		78	100	

Project Description

Phase 1 funded with Interstate Transfer and Sanitary District dollars. Provided storm-drainage improvement and preliminary engineering for entire project. Phase 1 includes construction of corridor enhancements from 32nd to 36th Avenues. Phase 2 will provide residual alignment, illumination, bicycle/pedestrian and transit/ADA improvements and associated right-of-way acquisition and pavement widening to accommodate 11-ft. travel lanes and five foot bicycle lanes, curbs, gutters and a sidewalk on the south side to provide Springwater Trail access at 45th Avenue.

2040 Relationship

Johnson Creek Blvd serves as a regional east-west collector; a Portland neighborhood collector, minor transit and bicycle routes; and a Milwaukie minor arterial, transit and bicycle route. It links I-205 with the Tacoma overpass of McLoughlin Blvd and westward to the Sellwood Bridge and downtown Portland. It also serves as an eastern gateway to Milwaukie.

Administrative Criteria

- *Overmatch:* 35%; Milwaukie has requested regional approval to reallocate \$833,000 of competitive FAU program funds to this project. City of Portland has committed to supply balance of full project cost (\$439,301).
- *Multi-jurisdictional financial support:* Portland, Milwaukie joint project (60/40 split cost)
- *Implementable:* PS&E completed during Phase 1
- *Future Projects:* Springwater Trail constr in '95/96; Linwood Ave/Johnson Crk Blvd intersection improvement (constr. 1995); Johnson Crk Wastewater line replacement from Linwood Ave to 55th and Bell to 77th (construction 1995).

Other Relevant Information

Original project scope expanded to include ADA, bicycle and pedestrian requirements and to encompass City of Milwaukie storm water and sanitary sewer collection and treatment requirements. Increased ADA/tree preservation/utilities scope doubled original project cost. Major connector to Springwater Trail

Potential Phases

None identified, though a lesser construction phase is probably viable; PE already completed for entire project. Milwaukie is committed to provide match for up to \$568,000 of regional funds; the City has committed match against \$265,000 but has not yet secured the balance of \$343,959.

PROJECT: Scholls Ferry Signal Interconnect (Nimbus Drive to Highway 217)
SPONSOR: Washington County

TECHNICAL RANK: 12th of 17
FUNDS REQUESTED: \$31,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	0.82	8	15	
2015 V/C Ratio	1.05	10	10	
Accident Rating	see comments	20	20	3.79 acc/million vehicles miles compared to statewide average for comparable suburban facilities of 1.89.
2040 Support	see comments	13	25	Project serves Washington Sq. Regional Center; Scholls Ferry transit Corridor and 2040 LRT Corridor
Cost/Benefit	\$2,692/vhd reduced	15	15	Project eliminates .65 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	aids transit service.
TOTAL		71	100	

Project Description

Interconnect Washington County signal system along Scholls Ferry Road with ODOT signals at Highway 217.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* 10.27%
- *Multi-jurisdictional financial support:* none
- *Implementable:* Yes
- *Future Projects:* none

Other Relevant Information

Potential Phases

none

PROJECT: SE Water Avenue Extension
SPONSOR: City of Portland

TECHNICAL RANK: 13th of 17
REQUESTED FUNDS: \$1,600,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	.76	0	15	
2015 V/C Ratio	.90	5	10	
Accident Rating	see comments	20	20	PUC record of 18 rail/vehicle accident (Grand/Curruthers/Clay); #136 of COP HAL list @ Clay/MLK
2040 Support	see comments	25	25	Project serves SE (Central City) Industrial Sanc.; OMSI
Cost/Benefit	\$NA/vhd reduced	0	15	No congestion/ no cost per benefit.
Multi-Modal	bike/ped/transit factors	11	15	Extends reg. bike system; ped safety benefit; 2040 transit system.
TOTAL		71	100	

Project Description

(SE Water Avenue at Clay to SE Division Place at 4th Avenue). Three lane facility with bike lanes and sidewalks; industrial access arterial with connections to local streets and regional highway network.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* Proposed 50/50 split of \$3.2 million project LID funded.
- *Multi-jurisdictional financial support:* public/private participation.
- *Implementable:* Yes
- *Future Projects:* None

Other Relevant Information

Some ROW segments currently reserved/dedicated. Will provide Greenway Trail access.

Potential Phases

OMSI to SE Clay built in 1991. Current Project could segment as Phase 1: Full PE and reposition critical viaduct column (\$500,000 est.)

PROJECT: Arterial Signal Optimization Project: Sandy Blvd (E Burnside to 82nd Avenue)
SPONSOR: ODOT

TECHNICAL RANK: 14th of 17
REQUESTED FUNDS: \$167,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.09	15	15	
2015 V/C Ratio	1.14	10	10	
Accident Rating	see comments	20	20	#40, 107, 135, 146, 154, 176 on COP 240 HAL list.
2040 Support	see comments	19	25	Serves Central City; Hollywood Town Center; Transit Corridor.
Cost/Benefit	\$NA/vhd reduced	0	15	EMME/2 anomaly: enhanced operation of these congested links "draws" added volumes/increases congestion.
Multi-Modal	bike/ped/transit factors	5	15	aids existing transit.
TOTAL		69	100	

Project Description

Interconnect corridor signal systems, optimize signal timing, upgrade loop detectors and on-street masters as required; enable future centralized corridor management.

2040 Relationship

Enhances people moving capacity of existing minor arterial connections between the central city, regional centers, town centers, transit corridors and industrial areas without addition of new lane capacity.

Administrative Criteria

- *Overmatch:* None (potentially eligible for 100% federal share)
- *Multi-jurisdictional financial support:*
- *Implementable:* Yes
- *Future Projects:*

Other Relevant Information

One of five projects recommended from multi-agency ODOT Technical Advisory Committee to begin implementation of the Arterial Element of the Portland Area Advanced Transportation Management System Plan. The nominated projects represent Committee consensus of highest priorities based on fostering of inter-jurisdictional cooperation, congestion reduction, freight volumes, transit service and functional coordination with parallel freeway facilities. 2040 points discount portions of corridors outside central city and regional centers. Technical ranking does not adequately account for benefits of increased flexibility and reliability of arterial operation provided by interconnected, centrally controlled systems as demonstrated in the L.A. earthquake. Ranking also fails to credit projects for automated collection of performance data needed to calibrate the regional EMME 2 model and to implement the ISTEA congestion, intermodal and public transit management plans.

Potential Phases

To Be Determined

PROJECT: Arterial Signal Optimization Project: TV Highway (B + City Limits to Baseline Rd)
SPONSOR: ODOT

TECHNICAL RANK: 15th of 17
REQUESTED FUNDS: \$250,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.14	15	15	
2015 V/C Ratio	1.20	10	10	
Accident Rating	see comments	0	20	2.96 accidents/million vehicles miles vrs state urban average of 3.55.
2040 Support	see comments	19	25	Project connects Hillsboro and Beaverton Regional Centers and 2040 Transit Corridor.
Cost/Benefit	\$1,295/vhd reduced	15	15	Project eliminates 9.65 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	serves existing transit.
TOTAL		64	100	

Project Description

Interconnect corridor signal systems, optimize signal timing, upgrade loop detectors and on-street masters as required; enable future centralized corridor management.

2040 Relationship

Enhances people moving capacity of existing minor arterial connections between the central city, regional centers, town centers, transit corridors and industrial areas without addition of new lane capacity.

Administrative Criteria

- *Overmatch:* None (potentially eligible for 100% federal share)
- *Multi-jurisdictional financial support:*
- *Implementable:* Yes
- *Future Projects:*

Other Relevant Information

One of five projects recommended from multi-agency ODOT Technical Advisory Committee to begin implementation of the Arterial Element of the Portland Area Advanced Transportation Management System Plan. The nominated projects represent Committee consensus of highest priorities based on fostering of inter-jurisdictional cooperation, congestion reduction, freight volumes, transit service and functional coordination with parallel freeway facilities. 2040 points discount portions of corridors outside central city and regional centers. Technical ranking does not adequately account for benefits of increased flexibility and reliability of arterial operation provided by interconnected, centrally controlled systems as demonstrated in the L.A. earthquake. Ranking also fails to credit projects for automated collection of performance data needed to calibrate the regional EMME 2 model and to implement the ISTEA congestion, intermodal and public transit management plans.

Potential Phases

To Be Determined

PROJECT: Arterial Signal Optimization Project: SE Powell Blv. (SE 11th Avenue to SE 98th Avenue) **TECHNICAL RANK:** 16th of 17
SPONSOR: ODOT **REQUESTED FUNDS:** \$50,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	1.14	15	15	
2015 V/C Ratio	1.20	10	10	
Accident Rating	see comments	20	20	5.18 accidents/million vehicles miles vs state average of 3.55.
2040 Support	see comments	13	25	Serves 2040 transit corridor and Powell/Foster and 82nd Main Streets.
Cost/Benefit	\$NA/vhd reduced	0	15	EMME/2 anomaly: enhanced operation of these congested links "draws" added volumes/increases congestion.
Multi-Modal	bike/ped/transit factors	5	15	aids existing transit.
TOTAL		63	100	

Project Description

Interconnect corridor signal systems, optimize signal timing, upgrade loop detectors and on-street masters as required; enable future centralized corridor management.

2040 Relationship

Enhances people moving capacity of existing minor arterial connections between the central city, regional centers, town centers, transit corridors and industrial areas without addition of new lane capacity.

Administrative Criteria

- *Overmatch:* None (potentially eligible for 100% federal share)
- *Multi-jurisdictional financial support:* none
- *Implementable:* Yes
- *Future Projects:* none

Other Relevant Information

One of five projects recommended from multi-agency ODOT Technical Advisory Committee to begin implementation of the Arterial Element of the Portland Area Advanced Transportation Management System Plan. The nominated projects represent Committee consensus of highest priorities based on fostering of inter-jurisdictional cooperation, congestion reduction, freight volumes, transit service and functional coordination with parallel freeway facilities. 2040 points discount portions of corridors outside central city and regional centers. Technical ranking does not adequately account for benefits of increased flexibility and reliability of arterial operation provided by interconnected, centrally controlled systems as demonstrated in the L.A. earthquake. Ranking also fails to credit projects for automated collection of performance data needed to calibrate the regional EMME 2 model and to implement the ISTEA congestion, intermodal and public transit management plans.

Potential Phases

None

PROJECT: SE Foster Road Realignment (162nd Avenue to Jenne Road)

SPONSOR: City of Portland

TECHNICAL RANK: 17th of 17

REQUESTED FUNDS: \$600,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
1990 V/C Ratio	.82	0	15	
2015 V/C Ratio	1.17	10	10	
Accident Rating	see comments	20	20	108th on City list of 240 worst intersections.
2040 Support	see comments	13	25	Project serves 2040 transit corridor; Town Center.
Cost/Benefit	\$11,628/vhd reduced	15	15	Full project would eliminate 2.58 vehicle hours of delay that would occur in its absence.
Multi-Modal	bike/ped/transit factors	5	15	Reduced scope project provides no bike links between intersections; ped benefits.
TOTAL		63	100	

Project Description

Provide signals and left turn lanes at SE 162nd and Jenne at Foster Road. No sidewalks or bike lanes in reduced scope. Realignment of 2 lane roadway and SE 162nd approach, needed to eliminate sight/distance and geometric hazards, and provide for left turn lanes, is deferred to later phase.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* Eligible for 100% federal match as safety project.
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None; substantial market development anticipated in area. Impact fees?

Transit Oriented Development (TOD)

PROJECT: TOD Implementation Program**SPONSOR: Metro****TECHNICAL RANK.****1st of 7****REQUESTED FUNDS: \$4,500,000**

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	15%	25	25	2015 PEF of 5 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+29.5 HH/ac	13	25	8.5 to 38 HH/ac
2040 Support	see comment, below	25	25	
Cost/Benefit	\$3.27/VMT reduced	15	15	Assumes funding of two projects w/ each revolving three times before depletion of original \$4.5 million.
Multi-Modal	bike/ped/tran/auto	10	10	Benefits four transportation modes (bike/ped/transit/auto).
TOTAL		88	100	

Project Description

This proposal will provide \$4.5 million for a Regional Revolving Fund to acquire property at key areas immediately adjacent to transit stations suitable for TOD development. A small portion of the fund would be used to make other public investments (site preparation and site improvements) needed to encourage private implementation of a TOD project. Technical ranking for this project was based on performance of two projects costing approximately \$2.25 million each (the average cost of all nominated TOD projects) located in either Hillsboro or Gresham. Unreflected in the previous score was the fund's "leverage" value: land sold for development is available for reinvestment in new projects. This score has been modified to assume proceeds from three revolving sales of publically owned parcels. The significant improvement in density reflected in the technical score (relative to other proposed TOD projects) is predicated on the significant leverage provided by public land ownership (see page 10 of project prospectus).

2040 Relationship

Project leverages high density development in Regional Centers and at Light Rail stations.

Administrative Criteria

- *Overmatch:* None.
- *Multi-jurisdictional financial support:* Probable.
- *Implementable:* Revision of FTA regulations explicitly enable use of federal funds to purchase property intended to leverage transit oriented development. Additionally, the rules now sanction deferred local match which will further ease use of funds for this purpose. (Letter to Metro from FTA, March 15, 1995; Fed. Register Vol. 60, No. 89, Tuesday May 9, 1995, p. 24682,3).
- *Future Projects:* It is not expected that market forces will achieve program objectives in a timely fashion without public sector demonstration and/or assistance. The program could be expected to help leverage objectives of other future projects.

Other Relevant Information

The program assumes that \$4.5 million can produce three cycles of two projects costing approximately \$2.2 million (6 projects in total) before writedowns made to leverage above-market densities deplete the fund.

Following sized projects (or combination thereof) are feasible based on a \$4.5 million budget:

<u>Category</u>	<u>Est. Cost/sq. ft.</u>	<u>Est. Total Acreage</u>
Raw Land (not yet parcelized)	\$1.00 or less	112 Ac
Multi-Family housing	\$1.75 - \$2.25 net	55 Ac
Large Scale Retail	\$3.50	26 Ac
Office	\$6 - \$8.00	15 - 17 Ac
Small Scale Retail & Big Box (small parcels)	\$6 - \$10.00	10 - 17 Ac

Potential Phases

Minimum Logical Project:

1-50 acre subdivision raw land @ \$1.00/sq. ft. = \$2.2 mil

1-10 acre urban mixed used infill @ \$5.00/sq. ft. = \$2.2 mil

PROJECT: Lovejoy Ramp Replacement PE
SPONSOR: City of Portland

TECHNICAL RANK: 2nd of 7
REQUESTED FUNDS: \$1,054,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	12%	25	25	2015 PEF of 6 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+80 HH/ac	25	25	20 to 100 HH/ac
2040 Support	see comment, below	25	25	
Cost/Benefit	\$159.6/VMT	0	15	
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		85	100	

Project Description

Preliminary engineering for removal of the existing Lovejoy Ramp and construction of a new shorter ramp to the Broadway Bridge to encourage development of the River District section of the Central City. Estimated construction cost for the project is \$11.8 million.

2040 Relationship

Removes structural impediment to north extension of central city into River District.

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes; PE only.
- *Future Projects:* Central City Streetcar; Tanner Creek Park and Basin projects which provide primary transit link and open space for River District, are infeasible without project.

Other Relevant Information

Public outreach, conceptual design and preliminary cost estimates completed already.

Potential Phases

Project is for PE

PROJ. F: Civic Neighborhood- Central-NS-Collector**SPONSOR: Gresham****TECHNICAL RANK 3rd of 7****REQUESTED FUNDS: \$1,844,000**

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	12%	25	25	2015 PEF of 6 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+17.5 HH/ac	0	25	8.5 to 26 HH/ac
2040 Support	see comment, below	25	25	
Cost/Benefit	\$76.65/VMT reduced	8	15	
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		68	100	

Project Description

North-South Collector from Burnside to Division (Length = 2,450'). The collector (80-ft ROW) will provide two 12-foot travel lanes, two 8ft. parking lanes, 15 ft. sidewalks, and 5 ft. bike lanes. It will function as the main point of access and egress between the Civic Neighborhood, including the Civic Neighborhood LRT Station, and Division and Burnside. It will also function as the main pedestrian link in the western half of the neighborhood.

2040 Relationship

Serves Gresham Regional Center LRT

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* Public/private
- *Implementable:* Yes
- *Future Projects:* Market not expected to provide equal street amenities which could cripple overall development concept.

Other Relevant Information

Based on current development proposals, the southern portion of the 100-acre super-block is anticipated to build-out first and thus will require early access. Buildout of the northern portion (and thus the need for the Burnside Street outlet) is not reasonably assured by the 1998 implementation date for these funds. City does not believe phasing is feasible because grading/fill plan relies on entire project site geography to balance fill demand. Consultant estimates a 32% reduction of drive alone: methodology differs from Metro's. High Density scenario could produce up to 65 HH/acre. This would rank at 93 points.

Potential Phases

Phase 1: Construct from Division north to the LRT station (\$1,106,460)

Phase 2: Construct from LRT station north to Burnside (\$737,640)

Phases rank the same at 68 points.

PROJECT: Mill Avenue/Henry Street to Beaverton Central LRT Connection**SPONSOR: Beaverton****TECHNICAL RANK: 4th of 7****REQUESTED FUNDS: \$1,740,665**

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	15.4%	25	25	2015 PEF of 4 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+6.5 HH/ac	0	25	8.5 to 15 HH/ac
2040 Support	see comment	25	25	Serves Beaverton Regional Center LRT.
Cost/Benefit	\$22.77/VMT reduced	8	15	
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		68	100	

Project Description

Project request is for public funds to design, purchase ROW and construct extensions of two local streets that provide access to the Beaverton Central LRT Station. The project would leverage future private station-area buildout at higher than market densities. An approximate 1/8th mile segment of Mill Avenue would be widened/extended from the station south to Canyon Road. An approximate 1/4 mile extension of Henry Street would be constructed east from the station to Watson. In both cases, existing two lane service roads would be widened to two 12-ft travel lanes with bike lanes, 8- to 12-ft sidewalks, lighting, drains, etc., with left turn pockets at Canyon Road and Watson.

2040 Relationship**Administrative Criteria**

- *Overmatch:* 10.27%; none
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* Market demand driven improvements would not be expected to provide the requisite street character.

Other Relevant Information

The station area is subject to a transit-oriented zoning overlay district which is currently under revision to allow greater density. There is no current integrated development project "on the table". However, Beaverton owns an approximate 10-acre parcel northeast of the station area and anticipates that commitment of public funds would encourage proposals and leverage higher density development agreements as a condition for access to the public funds.

Potential Phases

Implementation phasing could provide PE and ROW (\$810,000) and/or Final Design and Construction phases (\$936,000). The local fire district requires the access provided by the full project as a condition for approval of more intensive development of the City owned parcel. Thus, there is no feasible lesser construction phasing.

PROJ# : Beaverton Creek Master Plan
SPONSOR: Beaverton/Spect Development

TECHNICAL RANK: 5th of 7
REQUESTED FUNDS: \$2,220,544

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	15%	25	25	2015 PEF of 5 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+8 HH/ac	0	25	22 to 30 HH/ac
2040 Support	see comment, below	13	25	Serves 2040 corridor
Cost/Benefit	\$5.98/VMT reduced	15	15	
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		63	100	

Project Description

Public funding of three project elements requested to leverage a \$127 million, 122-acre integrated development centered on the Beaverton Creek Station of the West Side LRT, adjacent to Nike and Tektronix campuses between 153rd, Murray Boulevard, and Jenkins Road: 1) *Traffic and Pedestrian Improvements* (\$359,970) to Murray Blvd. and Jenkins Road including sidewalks, lighting, signals and crosswalks, PE, site preparation and widening of Jenkins road; 2) *Community Market Street* (\$805,757) including sidewalks, landscaping, street furniture, lighting, PE and ROW; and 3) *Intermodal Transfer Area* (\$999,907) including electric shuttle loop road, pedestrian transfer area, sidewalks PE and ROW. Private sponsor providing 20% match (7.25% overmatch). Formerly the "Murray West Station" project.

2040 Relationship

Transit Corridor

Administrative Criteria

- *Overmatch*: 10.27% (20% assuming developer is called upon to provide contingency funds); significant ROW dedication.
- *Multi-jurisdictional financial support*: Match is privately funded in cooperation with public agency.
- *Implementable*: Yes
- *Future Projects*: Market demand is not expected to provide comparable amenities

Other Relevant Information

Project is already recipient of approximately \$540,000 CMAQ TOD Program award. Submittal of Master Plan pending.

Potential Phases

Intermodal Transfer Area: \$149,209 of Region 2040 Funds; \$540,000 CMAQ funds; \$178,000 ROW dedication (\$890,245 total phase cost).
Community Market Street: \$625,618 of Region 2040 Funds; \$156,404 of match (ROW dedication). \$782,022 total phase cost.
Both phases rank the same at 63 points. The Intermodal Transfer Area phase would only draw down 2040 funds by a net of \$149,209 though.

PROJECT: Broadway/Weidler Bicycle/Pedestrian Improvements
SPONSOR: City of Portland

TECHNICAL RANK: 6th of 7
REQUESTED FUNDS: \$2,500,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	1.5%	0	25	2015 PEF of 11 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+42 HH/ac	13	25	20 to 62 HH/ac
2040 Support	see comment	25	25	Serves amended central city.
Cost/Benefit	\$72.39/VMT	8	15	No calculated VMT reduction; therefore, full project cost for no benefit.
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		56	100	

Project Description

As originally submitted, this Phase 1 project would reconfigure Broadway/Weidler within the existing right-of-way from NE 9th to NE 16th Avenue to provide bicycle lanes and enhanced pedestrian access. The project includes wider sidewalks, transit amenities and intersection bulb outs to reduce crossing distances. Improvements will provide bicycle access and improve pedestrian access in the central city. (Phase 2 would extend treatment to Grand Avenue and decouple Broadway/Weidler.)

2040 Relationship

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* Phases II, III and IV eventually decouple Broadway/Weidler and extend bike/ped treatment from Grand to 24th.

Other Relevant Information

Originally submitted as bike project, reranked at ped project; currently ranked as TOD project. Current Household Density is 4 per acre.

Potential Phases

Project represents Phase 1 of 4.

PROJ T: Ground Floor Retail at Jail
SPONSOR: Washington County

TECHNICAL RANK:
REQUESTED FUNDS:

7th of 8
\$1,000,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
% Mode Chng	0%	0	25	2015 PEF of 12 w/o TOD - 2015 PEF of 12 w/ TOD
Density Delta	+13.5 Emp/ac	0	25	0 to 13.5 Emp/ac
2040 Support	see comment, below	25	25	
Cost/Benefit	\$53.88/VMT reduced	8	15	at full cost of \$1.4 mil; see "payback" proposal below.
Multi-Modal	bike/ped/tran/auto	10	10	10 points for aiding 4 or more modes.
TOTAL		43	100	

Project Description

This project would fund structural improvements needed to accomodate ground level retail within the new Criminal Justice Building Parking Garage in downtown Hillsboro. Without the funds, a structure would be designed that cannot be retrofitted at a latter date to accomodate the retail uses.

2040 Relationship

The project is centrally located in a 2040 designated Regional Center in proximity to the Westside LRT terminus and would anchor one end of the downtown which has been rezoned to implement transit oriented design concepts.

Administrative Criteria

- *Overmatch:* None. Project is associated with a \$7 million garage construction project though.
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None

Other Relevant Information

Washington County has proposed:

The region provides Washington County with \$1 million. The Park and Ride Structure is constructed with ground floor retail space as currently envisioned; and, Wahsington County returns \$250,000 over five years to the revolving fund.

Potential Phases

Full cost (\$1.119 million) is needed to design structure so that retail can be accomodated at later (market driven) date. Additional cost of \$285,000 to provide tenant improvements can be delayed with cost recovery via rents.

Transportation Demand Management (TDM)

PROJECT: Regional Transportation Demand Management
SPONSOR: Tri-Met

TECHNICAL RANK:
REQUESTED FUNDS:

1st of 7 projects
\$1,077,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VMT Avoided	47,379	30	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$23/VMT reduced	13	25	
Multi-Modal	Hi support	20	20	
TOTAL		88	100	

Project Description

Requested funds would provide FY 98 and FY 99 support to continue and enhance Tri-Met's TDM program. Services include carpool matching, emergency ride home, employer outreach, etc.

2040 Relationship

Region-wide benefits targeted at reduction of Central City congestion.

Administrative Criteria

- *Overmatch:* 9.27% given 20% match ratio.
- *Multi-jurisdictional financial support:* Tri-Met and ODOT
- *Implementable:* Ongoing
- *Future Projects:* TMA's (especially central city) reinforce TDM Program services.

Other Relevant Information

Potential Phases

Represents reduction of original three year request to two years.

PROJECT: Central City Transportation Management Association
SPONSOR: Portland

TECHNICAL RANK :
FUNDS REQUESTED:

2nd of 7 projects
\$300,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VTM Avoided	16,972	15	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$23/VTM reduced	13	25	
Multi-Modal	Hi support	20	20	TMA's would stimulate interest in multiple alternative travel modes.
TOTAL		85	100	

Project Description

Requested funds would support a three-year, fully funded Transportation Management Association (TMA) program in the Central City area, including the SE Industrial Sanctuary, including a full-time director (\$65,000/yr), marketing materials (\$20,000), computer/office equipment/furniture, legal services and special event funding (\$15,000). The general goals of TMA's are to coordinate business, citizen and government promotion of intensified development patterns called for in 2040, by formulating and implementing strategic action plans; aiding implementation of existing downtown plans, and managing area transportation system. Tri-Met, in partnership with local governments and downtown business/commercial interests will provide matching funds. Livable Oregon, Inc. will be paid (\$40,000/TMA) to provide training and technical assistance.

2040 Relationship

Promotes 2040 densities and increased mode splits in the central city.

Administrative Criteria

- *Overmatch:* 10.27%; none
- *Multi-jurisdictional financial support:* City of Portland and private sector provision of match.
- *Implementable:* Yes.
- *Future Projects:* CMAQ funds allocated in FY 93 for these purposes have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "downtown" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMA's may or may not be essential to achievement of program objectives, especially in the downtown Portland area.

Other Relevant Information

The program is designed to "kick start" TMA activity. It is anticipated that the TMA's would become self-defined, funded and motivated after the initial round of public financing. Allocation of funds to new TMA's must be coordinated with DEQ's current TMA program, funded with \$1 million of CMAQ funds, to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

Provide one or two years funding at higher required match ratio.

PROJECT : Oregon City Transportation Management Association
SPONSOR: Oregon City

TECHNICAL RANK:
FUNDS REQUESTED:

3rd of 7 projects
\$140,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VTM Avoided	2,211	0	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$16/VTM reduced	25	25	
Multi-Modal	Hi support	20	20	TMA's would stimulate interest in multiple alternative travel modes.
TOTAL		70	100	

Project Description

Requested funds would provide two or three years' funding for a Transportation Management Association (TMA) in Oregon City. Includes funding for a full-time director (\$65,000/yr), and other office/marketing materials. The general goals of the Oregon City TMA are to coordinate business, citizen and government planning for a future extension of light rail, and promotion of intensified development patterns called for in 2040, and corresponding improvement of local circulation and access needs by formulating and implementing strategic action plans; aiding implementation of existing downtown plans, and managing the area transportation system.

2040 Relationship

Promotes intensified Regional Center development and increased mode split.

Administrative Criteria

- *Overmatch:* 89%; Downtown Urban Renewal Agency provides \$125,000 against \$140,000 requested.
- *Multi-jurisdictional financial support:* Public and private participation.
- *Implementable:* Yes.
- *Future Projects:* TMA would also coordinate Clackamette Cove Study (requesting \$60,000 of Region 2040 funds leveraged by \$25,000 of local match.) CMAQ funds allocated in FY 93 for regional TMA program have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "chamber" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMAs may or may not be essential to achievement of program objectives.

Other Relevant Information

Allocation of funds to new TMAs must be coordinated with DEQ's current TMA program, funded with \$1 million of CMAQ funds to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

None in light of overmatch.

PROJECT: Swan Island Transportation Management Association
SPONSOR: Port of Portland

TECHNICAL RANK:
REQUESTED FUNDS:

4th of 7 projects
\$150,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VMT Avoided	5,936 VMT	0	30	
2040 Support	see comments, below	25	25	Criteria are ambiguous but support of Ind. Sanc. is generally noted as "Hi Priority".
Cost/Benefit	\$9/VMT reduced	25	25	
Multi-Modal	Hi support	20	20	
TOTAL		70	100	

Project Description

Funds to formalize and expand the Swan Island Transportation Management Association and provide operating funds for 2 years.

2040 Relationship

Project enhances constrained transportation system in Industrial Sanctuary.

Administrative Criteria

- *Overmatch:* 33% (\$100,000 from Port/private sources).
- *Multi-jurisdictional financial support:* Port and local business/commercial interests.
- *Implementable:* Yes
- *Future Projects:* CMAQ funds allocated in FY 93 for these purposes have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "downtown" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMAs may or may not be essential to achievement of program objectives, especially in the downtown Portland area.

Other Relevant Information

Allocation of funds to new TMAs must be coordinated with DEQ's current TMA program, funded with \$1million of CMAQ funds, to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

None in light of overmatch.

PROJ. : Gresham Transportation Management Association
SPONSOR: Tri-Met

TECHNICAL RANK:
FUNDS REQUESTED:

5. of 7 projects
\$283,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VMT Avoided	3,327	0	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$21/VMT reduced	13	25	
Multi-Modal	Hi support	20	20	TMA's would stimulate interest in multiple alternative travel modes.
TOTAL		58	100	

Project Description

Requested funds would support a three-year, fully funded Transportation Management Association (TMA) program in a designated Regional Center including including a full-time director (\$65,000/yr), marketing materials (\$20,000), computer/office equipment/furniture, legal services and special event funding (\$15,000). The general goals of TMA's are to coordinate business, citizen and government promotion of intensified development patterns called for in 2040, by formulating and implementing strategic action plans; aiding implementation of existing downtown plans, and managing area transportation system. Tri-Met, in partnership with local governments and downtown business/commercial interests will provide matching funds. Livable Oregon, Inc. will be paid (\$40,000/TMA) to provide training and technical assistance.

2040 Relationship

Promotes intensified Regional Center development and increased mode split.

Administrative Criteria

- *Overmatch:* 9.73% overmatch based on 20% proposed match.
- *Multi-jurisdictional financial support:* Tri-Met only?
- *Implementable:* Yes.
- *Future Projects:* CMAQ funds allocated in FY 93 for these purposes have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "downtown" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMAs may or may not be essential to achievement of program objectives, especially in the downtown Portland area.

Other Relevant Information

Downtown Plan enacted. Reg. Cntr TMA approved in concept. Downtown Development Association attempting passage of EID. Allocation of funds to new TMAs must be coordinated with DEQ's current TMA program, funded with \$1million of CMAQ funds, to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

Provide one or two years funding at higher required match ratio.

PROJE : Hillsboro Transportation Management Association
SPONSOR: Tri-Met

TECHNICAL RANK: 6th 7 projects
FUNDS REQUESTED: \$283,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VTM Avoided	2,739	0	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$26/VTM reduced	13	25	
Multi-Modal	Hi support	20	20	TMA's would stimulate interest in multiple alternative travel modes.
TOTAL		58	100	

Project Description

Requested funds would support a three-year, fully funded Transportation Management Association (TMA) program in Downtown Hillsboro, including a full-time director (\$65,000/yr), marketing materials (\$20,000), computer/office equipment/furniture, legal services and special event funding (\$15,000). The general goals of TMA's are to coordinate business, citizen and government promotion of intensified development patterns called for in 2040, by formulating and implementing strategic action plans; aiding implementation of existing downtown plans, and managing area transportation system. Tri-Met, in partnership with local governments and downtown business/commercial interests will provide matching funds. Livable Oregon, Inc. will be paid (\$40,000/TMA) to provide training and technical assistance.

2040 Relationship

Promotes intensified Regional Center development and increased mode split.

Administrative Criteria

- *Overmatch:* 9.73% overmatch based on 20% proposed match.
- *Multi-jurisdictional financial support:* Tri-Met and private sector provision of match.
- *Implementable:* Yes.
- *Future Projects:* CMAQ funds allocated in FY 93 for these purposes have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "downtown" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMAs may or may not be essential to achievement of program objectives, especially in the downtown Portland area.

Other Relevant Information

Downtown Area Station Community Planning Process to capture LRT economic stimulus. 15 member Citizens Advisory Task Force. Downtown Business Asso. forming EID for LRT associated improvements. Allocation of funds to new TMAs must be coordinated with DEQ's current TMA program, funded with \$1million of CMAQ funds, to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

Provide one or two years funding at higher required match ratio.

PROJECT: Milwaukie Transportation Management Association
SPONSOR: Tri-Met

TECHNICAL RANK:
FUNDS REQUESTED:

7th 7 projects
\$283,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
VMT Avoided	2,550	0	30	
2040 Support	see comments, below	25	25	
Cost/Benefit	\$28/VMT reduced	13	25	
Multi-Modal	Hi support	20	20	TMA's would stimulate interest in multiple alternative travel modes.
TOTAL		58	100	

Project Description

Requested funds would support a three-year, fully funded Transportation Management Association (TMA) program in Milwaukie's Regional Center at the Milwaukie Downtown Development Association office. The project scope includes the downtown area and the Expanded city Center. The project provides for a full-time director (\$65,000/yr), marketing materials (\$20,000), computer/office equipment/furniture, legal services and special event funding (\$15,000). The general goals of TMA's are to coordinate business, citizen and government promotion of intensified development patterns called for in 2040, by formulating and implementing strategic action plans; aiding implementation of existing downtown plans, and managing area transportation system. Tri-Met, in partnership with local governments and downtown business/commercial interests will provide matching funds. Livable Oregon, Inc. will be paid (\$40,000/TMA) to provide training and technical assistance.

2040 Relationship

Promotes intensified Regional Center development and increased mode split.

Administrative Criteria

- *Overmatch:* 9.73% overmatch based on 20% proposed match.
- *Multi-jurisdictional financial support:* Tri-Met and private sector provision of match (EID assessment/business licence surcharge).
- *Implementable:* Yes.
- *Future Projects:* CMAQ funds allocated in FY 93 for these purposes have yet to be dedicated to projects. State mandates (ECO/Parking Rule/TPR) and federal air quality regulations essentially dictate similar activities and enlightened self-interest of "downtown" business leaders may lead to implementation of many of the activities that the TMA program is anticipated to facilitate. Public funding of TMA's may or may not be essential to achievement of program objectives, especially in the downtown Portland area.

Other Relevant Information

Downtown Dev. Asso. established in 1991. Citywide Vision Statement under public review. S/N Transit Corridor Milwaukie Special Study Area participation. Allocation of funds to new TMA's must be coordinated with DEQ's current TMA program, funded with \$1million of CMAQ funds, to assure that current and future initiatives respond to regional 2040 priorities. The current short list anticipates allocation of no more than \$787,000 to new TMA's: \$207,000 of residual CMAQ funds and a balance of \$580,000 from draw down of the \$26 million 2040 Regional Reserve.

Potential Phases

Provide one or two years funding at higher required match ratio.

Bicycle Projects

PROJECT: Hawthorne Bridge Sidewalk Widening
SPONSOR: Multnomah County

TECHNICAL RANK: 1st of 4
REQUESTED FUNDS: \$1,755,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
New Riders	2,106	15	15	
Reg. Sys Connect'n	completes	20	20	Current link at capacity; project provides (completes) capacity needed to accomodate added ridership.
Safety (Road Type)	Hi ADT/narrow	10	10	
Safety (Yes/No)	Yes	5	5	
2040 Support	Hi Priority	25	25	Project serves Central City
\$/VMT Avoided	\$23.69	25	25	
TOTAL		100	100	

Project Description

Reconstruct and widen sidewalks on the Hawthorne Bridge main span. Project will relieve severe congestion problem for bicycles and pedestrians and improve safety for both modes. Project will enhance a link for several bikeways from inner neighborhoods to the central city. This project must be coordinated with currently funded \$16 million bridge painting project and proposed \$5.5 million bridge redecking (see reconstruction project descriptions).

2040 Relationship

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Uncertain. Requires coordination with bridge redecking that is currently unfunded.
- *Future Projects:* Cost and schedule relationship to redecking is unclear

Other Relevant Information

Design of redeck, and especially new dead-weight associated with replacement grating must be integrated with calculation of any new dead-weight from added bike lane width.

Potential Phases

Phase 1: Project PE at \$250,000 as a supplement to Redecking PE cost.

Detailed engineering assessment of phasing potential, including consideration of painting, decking, temporary closure of outside lanes, etc., is being prepared.

PROJECT: SW Barbur Boulevard Bicycle Lanes and Sidewalks
SPONSOR: ODOT

TECHNICAL RANK:
REQUESTED FUNDS:

2nd of 4
\$1,440,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
New Riders	1,148	15	15	
Reg. Sys Connect'n	Completes	20	20	
Safety (Road Type)	Hi ADT/narrow	25	10	
Safety (Yes/No)	Yes	5	5	
2040 Support	Hi Priority	25	25	Project links several town centers to central city.
\$/VMT Avoided	\$35.66	13	25	
TOTAL		88	100	

Project Description

Construct bicycle lanes and sidewalks on Barbur Boulevard from SW Hamilton Street to SW Front Street. The project will provide a critical missing link in bicycle and pedestrian access to the Central City from the completed facilities on Capitol Highway, Bertha Blvd, and Beaverton-Hillsdale Highway. No feasible lesser construction phase. High cost associated with construction of a bridge structure.

2040 Relationship

Link to central city

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* No other project provides benefit; connects to other planned improvements

Other Relevant Information

Potential Phases

None.

PROJECT: Walker Road Bikeway Improvement
SPONSOR: Washington County

TECHNICAL RANK:
REQUESTED FUNDS:

3rd of 4
\$296,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max</u> <u>Score</u>	<u>Comments</u>
New Riders	1,246	15	15	
Reg. Sys Connect'n	completes	20	20	Project completes critical link in Washinton County system.
Safety (Road Type)	Hi ADT/narrow	10	10	
Safety (Yes/No)	No	0	5	
2040 Support	Medium	13	25	Project serves Main Street
\$/VMT Avoided	\$6.75	25	25	
TOTAL		83	100	

Project Description

Construct bike lanes on Walker Road from 173rd to 185th Street. The project would complete a bikeway from Cedar Hills to 185th Street and provide access to a town center.

2040 Relationship

Administrative Criteria

- *Overmatch:* 20%; none
- *Multi-jurisdictional financial support:* none
- *Implementable:* yes
- *Future Projects:* none; completes link

Other Relevant Information

Potential Phases

PE only

PROJL : Gateway and Hollywood Bike to Transit
SPONSOR: City of Portland

TECHNICAL RANK:
REQUESTED FUNDS:

4th of 4
\$400,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
New Riders	424	8	15	
Reg. Sys Connect'n	completes	20	20	Provides critical links through the Broadway/Sandy/42nd Ave area.
Safety (Road Type)	Hi ADT/narrow	10	10	
Safety (Yes/No)	Yes	5	5	
2040 Support	Hi Priority	25	25	Project serves Gateway Regional Center (and Hollywood Town Center).
\$/VMT Avoided	\$28.82	13	25	
TOTAL		83	100	

Project Description

Package of five bikeway projects on several streets (NE Tillamook, SE 41st/42nd/NE 39th/37th, SE 52nd/NE 53rd/NE 57th, NE Halsey and/or NE Glisan bike lanes, NE 102nd/Cherry Blossom Dr/SE 112nd bike lanes) providing access to and through Hollywood town center/LRT station and the Gateway regional center. Two projects provide north/south and east/west access in Hollywood; one project serves north/south connection for Gateway.

2040 Relationship

Serves regional center and town center LRT station

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* No

Other Relevant Information

Phases below those proposed are feasible.

Potential Phases

Phase 1: Central City to Hollywood Projects (\$368,000): Tillamook; 41st/42nd. Hollywood access is most immediate need and greatest potential ridership.
Phase 2: Gateway projects (132,000): 102nd/Cherry Blossom/112th; Halsey East from Gateway. Gateway already has relatively adequate bike connections and is the most likely of the two areas to manage leverage of bike/ped improvements in course of buildout.

Pedestrian Projects

PROJECT: SE Woodstock Pedestrian Improvements
SPONSOR: City of Portland

TECHNICAL RANK:
REQUESTED FUNDS:

1st of 6
\$200,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potential	Hi PEF	15	15	
Trip Inducement	Medium	5	10	
Exist'g Safety Risk	Moderate	25	25	Sponsor indicates six ped accidents (1 fatal) 1990-93.
2040 Support	Hi	25	25	Project serves Main Street and Bus Corridor
S/Other Points	Low Cost	15	15	
Multi-Modal	1 other mode aided	5	10	
TOTAL		90	100	

Project Description

Design and construct median islands, curb extensions and other improvements to improve pedestrian access and crossing on SE Woodstock between SE 39th and SE 49th.

2040 Relationship

Project will enhance pedestrian access along a main street and bus corridor.

Administrative Criteria

- *Overmatch:* 20%; none
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Serves retail, elementary school, community center, library.

Potential Phases

PE and/or ROW only.

PROJECT: Hillsdale Pedestrian Improvements - Phase 1
SPONSOR: City of Portland

TECHNICAL RANK :
REQUESTED FUNDS: 2nd of 6
\$520,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potent'l	Hi PEF	15	15	
Trip Inducem'nt	Hi	10	10	
Exist'g Safety Risk	Moderate	25	25	
2040 Support	Hi	25	25	Project serves Hillsdale Town Center
S/Other Points	Hi cost	0	15	Based on 3 phases @ \$1.4 million; Rerank current phase
Multi-Modal	2+ other modes aided	10	10	Proposed phase would improve auto, bike, pedestrian and transit
TOTAL		85	100	

Project Description

Highest priority of 3 phases. Project would realign Sunset Blvd/Capitol Hwy/Wilson High School Driveway intersection and provide a new pedestrian crossing. Five different bus routes also use this intersection as the primary stop in the Hillsdale commercial area.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* 10.27%, none
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Wilson High School is one of three short-list candidates for a bond-funded Swim-Gym complex. If selected, the proposed improvement would integrate with site development for this facility.

Potential Phases

PE only (approx. \$60,000)

PROJECT: Pacific Avenue Pedestrian/Bikeway
SPONSOR: City of Forest Grove

TECHNICAL RANK:
REQUESTED FUNDS:

3rd of 6
\$102,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potential	Hi PEF	15	15	Project serves Forest Grove Town Center.
Trip Inducement	Medium	5	10	
Exist'g Safety Risk	Moderate	13	25	
2040 Support	Hi	25	25	
S/Other Points	Low Cost	15	15	
Multi-Modal	2+ other modes aided	10	10	
TOTAL		83	100	

Project Description

Construct 900 lineal feet of curb, sidewalk and bike lanes along the south side of Pacific Avenue from Hawthorne Street to Quince Street. Project will provide pedestrian access along a main street and bus corridor.

2040 Relationship

Administrative Criteria

- *Overmatch:* 20% uncommitted at this time
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Potential Phases

None identified

PROJECT: Cully Boulevard Bicycle and Pedestrian Improvements
SPONSOR: City of Portland

TECHNICAL RANK:
REQUESTED FUNDS:

4th of 6
\$1,680,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potential	Moderate PEF	8	15	
Trip Inducement	Medium	5	10	
Exist'g Safety Risk	Hi	25	25	4 ped accidents, 1 fatal, between 1990-1993; increase from 13
2040 Support	Hi	25	25	Project serves a 2040 Main Street
S/Other Points	Hi Cost	0	15	
Multi-Modal	2+ other mode aided	10	10	Bike, transit (street is City designated as minor transit street).
TOTAL		73	100	

Project Description

Provide bicycle and pedestrian access on Cully Boulevard from Killingsworth Street to Prescott Street. Project improves access to and within a town center, including a Community Center and middle school.

2040 Relationship

Administrative Criteria

- *Overmatch:* 20%; none
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Area is predominately low income.

Potential Phases

PE phase @ \$500,000. Design and construct 1/2 of project length, or full project on only one side of street @ \$500,000.

PROJECT: Pathway Along A Avenue
SPONSOR: City of Lake Oswego

TECHNICAL RANK: 5th of 6
REQUESTED FUNDS: \$7,200

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potent'l	Hi PEF	15	15	Project serves Lake Oswego Town Center.
Trip Inducem'nt	Medium	5	10	
Exist'g Safety Risk	Moderate	13	25	
2040 Support	Hi	25	25	
S/Other Points	Low Cost	15	15	
Multi-Modal	no other mode aided	0	10	
TOTAL		73	100	

Project Description

Construct a 150 foot pedestrian pathway between 9th and 10th.

2040 Relationship

Administrative Criteria

- *Overmatch:* 20%; none
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* Other projects are identified by the City which would plausibly fund the project.

Other Relevant Information

Potential Phases

None

PROJECT: Springwater Trail Bicycle/Pedestrian Access Improvements (190th Phase)
SPONSOR: City of Gresham

TECHNICAL RANK: 6th of 6
REQUESTED FUNDS: \$204,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Walk Trip Potential	Mod PEF	8	15	
Trip Inducement	Medium	5	10	
Exist'g Safety Risk	Hi	25	25	
2040 Support	Medium	13	25	Phased project serves Inner Neighborhoods.
S/Other Points	Low Cost	15	15	Phased project is hi cost effective
Multi-Modal	1 other mode aided	5	10	
TOTAL		70	100	

Project Description

Construct bike lanes and sidewalk access at the connection of 190th to the Springwater Trail.

2040 Relationship

Gresham Regional Center access to bike route connection to Central City.

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* None
- *Implementable:* Yes
- *Future Projects:* Subsequent phases of proposed project.

Other Relevant Information

Reflects comments of 6/13 delivered at 2:30 p.m.

Potential Phases

Limit to PE and/or ROW.

Freight Projects

PROJECT: N. Columbia Blvd. N. Burgard Intersection
SPONSOR: City of Portland/Port of Portland

TECHNICAL RANK : 1st of 4
REQUESTED FUNDS: \$886,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Improve Connectv'ty	see comments	25	25	completes link; connects to facility; and to freight area
Improves Safety	see comments	10	20	reduces conflict for freight with other modes at intersections
2040 Support	Hi	25	25	Project serves Industrial Sanctuary
\$/VHD Reduced	\$3,786	15	15	Eliminates 4 hours of delay that would otherwise occur.
Multi-Modal		10	10	Aids link of regiona bike system; # 6 bus line
TOTAL		85	100	

Project Description

Reconstruct and signalize intersection of Columbia Boulevard and N. Burgard Street to improve access and increase safety.

2040 Relationship

Administrative Criteria

- *Overmatch:* none
- *Multi-jurisdictional financial support:* City of Portland and Port.
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Reconstruction will tend to divert truck traffic away from St. John's business and residential districts by encouraging truck movement to I-5 via Columbia.

Potential Phases

None identified

PROJECT: Lower Albina Overcrossing (PE)
SPONSOR: City of Portland

TECHNICAL RANK:
REQUESTED FUNDS:

2nd of 4
\$600,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Improve Connectv'ty	see comments	25	25	completes link; connects to facility; and to freight area
Improves Safety	see comments	20	25	reduces conflict for freight with other modes at intersections; fire vehicles twice obstructed.,
2040 Support	Hi	25	25	Project serves Industrial Sanctuary
\$/VHD Reduced	\$NA	8	15	Data incomplete but expected to be cost effective at a medium range at least.
Multi-Modal	aids loc. bike sys	3	10	
TOTAL		81	100	

Project Description

Eliminate a series of at-grade railroad crossings (N. Interstate to N. Lewis/N. Loring/N. Tillamook) within the N. Albina Industrial District adjacent to the Union Pacific Rail Yards. Provide overpass with sidings, and secondary improvements to local streets and N. Interstate. Project is design to eliminate severe restriction of freight movement generated by UP and other district businesses through intersections.

2040 Relationship

Administrative Criteria

- *Overmatch:* 6.73% at 17% proposed match.
- *Multi-jurisdictional financial support:* PUC using fine dollars
- *Implementable:* Yes
- *Future Projects:* UP Yard Upgrade (private expansion) is indicated; N. Yard outlet to No. Going St. Oxing indicated.

Other Relevant Information

VMT delay data provided but not yet integrated; no probable effect of rank but does not accurately capture problem.

Potential Phases

PE is minimum phase.

PROJECT: Columbia/N. Lombard Railroad Overcrossing PE
SPONSOR: City of Portland/Port of Portland

TECHNICAL RANK: 3rd of 4
REQUESTED FUNDS: \$987,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Improve Connectv't'y	see comments	25	25	completes link; connects to facility; and to freight area
Improves Safety	see comments	10	20	reduces conflict for freight with other modes at intersections; addresses hazard.
2040 Support	Hi	25	25	Project serves Industrial Sanctuary
S/VHD Reduced	\$34,090	8	15	Full \$15 million project would eliminates 22 hours of delay that would otherwise occur. Reduction from 15
Multi-Modal	aids reg. bike sys	10	10	# 6 bus route
TOTAL		78	100	

Project Description

Preliminary engineering for overcrossing Columbia Boulevard at N. Lombard to grade separate the facilities. Completed project (\$15 million) would improve truck access in an industrial sanctuary.

2040 Relationship

Administrative Criteria

- *Overmatch:* None
- *Multi-jurisdictional financial support:* Port and City of Portland.
- *Implementable:* Yes
- *Future Projects:* None identified

Other Relevant Information

Potential Phases

PE is minimum phase.

PROJECT: N/NE Columbia Boulevard Improvements
SPONSOR: City of Portland/Port of Portland

TECHNICAL RANK: 4th of 4
REQUESTED FUNDS: \$250,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Improve Connectivity	see comments	25	25	completes link; connects to facility; and to freight area
Improves Safety	see comments	10	20	reduces conflict for freight with other modes at intersections
2040 Support	Hi	25	25	Project serves Industrial Sanctuary
S/VHD Reduced	\$3,786	15	15	Eliminates 4 hours of delay that would otherwise occur.
Multi-Modal		0	10	
TOTAL		75	100	

Project Description

Signal interconnection system on Columbia Boulevard from Rivergate to I-5 (\$100,000) and preliminary engineering for most promising alternatives for rail overcrossing and linkage of Columbia to US 30(B) (Lombard/Killingsworth) to replace current mess at 92nd/Killingsworth/Columbia.

2040 Relationship

Project will improve freight traffic flow in an industrial sanctuary

Administrative Criteria

- *Overmatch:* none; interconnection may be eligible for 100% federal funding.
- *Multi-jurisdictional financial support:* Port and City of Portland
- *Implementable:* Yes
- *Future Projects:* PE to accomplish rail overcrossing and smoother Columbia/US 30 transition.

Other Relevant Information

Potential Phases

None identified

TRANSIT PROJECTS

PROJL : Gresham Civic LRT Station
SPONSOR: Tri-Met

TECHNICAL RANK: 1st of 1
REQUESTED FUNDS: \$1,500,000

<u>Criteria</u>	<u>Data</u>	<u>Score</u>	<u>Max Score</u>	<u>Comments</u>
Board'g Delta (2015-'90)	2,063	30	25	1990 boardings of 0; 2000 = 1,218; 2015 = 2,063
2040 Support	Hi	25	25	Project serves Regional Center
\$/VHT Reduced	\$4.95	20	20	Project eliminates est. 15,163 VMT.
Multi-Modal	Hi	25	25	aids bike/walk/transit
TOTAL		100	100	

Project Description

Construct LRT station in the Gresham Civic Neighborhood. Received 100 points as only technically ranked transit project.

2040 Relationship

See above

Administrative Criteria

- *Overmatch:* none
- *Multi-jurisdictional financial support:* None
- *Implementable:* PS&E by 1998 uncertain. It is unclear whether economic development by 1998 will be sufficient to support boardings in excess of the lowest station ridership (553 boarding average weekday at 173rd Station in 1994). Current regional funding for construction of a station unable to demonstrate ridership better than the lowest performing station is inappropriate.
- *Future Projects:* helps to leverage other elements of Gresham Civic Neighborhood TOD development.

Other Relevant Information

Tri-Met has stated that if regional funds are allocated to implement this project, Tri-Met will fund improvement of Milikan Way TOD improvements (\$2.48 million original proposal). This LRT station is projected to have higher ridership by 2015 than any other of the east-side MAX stations.

Potential Phases

PE?

STUDIES

Metro Transportation Planning		1,029,000
Fund Metro Regional Transportation Planning activities including:		
* Meeting ISTEA/Rule 12 mandates	\$525,000	consists of \$325K Reg STP; \$100K ODOT STP; \$100K local dues replacement
* Commodity flow modelling	220,000	FY 97 increment
* General technical assistance	75,000	FY 97 increment
* Westside Station Area Planning	209,000	FY 97 increment
 ODOT I-5/Hwy 217 Subarea Transportation Plan		 60,000
Continue to develop a regional subarea plan to address transportation needs at the I-5/217 Interchange. Cost share to be determined.		
 Cornelius Tualatin Valley Highway Corridor Enhancement		 60,000
(4th Avenue to 26th Avenue) Enhance traffic control and circulation.		
 Clackamette Cove Master Plan		 60,000
This site was identified in the Tier 1 Final Recommendation Report as a regionally significant area for TOD development. The proposal is to fund the plan to develop the entire lagoon area known as the "Clackamette Cove."		
 Tri-Met Transit Finance Task Force		 400,000
Establish a blue-ribbon task force to review plans for transit expansion, assess performance of the existing system, measure community attitudes, examine options for new funding and prepare a package of recommendations with public input.		

**FY 1996
Metropolitan
Transportation
Improvement Program**

**\$27 Million
Regional Reserve**

**Region 2040
Implementation Fund**

Comments

June 21 – June 28, 1995



METRO

**\$27 Million Regional Reserve – Region 2040 Implementation Fund
1996 Metropolitan Transportation Improvement Program**

This document provides a compilation of comments received from June 21, 1995 through June 28, 1995 on the Metro/ODOT staff recommendation for allocation of the Region 2040 Implementation Fund. The document is divided into 4 sections:

Comments Index – An alphabetical index of all comments received follows this cover page.

Public Hearing Testimony – This section includes the minutes from oral testimony and all written testimony submitted at the June 28 public hearing held jointly by the Metro Council and the Joint Policy Advisory Committee on Transportation (JPACT), pages 1 – 40.

Transportation Hotline Comments – A transcription of comments called into the Metro's Transportation Hotline – (503) 797-1900, pages 41 – 42.

Written Comments – Copies of all letters or documents submitted into the record during the comment period are included, pages 43 – 50.

Comments Index

Achenbach, Lois	1, 16
Alegria, Pamela	12
Architectural Foundation of Oregon	34
Bailey, Jim	8
Baker, Ken	6
Bauer, Linda	10
Beaverton Chamber of Commerce	30
Beck, Chris	7
Bell, David	1
Benson, Amy	42
Bicycle Transportation Alliance	48
Briggs, Nancy	9
Browning, Rick	9
Christiansen, Stan	11
City of Portland Bicycle Advisory Comm.	22
Columbia Corridor Assoc.	14
Culbertson, Lloyd	4
Donovan, Don	5
Edge, Mary	23
Eichentopf, Gretchen	9
Eykamp, Chris	11
Foresythe, Karla	9
Fox, Mel	41
Frost Mecey, Karen	7
Fry, Peter	12
Giller, Chip	42
Gillham, Jerry	3
Greiner, John	8
Groce, Barry	6
Guichard, Marc	10, 29
Hatfield, Senator Mark	20
Hubson, Wally	5
Iams, Robert	5
Klotz, Douglas	6
Kopka, Chris	11
Kracke, Ann	41
Kragero, Ryan	3

Kyte, Randy	3
Lambertson, Paul	9
Lent, Gerri Sue	10, 27
Lessler, Brian	4
Lewellen, Art	42
Madson, Gary	5
McAdam, Kimberly	41
McInelly, Marcy	8
McKillip, Mike	7
McRobert, Gussie	2
Millar, Roger	2
Moore, Terry	45
Mossman, Sharon	41
Mower, Jay	11, 24
Muse, Shannon	41
Nickel, Anne	1
Novotny, Jerry	8
O'Halloran, Sue	4
Pak, Carrie	46
Petrusich, Dan	10
Piacentini, Frank	5
Raddon, Grant	12
Reber, Mark	6
Richardson, Kip	8
River District Assoc.	21
Rock Creek Community Assoc.	43
Rossi, Paulette	2
Runyan, Brian	7
Schumann, Ken	9
Shaw, Laurie	41
Talbot, David	42
Talbot, Max	3, 18
Thompkins, Mary	41
Tiley, David	6, 36
Ukalov, Lana	41
Uris, Charlotte	12
Washington County	47
Whitman, Richard	11
Windell, Phillip	10
Wrench, Chris	44

Section One

Public Hearing Testimony

June 28, 1995.

PUBLIC HEARING

Resolution No. 95-2175 for the purpose of amending the FY 95
Transportation Improvement Program to Allocate \$27 Million of
Region 2040 Implementation Funds.

Andy Cotugno, Director of Planning of the Metro Council, presented the Metro staff recommendations in consideration of Resolution No. 95-2175.

Deputy Presiding Officer Rod Monroe opened a public hearing on Resolution No. 95-2175.

1. Anne Nickel, Columbia Corridor Association, PO Box 55651, Portland, OR 97238, ph. 287-8686, appeared to speak **in favor of the recommendation to provide 2040 funding for freight mobility projects in the Columbia Corridor, including the N. Columbia/Lombard intersection improvement and the Columbia Blvd. signal inter-tie and engineering studies, but in opposition to the decision not to recommend for funding the N. Lombard rail overcrossing**, because this project is critical to the build-out of the Rivergate industrial area. The rail crossing is needed because: There is currently one rail crossing of N. Lombard serving industrial users at the Terminal 5 complex. A second rail line, paid for by the railroad and connecting North and South Rivergate, will tie directly into the existing rail line at N. Lombard within the next 18 months--creating two at-grade crossings within several hundred feet of each other. This will create blockages and delays that adversely affect not only rail service to T-5, but truck access to and from Rivergate. CCA urges the council to fund the P/E for the overcrossing, giving the City and Port to put together the public-private partnerships necessary to fund the over \$13.0 million in capital cost to build the overcrossing itself. Written testimony is including in the meeting record in the form of a letter from Deanne Funk, President of the CCA.
2. David Bell, G&L Properties, 2164 S.W. Park Place, Portland OR 97205, ph. 224-2554, appeared to speak **in favor of the recommendation to fund the Transit Oriented Development (TOD) Implementation Program**, because it is important to the realization of the vital goals of the 2040 plan: it begins forming the type of public/private partnerships that will be necessary.
3. Lois Achenbach, Regional Transportation Plan Citizens Advisory Committee, 2005 NE 46th Ave., Portland 97213, ph. 281-0063, appeared to speak **against the Resolution**, because it perpetuates inequities suffered by pedestrian and bicycle modes of transportation. The Metro Council needs to establish specific goals regarding alternative modes and to direct its

planners on how these are to be accomplished. On-the ground improvements to bikes, peds, and transit only come to \$2.4 million--far less than the \$7.2 million required; the balance "is hidden transit- oriented development, transit studies, TDM's etc." Written testimony is included in the meeting record.

4. Paulette Rossi, 3710 NE 147, Portland, Or. 97230, appeared to speak **in opposition to the recommendation not to fund the Gatewood Bike Access Improvements project and in opposition to the recommendation not to fund the Hollywood Bike Access Improvements project.** The projects would allow and encourage people like her, not currently bike users because of the distance of their commute to downtown Portland, to ride to the Hollywood transit station and take Max or buses the rest of the way.
5. Roger Millar, River District Steering Committee and River District Association, 17355 S.W. Boones Ferry Rd., Lake Oswego, Or. 97232, ph. 699-2448, appeared to speak **in favor of the recommendation to provide funding for the preliminary engineering of the Lovejoy Ramp Replacement,** because the project is a key element needed to facilitate desired housing densities and the concentration of neighborhood retail uses. In addition, it is essential for the construction and operation of the Central City Streetcar, which is the primary transit project association with this district. In turn, the project will help meet regional goals by reducing trip miles per capita, increasing transit usage, and improving air quality. In spite of the capital cost, the project does contribute significantly to reducing VMT per capita-- despite low score on this area-- due to short nature of trips in the district. Written testimony included in the minutes record in the form of a letter from Donald Magnusen, Member of River District Steering Committee. Also would like to express **support for the Front Avenue Multi-Modal Path project,** because it enhances a significant multi-modal North South connection into the River District, it complements the improvements we're proposing to Front Avenue within the district, and it is supportive of the housing development goals at Union Station and Terminal One.
6. Gussie McRobert, Mayor of Gresham, ph. 669-3000, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** The Gresham project as a whole has very strong community support from the City Council, private developers and citizens. Marketing and financial feasibility studies show that this will work-- but only with some public investment, because the small block size increases the infrastructure cost by 40 percent. The city of Gresham takes exception to the project's "local" designation, because it is a major project within a regional center under the 2040 plan; it will help clean up a regional airshed; it has unique elements not being done elsewhere; it meets all criteria under 2040; its

density will be increased by the city's provision of a city-only property tax abatement; it meets all the transportation planning rule criteria; its parking ratios have been decreased and a parking study is underway; two developers are already committed to it; and, it can be the laboratory model of a successful regional center project.

7. Max Talbot, City of Gresham, 1333 NW Eastman Pkwy, Gresham, Or, 97030, ph. 669-2662, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** Since the location of the light rail station is the central focus of the plan, the City of Gresham requests Metro support for both of the identified projects for the Civic Neighborhood Plan. It should be funded as a regional project for these reasons: it will allow high density development; it would implement the 2040 and put the regional center on the ground; it is truly a public-private partnership; and it would be a demonstration project for the region. The project is ready to go; Metro support would close the financial gap and make the project feasible. Written testimony is included in the meeting minutes in the form of a memo from Talbot to JPACT members.
8. Randy Kyte, Windmar Co. Inc., 700 5th Ave, Seattle, WA 98103, ph. 206-223-6294, to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** Private developers cannot reasonably be expected to bear the burden of high costs of pedestrian and transit-oriented improvements. National developers are interested in taking part in developing this site because of 1) its connection to the light rail with on-site station; 2), pedestrian-orientation of the village concept; 3) city tax abatement; 4) lack of available sites that meet this criteria. Tracks are there, plan and zoning are set, consensus has been achieved; we are ready to go as soon as funding issue is resolved.
9. Ryan Kragero, Northwest Gresham Neighborhood Association, Gresham, Or, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** Citizen involvement in the plan is extensive; residents are ready to see something happen; the two projects will benefit everyone.
10. Jerry Gillham, Gresham Area Chamber of Commerce, 150 W. Powell, Gresham Or., 97030, ph. 665-1131, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** LRT should be funded because: 1) The

project is regional--tremendous new growth in East Multnomah County; new people coming in from outside area to use transit stations. 2) Of the opportunity it creates. Truly public/private partnership. Metro shouldn't try cover every corner of the map-- stick to projects like this that have regional impact and are ready to go.

11. Sue O'Halloran, Gresham Downtown Development Association, Gresham, OR, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition of the decision not to recommend funding for the Gresham Light Rail Transit Station.** Strong support from the business community for both projects. The two equally valuable components of the civic neighborhood plan components-- will connect business activities of East and West sides of Gresham, maximize other transit-oriented projects in the offer, and offer housing alternatives, adding greater vitality to area. Also speaking **to urge full funding support to the of the Gresham Regional Center Transportation Demand Management Association.** This three-year program is a critical piece in coordinating the downtown and civic neighborhoods' marketing and transit issues and making the whole plan work well.
12. Brian Lessler, Citizen, Gresham, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station.** The Civic Plan including both projects allows quality growth while reducing congestion; maximizes investment in existing transportation infrastructure; provides compatible and inter-connected multiple uses and product types; integrates high density residential with quality and liveability; provides and integrates multi-modes of transportation; provides a stable neighborhood environment; provides connected-news to surrounding neighborhoods and historical retail district. Station can't be put off.
13. Lloyd Culbertson, Gresham Transportation Citizen Advisory Committee, 2905 S.E. Palquist #51, Gresham, OR 97080, ph. 661-7777, appeared to speak **in favor of the recommendation to fund the North South Collector Street Project but in opposition to the decision not to recommend funding for the Gresham Light Rail Transit Station, and in favor of the Springwater Corridor Access project.** Pointed out that the LRT scored 100 percent on the Metro 2040 criteria. Funding both projects will pay large dividends for both regional and national efforts to show that transit and land use can work together for better communities. Written testimony in the form of letter signed by Mark Hatfield, United States Senator. In accordance with 2040 goal #12, This TOD will reduce residential auto trips by 10 percent, office trips by 30 percent, and retail trips by 35 percent, over the previous shopping center designation.

14. Robert Iams, Citizen, 1615 SE Foster Rd., Portland, OR 97236, ph. 666-1288, appeared to speak **in opposition to the decision not to fund the Foster Road Improvement project.** Iams sees two definite projects here: Jenne Rd, then 162nd; Jenne Rd is the priority. Jenne Rd has become hub of traffic that leaves I205 and comes to Gresham-- in evening, it has become impossible to make a left turn off of Jenne Road on to Foster outbound towards Damascus because of the constant flow of traffic outbound from Portland. If the project cannot be funded in totality, at least the light at Jenne road should be: all of the school buses from Centennial that service Pleasant Valley school have to go through this intersection; developments are planned bringing hundreds of new houses into immediate area.
15. Wally Hubson, Hubson Johnson & Associates Real Estate Economist, 610 S.W. Alder, Suite 910, Portland, Or 97212, ph. 226-6616, appeared to speak **in favor of the recommendation to fund the Metro TOD Implementation Program.** TODs symbolize much of what the 2040 plan is all about: high density, mixed development, suburban locations concentrated around a non-auto transportation hub. Private sector cannot do these projects alone; without public involvement and support, the projects just won't happen. Urges Metro to allocate more than the 3 million--not enough.
16. Gary Madson, Lower Albina Industrial Council, 931 N. River St., Portland, OR 97227, ph. 288-5175, appeared to speak **in favor of the recommendation to fund the Albina Railroad Overcrossing,** because the district has a major problem: the increased railroad activity is choking it to death. All of the five surface crossings that access the area get closed by train activates-- a conservative estimate is that we are blocked off from access 4 to 5 hours a day. Very dangerous when emergency vehicles cannot get through-- people have drowned in river while emergency vehicles wait on other side of crossing.
17. Don Donovan, K.F. Jacobsen Co., P.P. Box 82545, Portland, Or 97201, ph. 239-5532, appeared to speak **in favor of the recommendation to fund the Albina Railroad Overcrossing,** because as a major asphalt producer, our vital operations are extremely hindered by train crossings. The delays cause prices go up, penalizing the community. We are vital to the whole metro area, and we are not an industry that can pick up and move to a new area; we depend on the river for shipping supplies in and products out. Safety also an issue; employees get hurt and ambulances can't get through. We need the overcrossing to continue our industrial activity.
- 18.
19. Frank Piacentini, Piacentini Mortgage, the Loyalty Bldg, P.O. Box 2622, Portland, OR 97218, ph. 225-1533, appeared to speak **in favor of the recommendation to fund the Metro TOD Implementation Program,** because any such projects along the

light rail line are going to need public/private partnership, and the revolving nature of TOD really can serve that well.

20. Ken Baker, State Senator from North Clackamas County, 10121 S.E. Sunnyside Rd., Clackamas, OR 97015, ph. 652-2587, appeared to speak **in favor of the recommendation to fund the Sunnyside Road Widening Project**, because the area is expected to undergo a 5 percent increase in population and traffic in the next 10-20 years, the area is in the area for the next urban growth boundary expansion under consideration. As well as widening the road, the project will give Sunnyside the right of way for a high corridor capacity light rail transit--this is part of the 2040 plan.

21. David Tiley, North Clackamas Coalition, 8820 S.E. 162nd Ave., Portland, OR 97236, appeared to speak in **opposition to the decision not to fund the Foster Road Improvement project**, because the major traffic impact on the intersections comes and will continue to come from outside the Urban Growth Boundary, and project area residents and services are finding themselves subject to extreme and increasing bottle-neck. The two-lane, winding character of Foster road does not make it a good candidate for continued arterial access to or from the growing regions on either side of the UGB. The intersection is dangerous. Using multi-modal transportation is not a consideration because TriMet does not and will not serve the area in it's current design. The \$600,000 in funding now requested is a portion of the total funding needed, but it would act as the foundation for acceptable, smaller versions that would include multi-modal facilities. Written testimony is provided in the minutes of the meeting.

22. Berry Groce, representing Union Pacific Railroad, law firm of McEwen, Gisvold et al., 110 S.W. 6th Ave., Suite 1600, Portland, 97204, appeared to speak **in favor of the recommendation to fund the Albina Railroad Overcrossing**. Union Pacific Railroad will be one of the direct beneficiaries of the growth expected in the River District-- expects business to increase 30 percent in next 30 to 40 years; unfortunately, that means a 30 percent increase in rail blockages denying access to businesses in that area. Area is vital to Portland and this project is necessary to keep it vital.

23. Mark Reber, Citizen, 1922 N.E. 13th, Portland, OR 97212, ph.331-1882, appearing **in favor of recommendation to fund Metro TOD Implementation Program**. Living in Irvington neighborhood, everything is within easy walking distance or bus ride. Knows the benefits of TOD, and has seen the shortcomings where it isn't in effect. Program should be funded for 4.5 million, not 3 million.

24. Douglas Klotz, Willamette Pedestrian Coalition and Portland Pedestrian Citizen Advisory Committee, 2630 S.E. 43rd Ave.,

Portland, OR 97206, ph. 223-9161, appeared to speak in favor of the recommendation to fund the Gresham North-South Collector project, in opposition to the recommendation not to fund the Gresham Light Rail Transit Station, and in opposition to the Front Avenue Reconstruction project. Believes that more money should be spent on pedestrian projects; less money given to roadway construction and expansion, and that projects should have been ranked on VMT reduction and not Vehicle Hours of Delay. Front Avenue Reconstruction Project should be eliminated from funding until it can be re-designed to include bike lanes on the street in addition to sidewalk for pedestrians, so that bikers and walkers are not competing for space.

25. Brian Runyan, Bicycle Transportation Alliance, 2933 S.E. 25th, Portland OR 97202, ph. 230-2886, appeared to speak in opposition to the recommendation not to fund the Hawthorne Bike Lanes project, because of the importance of funding bicycle-oriented improvements. Dismayed that the on-ground amount is so much less than mandated amount.
26. Karen Frost Mecey, Bicycle Transportation Alliance, P.O.Box 9072, Portland, OR 97207, ph. 226-0676, appeared in favor of the recommendation to fund the Barbur Boulevard Bike Lane project, in opposition to the recommendation not to fund the Hawthorne Bikes Lanes project and other bike ground-improvement projects, and in opposition to the recommendation to fund the Front Avenue Reconstruction without an on-street bike lane separate from a pedestrian sidewalk, because there are citizens who are trying to meet the ideals espoused in the 2040, but Metro must meet them halfway: they must make it easy to choose biking and walking. The projects currently designated will make it easier to choose to drive, not bike or walk. It was hypocritical that bike projects were judged by how much reduction of vehicle miles, but roadway projects were judged on how much they could increase auto capacity.
27. Mike McKillip, City of Tualatin, appeared to speak in favor of the recommendation to fund the 99W/Tualatin Rd, Intersection Realignment (Ph 1), because we have already obtained right-of way; this project provides access into the industrial sanctuary at the Western part of the city; it is the last link of several projects that have already been funded by the city, the county's MSTIP program and ODOT that will create a link between I-5 and 99; and, it does include bike lanes and pedestrian facilities, as do all the other projects that have been planned on this connection through the city.
28. Chris Beck, Trust for the Public Land, 1211 S.W. 6th Ave., Portland, OR 97204, appeared to speak in favor of the recommendation to fund the Metro TOD Implementation Program, in agreement with earlier testimony.

29. Kip Richardson, Architectural Foundation of Oregon, appeared **to speak in favor of the recommendation to fund the Metro TOD Implementation Program**, specifically the regional revolving fund, because it is vital to Metro's implementation of the 2040 vision, for two reasons: 1), effective TOD implementation tools do not exist, and the Revolving Fund provides the missing piece; and 2), it provides a positive, proactive implementation tool which can be used early in the region's efforts to lay the groundwork for implementing 2040, before the ability to influence development patterns is diminished as fragmented development occurs. Written testimony included in meeting record in the form of a letter from, George Crandall, President of the AFO.
30. Marcy McInelly, Portland chapter of American Institute of Architects Urban Design Committee, 315 S.W. 4th Ave., Portland, OR 97201, ph. 297-8117, appeared to speak **in favor of the recommendation to fund the Metro TOD Revolving Fund Proposal and the Site Improvement Fund Proposal**, because if the region is to experience transit-supportive development, the public sector must take the initiative in the assembly of land parcels around the transit stations. The revolving funds will ensure that development patterns and density support the substantial public investment in transit. We are disappointed in the decrease in funding from \$7 million-- we urge support at full amount.
31. John Greiner, City of Cornelius, P.O. Box 607, Cornelius, OR 97113, appeared to speak **in opposition to the recommendation not to fund the ODOT ATMS Arterial Signal Optimization on TV Highway**, because the community is dying due to problems with the highway. Pedestrians can't cross the highway because there are no signals, and no businesses want to locate there because there is no access. Cornelius can't get arterial funds because it is a state highway, and the city needs more than the state TGM can give.
32. Jerry Novotny, Gresham Parks and Recreation Advisory Committee, 2109 S.W. Hartley, Gresham, OR 97080, ph. 666-0803, appeared to speak **in favor of the recommendation to fund the Springwater Corridor Access project**, because the trail has proved to be very popular, and it is important to provide safe and easy access to it.
33. Jim Bailed, Intermodal Transportation Council, 1834 S.W. Collins Ct., Portland, OR 97219, ph. 251-2215, appeared to speak **in favor of the recommendation to fund the Lombard Railroad Overcrossing project**, because it could prevent another Albina overcrossing debate if done appropriately now; because the Rivergate region has over 2,000 acres of undeveloped land, a business opportunity for the city; and because it helps access to our regional international trade advantages. Freight doesn't have alternatives to other modes of transportation--

reliance on freeway, rail, flight and water transportation systems will not disappear.

34. Rick Browning, Portland Bicycle Advisory Committee, 1903, 1903 NW 27, Portland, OR 97210, ph. 223-3082, appeared to speak **against the passing of the Resolution** because there is only one bicycle improvement project; only 5 percent of the money is going toward bike projects and similar split for pedestrian projects. The bicycle projects on the list were all excellent projects; Metro needs to put some back on the list.
35. Paul Lambertsen, 4804 S.E. Woodstock, Portland, OR 97206, appeared to speak **in favor of the recommendation to fund the Woodstock Pedestrian Improvements project**, because the intersection is dangerous to pedestrians. Written testimony from a citizen injured while crossing Woodstock is included as part of the written testimony.
36. Nancy Briggs, Beaverton Area Chamber of Commerce, P.O. Box 4755, Beaverton, OR 97076, ph. 644-0123, appeared to speak **in favor of the recommendation to fund the Mill Street/Henry Avenue Improvements** because the funding will help develop a grid street system and provide access to allow development of City-owned property-- critically important first steps to create a transit-supportive downtown that meets long-term local and regional planning goals. Written testimony included in meeting minutes.
37. Ken Schumann, Downtown Task Force of Beaverton Area Chamber of Commerce, appeared to speak **in favor of the recommendation to fund the Mill Street/Henry Avenue Improvements**, because the project is critical to the re-development of downtown Beaverton, an area which is targeted for significant change under the 2040 plan. We have to get the transportation system fixed before we will be able to realize the community's vision of a vibrant core connected by light rail; the success of West side light rail and the economic vitality of the region depend on it. Written testimony in the form of a letter signed by Briggs, Karl Foresythe, Executive Vice President of the BACC and 28 Beaverton citizens and business owners.
38. Karla Foresythe, Beaverton Area Chamber of Commerce, appeared to speak **in favor of the recommendation to fund the Mill Street/Henry Avenue Improvements**, because it is a model 2040 project.
39. Gretchen Eichentopf, Woodstock Community Business Association, 4138 S.E. Woodstock, Portland, OR 97202, appeared to speak **in favor the recommendation to fund the Woodstock Pedestrian Improvements**, because being able to cross it safely is critical for the successful future of the village center. Kids, elderly, customers all need to be able to cross.

40. Phillip Windell, Woodstock Neighborhood Plan Steering Committee, 4215 S.E. Mitchell, Portland, OR, 977206, **in favor the recommendation to fund the Woodstock Pedestrian Improvements**, because it will help the community develop and maintain our vibrancy as a inner city neighborhood, to which people come to as a destination, not just pass through on their way from the suburbs to work. We have a vital business district there that will die if we cannot get people from one side of the street to the other.
41. Marc Guichard, X-PAC (Grass root organization politically organizing Generation X), P.O. Box 14102, Portland OR 97214, to speak **in favor of recommendation to fund the Metro TOD implementation plan, and in opposition to the recommendation not to fund the Gresham LTR Transit Station**, because both are necessary to Metro's vision of curbing urban sprawl, which requires re-focusing the economic forces that drive it. X- PAC agrees with the 4/25/95 Oregonian editorial that scattering the \$27 million being discussed under this Resolution will only have modest impact. X-PAC urges Metro to take at least 25 percent of the money currently allocated for traditional road construction and expansion projects and re-allocate it to TOD implementation and the Gresham LTR.
42. Linda Bauer, P.V.NA. 6232 S.E. 158, appeared to speak **in opposition to the recommendation not to fund the Foster Road Improvement Project**, in agreement with David S. Tiley's earlier testimony.
43. Gerrie Sue Lent, Bike Transportation Alliance, 1834 Spokane St., Portland, OR 97202, ph. 231-7553, appeared to speak **against the Resolution** because with it, Metro underscores its commitment to the automobile, not other modes of transportation. Urges Metro to delete all highway projects from the budget, and re-allocate the money to 1) pedestrian projects, 2) bicycle projects, and 3) changing the traveling habits of young people. Written testimony is included as part of the meeting record.
44. Dan Petrusich, Melvin Mark Development Company, 111 S.W. Columbia Street Suite 1380, Portland, OR 97201, ph. 223-4777, appeared to speak **in opposition to the recommendation not to fund the Water Avenue Extension Project**, because it is critical to the continued infield development of the Central Eastside District and has city- wide benefits, including access to OMSI and the new PCC training center together along with Waterfront access and improvements. **The business community requests that you re-consider funding the project under a lesser amount totalling \$950,000**, which the business community will match by funding the remaining 70 percent cost of the project.

45. Chris Kopka, TPAC, appeared to speak **in favor of the recommendation to fund the Front Avenue Reconstruction/Bike Lane project**, because it meets all four modes, serves a regional role, and makes good use of the money. As for the issue brought up several times tonight, that the project calls for a bike path as opposed to a bike lane: it is a prudent solution in tough fiscal times. Making a full bike lane on Front Avenue would require re-building Front Avenue.
46. Chris Eykamp, 2101 S.E. Tibbetts, Portland, OR 97202, appeared to speak **against the Resolution**, because the projects recommended would hinder, and not help, the region meet its goals of liveability in face of rapidly growing urban population. Road improvements won't help, but improvements to the bicycle network and pedestrian environment would.
47. Stan Christiansen, Westridge Construction, 1697 S.W. Stephenson, Portland, OR 97219, ph.245-1424, appeared to speak **in favor of the Metro TOD Implementation Program**, because as a developer in the midst of a project on the Gresham light rail line, he can attest that such projects will not go forward without both public and private support.
48. Richard Whitman, Ball, Janik and Novack representing HWG, Inc., 101 S.W. Main St., Suite 1100, appeared to speak **in opposition the recommendation not to fund the Foster Road Improvement project**. Would like to point out that the project ranks fairly low on technical scoring for two reasons the volume-capacity ratio used in the scoring is from 1990, and studies from this year show that it is currently over capacity already. 2) Scored low in multi-modal opportunities. But HWG is planning to make bicycle and pedestrian improvements to 162nd, the designated ped/bike street in the area Low in multi-modal capacities. The Foster Improvement Project would provide a signalized intersection to allow bicycle and pedestrian access to the Springwater trail, where currently there is none. As a developer they are doing their part; they urge Metro to consider funding a smaller amount for this project with some share from the private development community.
49. Jay Mower, Hillsdale Vision Group, 6327 S.W. Capitol Highway #105, Portland, OR 97201, appeared to speak **in favor of the recommendation to fund the Hillsdale Pedestrian Improvements project**, because it will begin a series of improvements that will transform a strip commercial center into a town center, consistent with the 2040 vision; and **in opposition to the recommendation to fund the Sunnyside Road Widening project** because it is inconsistent with 2040 goals and an inappropriate use of funding. Instead, Metro should use the \$5 million to fund other pedestrian projects and increase the Hillsdale project funding by \$200,000. Written testimony and drawing illustrating the planned improvements are included as part of the meeting record.

50. Grant S. Raddon, BTA, ICA, TPAC, 2806 NE 11th, Portland, OR 97212, ph. 288-0064, speaking **against passing the Resolution** because more money should be allocated to bicycle improvements, because people who would like to bike are terrified to attempt the commute.
51. Pamela Alegria, Willamette Pedestrian Coalition, 3750 S.E. Henry, Portland, 97202, 771- 7258, appeared to speak **in favor of the recommendation to fund the Woodstock Pedestrian Improvements project and in favor of the recommendation to fund the Hillsdale Project**, because they are both very dangerous areas for bus passengers and other pedestrians to cross, and the planned projects would help them begin to reach the 2040 goals of being pedestrian areas and town centers. However, the Coalition is **disappointed in the Resolution's allotment to pedestrian infrastructure**, because the mode that is the most funded will continue to be the most dominant.
52. Charlotte Uris, Irvington Community Association and the Broadway/Weidler Corridor Coalition, 2526 NE 10th, Portland, OR 97212, ph. 287-5915, appeared to speak **in opposition to the recommendation not to fund the Broadway/Weidler TOD project** because the corridor is multi-modal, heavily used and subject to high growth; it serves as major gateway to the central city of Portland and the North Border of the Lloyd District, which is a regional attractor; it is a pedestrian-oriented main street which serves as buffer between the high density area to the south and medium-to-low residential area to the north; and it connects to two freeways. The project is needed to enhance safety and convenience to pedestrians, transit users and bicyclists and prevent the area from becoming residential neighborhood separated from shopping area by freeway.
53. Peter Fry, Central East Side Industrial Council, 722 S.W. 2nd, #330, Portland, OR 97204, ph. 274-2744, appeared to speak **in favor of the recommendation to fund the Hawthorne Bridge Deck project**, because it is important not only to the District but as an East-West link between SE neighborhoods and the Central Business District; and **asks that the Wyatt extension project be recommended for funding**, Points out that the criteria is biased, especially congestion criteria; obviously no congestion on the Water Avenue extension because it doesn't exist. The extension would alleviate congestion on the nearby streets of MLK, Grand, Division, Clay, etc; therefore the ranking of 0 should be ignored in favor of other surrogate measurements such as filling in gaps in your network. The structure of the political process in place makes it difficult for Metro to achieve its larger goals; if you look at the big picture, you will see that you are actually enhancing the forces of sprawl instead of reversing it.

END OF PUBLIC TESTIMONY

The meeting was adjourned at 9:50 p.m.

Prepared by, Lisa Post.



COLUMBIA CORRIDOR

ASSOCIATION

June 28, 1995

Mike Burton
Executive Director
METRO
600 NE Grand Ave.
Portland, OR 97232

re: Region 2040 Implementation Fund Regional Reserve

Dear Mr. Burton;

The Columbia Corridor Association (CCA) represents businesses and property owners in the 16 mile long Columbia Corridor. The Corridor is home to the Port's Marine terminals and international airport, it is at the hub of the region's intermodal transportation complex, and it is, as a result, the *regional center for wholesale trade, goods movement, and transportation services. Nearly 60,000 people work in the Corridor.*

CCA is very pleased with the recommendation to provide 2040 implementation funding for freight mobility projects in the Columbia Corridor, including the N Columbia/Lombard intersection improvement and the Columbia Blvd. signal inter-tie and engineering studies. We are disappointed however, that the N. Lombard rail overcrossing was not recommended for 2040 funding.

CCA urges the Council to consider *full funding for all the projects on the regional freight mobility short list including P/E for the N Lombard overcrossing.* Approximately \$900,000 has been requested to complete preliminary engineering for the N Lombard rail overcrossing. This project is critical to the build-out of the Rivergate industrial area.

The intersection improvements that are recommended for funding at N. Columbia and Burgard- immediately south of the overcrossing (as seen in the aerial photograph attached) is merely one important piece of a *complex infrastructure investment strategy* to provide adequate rail service as well as surface transportation linkages that will allow the Rivergate complex to be fully developed.

There is currently one rail crossing of N. Lombard serving industrial users, Columbia Grain and Oregon Steel Mills, among others, at the Terminal 5 complex. A second rail line, paid for by the railroad, and connecting north and south Rivergate will tie directly into the existing rail line at N. Lombard within the next 18 months- (indicated in yellow on the aerial photo). This will create two at-grade crossings within several hundred feet of each other creating ample opportunity for blockages and delays that adversely affect not only rail service to T-5, but truck access to and from Rivergate.

By funding this project the Region is putting scarce transportation dollars to exceptionally good use. This is because the investment will create significant, and almost immediate payback to our economy in the form of job creation.

Funding the P/E for the overcrossing will give the City and Port an excellent chance to "shop" the project, that is, to put together the public-private partnerships necessary to fund the over \$13.0 million in capital cost to build the overcrossing itself.

Finally, Rivergate is one of the fastest growing industrial developments on the West coast- representing the competitive advantage offered by the Port of Portland's location, availability of serviced land and excellent customer shipper service. By committing the requested \$900,000 to the N Lombard overcrossing, Metro can help this region continue to capitalize on this significant, rapidly expanding market sector and leverage considerable return to the community in the form of private investment and jobs.

CCA urges METRO to put scarce dollars for transportation improvements in places that leverage additional resources and that provide a "pay-back" to the community. Funding the preliminary engineering of the N Lombard rail overcrossing will do both.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Deane Funk', written over the word 'Sincerely,'.

Deane Funk
President
CCA

COMMENT REGARDING METRO RESOLUTION 95-2176

June 28, 1995

I serve on Metro's Regional Transportation Plan Citizens Advisory Committee, representing the residents of Portland.

My comments will address the inequities to be suffered by pedestrian and bicycle modes should Resolution 95-2176 be approved by Metro Council.

Metro, in its 2040 Goals, and local governments within its boundaries voice a future of multi-modal arterials leading to pedestrian-friendly town and regional centers. Of 17,000 Metro survey responses, the number two concern, which incidentally had to be written in by the respondents, was improved walking and biking opportunities. The Metro Council needs to establish specific goals regarding alternative modes and to direct its planners on how these goals are to be accomplished.

We cannot continue doing the business of government in the same old ways. Metro is a regional government and should think regionally—not pitting local politicians against each other for a share of the money. The resolution currently being considered has succumbed to that very type of thinking. The voting public has said repeatedly that it is disgusted with waste and politics as usual. Metro should be advancing regional goals in its planning and funding decisions.

The process for choosing the projects to be recommended for funding is hardly without flaw. TPAC in collaboration with Metro staff established the criteria by which the projects would be judged. Thus they were able to ensure the inclusion of their own requests for money on the recommended list.

As to the modal split, "alternative modes are to receive no less than \$7.19 million of the full account." Yet, on-the-ground improvements to bikes, peds, and transit only equal \$2,455,000. The balance of the minimum amount of money to be spent on alternative modes (\$4,735,000—or twice what is spent on actual improvements) is hidden in transit-oriented development, transit studies, TDM's, etc.

Suburban communities continue to build cul-de-sacs and gated communities that encourage single-occupancy vehicle use and make it impossible for fast, direct mass transit. The current recommendations remind me of attempts to treat illicit drug addiction. Do we give drug addicts more cocaine and heroin to cure them? No, we do not. Neither should we encourage more SOV miles by making it easy to drive and difficult to bike or walk to access mass transit. We need sidewalks completed and bike lanes striped.

If under TPAC's direction all modes must receive funding, then each geo-political area should be required to spend a portion of their money on alternate modes. Many bike and ped projects cost only a small fraction of road construction. Put the money where your goals are!



Lois Achenbach
2005 N. E. 46th Avenue
Portland, Oregon 97213-2007
(503) 281-0063

Testimony supporting Portland's "Gateway and Hollywood Bicycle-to-Transit" Project
Metro June 28, 1995 7:00 pm

Paulette Rossi, 3710 NE 147, Portland, OR 97230 phone 253-6303

To construct bicycle lanes and bicycle boulevards is an engineering feat. But to envision a bicycle route people will use is a creative destination.

A spring 1994 Bicycle Facility Preference Survey carried out by the City of Portland's Bicycle Program found 88% of the respondents would cycle more often for daily trips if a good network of bicycle transportation facilities was established. (Research presented in "Bicycle Master Plan Phase One Report, June 1994)

Portland's proposed "Gateway and Hollywood Bicycle-to-Transit" project entices people like me who are not now bicycle commuters.

Lacking the energy to cycle from my MidCounty home to downtown Portland and lacking the experience to cycle far in darkness or bad weather Portland's proposed project would allow me to ride to the Gateway or Hollywood Transit stations where I could park my bike or bring it on a bus or Max train.

The \$400,000, 25 mile bike project supports Metro's adopted Region 2040 Growth Concept by providing a safe and convenient bike route that would improve mass transit ridership. Non-vehicular access to Gateway which Metro's 2040 Plan identifies as a Regional Center and Hollywood identified as a Town Center also would be enhanced.

If the "Gateway and Hollywood Bicycle-to-Transit" project with its Halsey street bicycle lanes is funded Portland can do well to meet Oregon's Transportation Planning rule requiring a reduction in vehicle miles traveled per capita by 20% over the next 30 years and decreasing per capita parking spaces by 10% in the next 20 years.

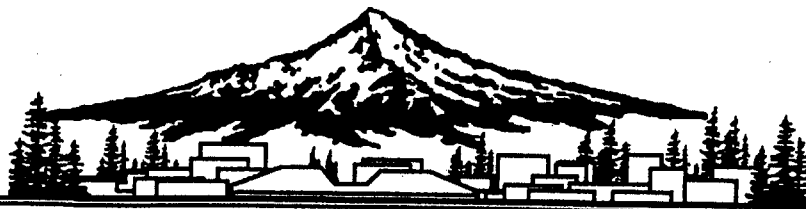
For MidCounty residents Halsey is where babies are born at Woodland Park Hospital, students are taught at Phagans School of Beauty, diners are tantalized by International cuisine, shoppers are enticed by Albertsons, Safeway and Fred Meyer, recreationalists are conditioned at Metro's Glendoveer Golf Course and the dead are remembered at Little Chapel of the Chimes.

Since most auto trips to work, school or shopping are under five miles the bicycle becomes a valid transportation option for MidCounty residents whose neighborhoods lack commercial services.

Funding for bicycle friendly projects motivates people to bike not drive. As the Proverbs (4:7) state, "Determination to be wise is the first step toward becoming wise."

Metro's Future Vision Commission found that unless we alter our habits our population growth "...will continue to degrade natural systems." (page 3 Future Vision Report March 4, 1995)

Biking allows for efficient and economical movement of people while controlling air pollution, traffic and livability problems. As Thomas Edison said, "Genius is one per cent inspiration and ninety-nine per cent perspiration."



June 28, 1995

MEMORANDUM

*Community Development Department
City of Gresham*

TO: JPACT Members

From: Max Talbot, Community Development Director

RE: 2040 Growth Concept Implementation

At the May 10th MPAC meeting Mayor Gussie McRobert raised the issue of relating 2040 transportation grants to efforts to comply with the 2040 Growth Concept. This was not an agenda item and no formal vote was taken but there was general agreement that during the eighteen month planning process, which led to the approval of the Metro 2040 Growth Concept, that compliance with the Concept would be a requirement to receive transportation funding.

In the spirit of showing that the City of Gresham is committed to complying with the Metro 2040 Growth Concept staff has prepared a summary of the city's efforts:

Gresham Downtown Plan

The recently adopted Downtown Plan covers the area that has been designated as **Regional Center** and the new development standards reflect many of the goals and objectives of the 2040 Growth Concept. This Plan:

- coordinates land uses with the transportation system by encouraging intensive mixed-use developments close to light rail stations. Housing near the LRT stations will be at densities up to 60 units per acre and densities of 30 units an acre furthest from the stations but within the downtown planning area. The overall residential density average will be 60 units per acre for the area.
- encourages a wide variety of higher density housing types. Close to transit will be higher density apartments while medium - high density housing, as well as some town houses, are permitted.
- extends key streets into a grid system to enhance pedestrian and vehicular circulation.
- mixed use developments are encouraged. The one amended and all five new land use downtown land use districts will now permit mixed use developments (commercial: office, clinics retail, etc.; multi-family housing).
- includes a "town square" to serve as a focal point and provides for pocket parks to serve downtown residents.

Gresham Civic Neighborhood Plan

The Gresham Civic Neighborhood Plan has been strongly supported by the business community, neighborhood associations, the Planning Commission and Council. This plan was developed as a result of a public/private partnership. It creates a mixed-use plan for this 130-acre site that shares the downtown's **Regional Center** designation. This Plan is designed to demonstrate one principle of the 2040 Concept Plan that the development of mixed uses at relatively high densities is not only feasible, but can offer advantages not found in conventional suburban developments. The Plan does this by:

- application of flexible and specialized land use standards to take full advantage of multi-modal options unique to the site.
- replacing exiting land use designations with higher density opportunities for this portion of the Regional Center.

Parking Standards Study

This project is designed to take a hard look at the city's parking standards for new development. There will be an analysis of the current parking space requirements for uses to see if the city is consistent with new national standards. The city is committed to reducing the number of parking spaces for land uses while proposing parking ratios that won't adversely affect the economic viability of businesses or result in spill-over of parking onto adjacent residential streets. The city will explore the establishment of parking space maximums for uses. It is anticipated that with future mixed use developments and improvements in transit, bicycle and pedestrian facilities we will be able to show future businesses that the overall number of parking spaces can be reduced without impacting their bottom line. However, instead of just setting parking space lids for on-site parking the city will explore different incentives that can be offered businesses to reduce on-site parking.

United States Senate

WASHINGTON, DC 20510-3701

June 27, 1995

The Honorable Gussie McRobert
Mayor, City of Gresham
1333 NW Eastman Parkway
Gresham, Oregon 97030

Dear Gussie:

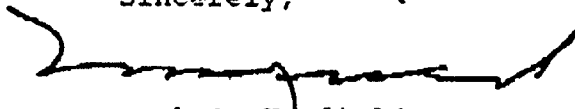
I am pleased to hear of Gresham's adoption of the Civic Neighborhood Plan on the former Project Breakeven site. The City's bold new plan, together with the new Gresham Civic Center project, is a jewel in the crown for the Eastside light rail. I know that the City, Winmar Company, Tri-Met and many citizens have worked hard to develop this new vision for appropriate development of the Eastside's most important suburban demonstration site.

I understand the METRO Council will soon allocate regional ISTEA funds for projects that support the Region 2040 Plan. The Civic Neighborhood collector street and transit station are certainly worthy of this timely investment of scarce regional funds. These projects will, I believe, pay large dividends for both regional and national efforts to show that transit and land use can work together for better communities.

I commend the perseverance of those involved in developing the best plans for this key site.

With best regards.

Sincerely,



Mark O. Hatfield
United States Senator

MOH:aw

River District Association

Pursuing a 20-year Vision for Portland

Roger L. Breezley
Chair

June 28, 1995

Robert Ames
Secretary

Donald W. Magnusen
Treasurer

Jim L. Edwards

John Eskildsen

Marshall Glickman

Greg Goodman

Ken L. Harrison

Paul Hathaway

Clayton Hering

Charles Lenard

V. S. Naito

Cheryl D. Perrin

Michael Powell

Patrick R. Prendergast

Robert L. Ridgley

James Sanger

Mike Thorne

Ronald E. Timpe

Tom Walsh

Homer G. Williams

Ted Winnowski

Mr. Andrew Cotugno
Metro Transportation Planning
600 NE Grand Avenue
Portland, OR 97232

RE: 2040 Implementation Fund
Lovejoy Ramp Replacement - River District Implementation Strategy

Dear Mr. Cotugno:

On behalf of the River District Steering Committee, I would like to express our appreciation for the Metro/ODOT staff recommendation for funding of the preliminary engineering of the Lovejoy Ramp Replacement.

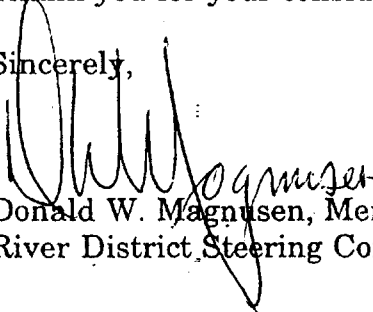
As we have indicated in other written comments and personal testimony, this project is one of the key elements needed to facilitate both the desired housing densities in the River District and the concentration of neighborhood retail uses so important to this new community.

Additionally, the project is essential for the construction and operation of the Central City Streetcar, which is the primary transit project associated with the River District.

The benefits, however, are not just local in nature. Increasing the housing stock in the Central City at medium and high densities in such close proximity to jobs will help meet regional goals from the perspective of reducing trip miles per capita, increasing transit usage and improving air quality. We urge Metro to fund this effort.

Thank you for your consideration.

Sincerely,


Donald W. Magnusen, Member
River District Steering Committee

Roger Shiels
Executive Director

115 N.W. First Avenue
Portland, OR 97209
(503) 42-0084
fax) 299-6769



**CITY of PORTLAND
BICYCLE ADVISORY COMMITTEE**
1120 S.W. 5th Avenue, Room 730
Portland, Oregon 97204
(503) 823-7083

June 28, 1995

Metro Council
Metro Regional Center
600 NE Grand Avenue
Portland, Oregon 97232

RE: 2040 Implementation Program
Bicycle Projects

Dear Council Members:

As former chair of the City of Portland's Bicycle Advisory Committee, I am writing on behalf of the committee to encourage your support of four particular bicycle projects being considered for funding as part of the 2040 Implementation Program. The specific projects we support are:

- MB1 Multnomah County: Hawthorne Bridge Sidewalk Widening
- WB1 Washington County: Walker Road Bikeway Improvement Plan
- PB1 City of Portland: Gateway and Hollywood Bike to Transit
- OB6 ODOT: SW Barbur Boulevard Bicycle Lanes and Sidewalks

All of these projects are important parts of the growing network of bike facilities in the region. If we are to have a chance of meeting the ambitious goals for mode share, it is essential to continue to support projects of these types. Providing safe direct routes is the best encouragement to potential riders. The number of bicycle commuters has increased significantly as people discover how easy it is. This money will be well spent and in the long run will pay significant dividends in our effort to decrease the number of autos on the road.

Thank you for your consideration.

Yours truly,

A handwritten signature in black ink, appearing to read "Ronald G. Kernan".

Ronald G. Kernan

cc: Mia Burke, *Bike Advisory Committee*
Rick Browning, *Browning Shono Architects*

June 26, 1995

Dear Sir or to whom it may concern,

This is a request for a crossing at 49th & Woodstock, as there is a library on the corner of 49th & Woodstock. Also several people cross there on the way to the Look Look Center where senior & disabled cross to eat their main meal of which I am one.

Being a victim of an accident at 46th & Woodstock on an evening when it was damp and darkening as it was in the autumn. The doctor tells me "I am lucky to be alive".

Traffic is very heavy on Woodstock because some main thoroughfare cross it & with elderly crossing at 49th & Woodstock & others. it would be helpful to have a signal or at least a special crosswalk.

Sincerely,

Mary Edge (Edge)

[lives on S.E. 49th - 1/2 block S. of Woodstock]

Submitted by Paul Lundquist, 4804 SE Woodstock

97206

Date: June 28, 1995

To: JPACT and Metro Council joint meeting for public testimony

From: Jay Mower, Hillsdale Vision Group

6327 SW Capitol Highway, #105 Portland 97201

Re: Support of Hillsdale Pedestrian Improvements in \$27 million
Regional Reserve Fund

Good evening Metro Council and JPACT members. My name is Jay Mower. I live and work in Southwest Portland. I appreciate the opportunity to be a part of this process.

Speaking about Portland, Vice President Al Gore is quoted in today's *Oregonian* as saying, "There is no more appropriate city in the entire United States of America in which to have a meeting about the future."

at the same time

That is quite a compliment, and it is quite a challenge.

^

Speaking of challenges, today's Willamette Week quotes author James Kunstler who was in town about a week ago. After a tour of our area he said, "I went down plenty of ghastly boulevards that were no different than the worst stuff in Florida, California and New Jersey. . . . If you build the same kind of crap that we've been building all over America, you're going to reduce the quality of life here. . . . The future is going to require us to do things differently. . . . We [currently] subsidize about 90 percent of the real cost of using cars It's bankrupting us."

Kunstler continued, "The most obvious thing the casual observer can detect is the abysmal quality of the stuff that is being built right now within the Urban Growth Boundary. . . . You need to bring the same level of excellence to the suburbs that you brought to the city of Portland. You can mandate that any new growth must adhere to higher standards of design and building. You have all that knowledge right in Portland. The question is, whether you have the will."

I am here to testify in support of the Resolution before you, (95-2176) and the list of recommended projects contained in Exhibit A. In particular, I support the Phase I pedestrian improvements for Hillsdale. On the whole, the list is a balanced attempt to allocate the \$27 million regional reserve fund.

I object, however, to one particular project. To me, spending \$5 million to widen a one mile section of East Sunnyside Road seems inconsistent with 2040 goals and an inappropriate use of these funds. Instead, I recommend using that \$5 million to fund other pedestrian projects and increase the Hillsdale allocation by \$200K more.

Tonight I speak for hundreds of people who are involved in creating a master plan for the Hillsdale neighborhood in Southwest Portland. The only reason I am here alone is because tonight is one of our community planning workshops. All my fellow citizens are at the workshop.

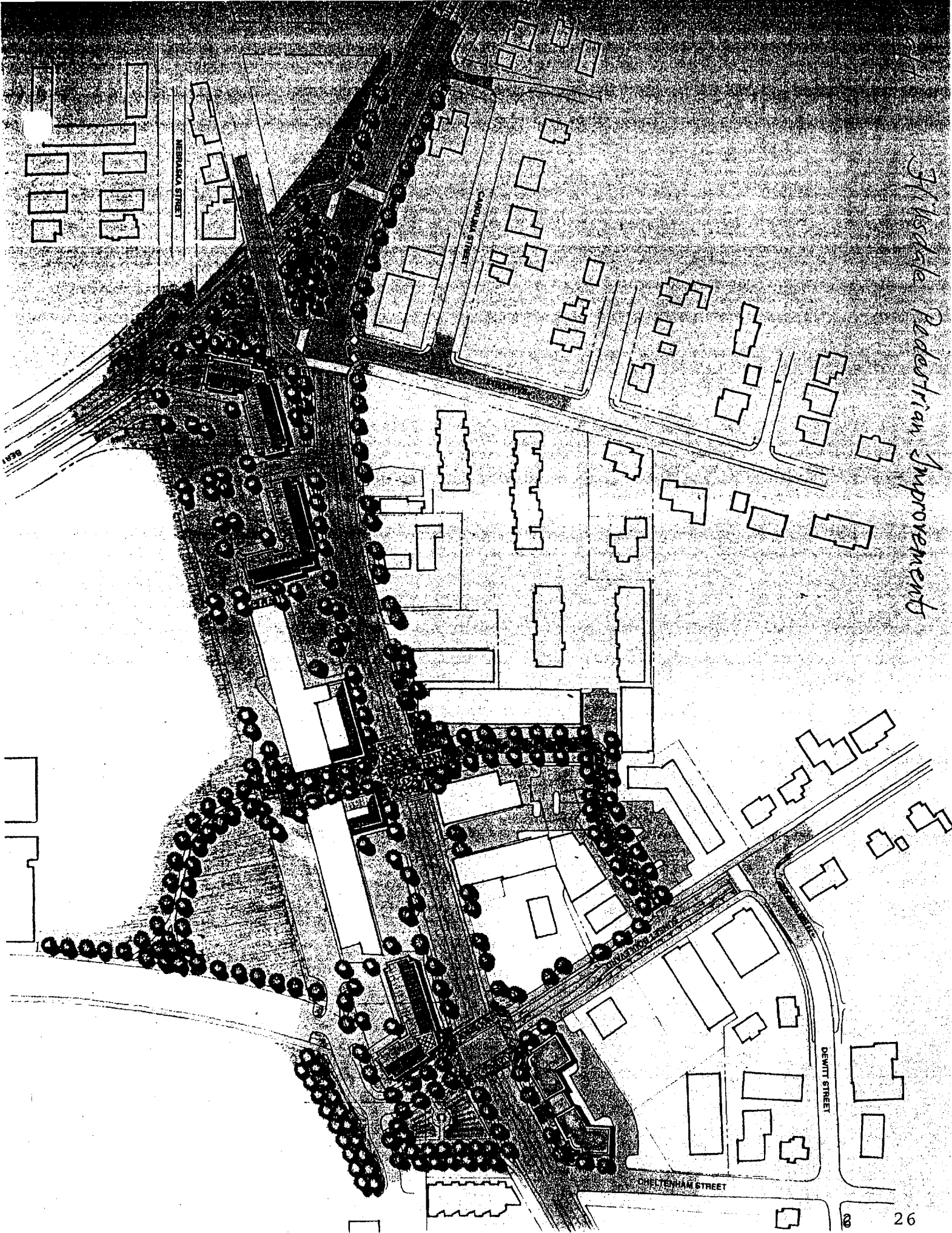
By now you should have received a ~~set of~~ drawings that illustrate the kinds of public and private improvements planned for Hillsdale. I wanted you to see this because the dollars you allocate for Hillsdale will begin these improvements. Hillsdale is challenged by 24,000 vehicles per day.

The grass-roots effort to transform Hillsdale began in April 1993. It has been a collaborative process throughout. The Hillsdale Specific Development Plan, which is nearing completion, has strong support from throughout the community - residents, property owners, business operators, the City of Portland, Metro and even the State. All these stakeholders are working together as partners as we seek to transform a strip commercial center into a town center. We are doing this voluntarily. Nobody asked us. We simply want to build a better Hillsdale. We think it's possible.

I urge you to fund the Hillsdale Town Center pedestrian improvements. It is well deserved, extremely needed, and it will advance Region 2040. Thank you very much for your support.

I also urge support of the Metro TOD Revolving Fund and the Woodstock pedestrian improvements.

Millsdale Pedestrian Improvements



My name is Gerri Sue Lent. I live at 1834 S.E. Spokane in Portland. I'm here, tonight, in my capacity as a member of the Bicycle Transportation Alliance -- the BTA.

I am concerned about the proposed allocation of funding. Roadway projects are receiving the bulk of funds. The Region has an opportunity^{NEW} to speak out for clean air and for transportation options -- Instead, with this proposal the Region underscores its commitment to the automobile.

It is no commitment to bicyclists, to pedestrians, and to transit users to widen and widen highways, to create slicker interchanges, and to mechanize the flow of automobiles. Why are you even considering highway projects?

The regular highway budgeting process takes into account necessary highway projects. Why do you want to throw more money into that highway pot? The money you are considering spending was left-over from highway planning.

Here is an opportunity for vision. Here is an opportunity to speak clearly for a NEW and CLEANER future. I suggest that you erase the highway projects from this budget. You will not irreparably damage your highway system: it has already been planned.

By deleting highway projects from this budget, you will only be widening your transportation options. Variety is more than the spice of life: it is also the meat and potatoes.

I want you to change your focus. I urge you to limit your spending to first, pedestrian projects. Finish the Broadway-Weidler couplet study, for example. Put down walkways in East

County. Second, spend money on improving bicycle transportation. We need safe storage for our bicycles in Portland, in Beaverton, in Gresham, in Hillsboro.

Lastly, spend money on changing the travelling habits of our young people. Give them a signal that travelling by something other than a car is important!

Life's path in this Region depends upon your vision. Not just 20-40. 20-20 is enough: spend your extra money today on pedestrian and bicycle improvements -- you'll never have a better chance.

Thank you.

X-PAC

an action committee for the next political generation

June 28, 1995

Council:

I come before you this evening representing X-PAC, a grass roots organization politically organizing Generation X. X-PAC members envision a vigorous regional economy and diverse communities. We believe in responsible urban growth.

Thus, we enthusiastically support your vision that our Region grow up not out. Unfortunately, this growth concept is the antithesis of Sprawl, the region's predominate growth pattern of the last forty years. Stopping Sprawl requires refocussing the economic forces that drive it and achieving this --with a mere \$27 million--is a tall order.

The Oregonian, in its April 24th "Developing the right way" editorial asserted that scattering this money will "have only modest impact on transportation and do nothing to change marketplace thinking." X-PAC concurs and encourages you to make bold decisions as you allocate these 2040 implementation funds.

In fact, X-PAC strongly urges you to take at least 25% of money currently allocated for traditional road expansion & construction projects and reallocated it to your proposed TOD Implementation program.

Why? Because the TOD Implementation Program will employ time honored joint development tools to combine two essential components of the 2040 Growth Concept: density in Regional Centers, Town Centers and Station Areas, and design elements that are pedestrian scaled, and support transit use, and foster community.

Just about two months ago, Metro co-hosted a symposium called the "The economics of mid-rise housing and TOD's." Both the podium and the audience were well represented by public and private development interests, and the majority of the day was spent going through financial analyses of real projects. The undeniable conclusion with which one left this symposium was that density and high-quality design near transit cannot be achieved with public dollars.

With all due respect Council, it's time to walk your talk. Put money into you vision . Fund the TOD Implementation Program for more than \$3 million.

Marc Guichard, Chair
X-PAC Policy & Research Committee



4800 S.W. Griffith Dr., Suite 100
Beaverton, Oregon 97005-8721
503-644-0123
Fax 503-526-0349

RESOLUTION

The Board of Directors of the Beaverton Area Chamber of Commerce strongly endorses a request by the City of Beaverton for funding of the Mill Avenue/Henry Street Connection Project.

For many years, a Chamber priority has been the creation of a strong downtown identity for Beaverton, including a vibrant business district, increased residential and commercial density, a civic component such as a park or a plaza, and efficient traffic circulation. With the construction of two light rail stations in the core area, and with the regional center designation under Metro's Region 2040 planning process, the time is ripe to make this vision a reality.

The City's funding request will help develop a grid street system, as well as provide access to allow development of City-owned property. The Board believes these are critically important first steps to create a transit-supportive downtown which meets long-term local and regional planning goals. The Board urges that support for this project be followed by a regional funding commitment to other projects which will create a grid street system in the core Beaverton area.

6-28-95
DATE

Nancy Briggs
NANCY BRIGGS, PRESIDENT

BEAVERTON AREA CHAMBER OF COMMERCE

1995 BOARD OF DIRECTORS

JERRY ARNOLD
Interlink Consulting Inc.
4380 SW Laurelwood Ave.
Portland OR 97225
292-3091 Fax: 297-2350

STEVE CLARK ('94 Past Pres.)
Times Publications, Inc.
P.O. Box 370
Beaverton OR 97075
684-0360 Fax: 620-3433

DORANN RIEMER
Barbara Sue Seal Prop.
4103 SW Mercantile Dr.
Lake Oswego OR 97035
241-5505 Fax: 635-4495

BETTY ATTEBERRY
Sunset Corridor Assn
15455 NW Greenbrier #210
Beaverton OR 97006
645-4410 Fax: 614-8421

PAUL DeBAST
Adams DeBast & Helzer
4500 SW Hall Blvd
Beaverton OR 97005
644-2146 Fax: 646-2227

MARLENE ROBERTS
First Interstate Bank
P.O. Box 6045
Portland OR 97228
620-8100 Fax: 620-3301

LEROY BENTLEY
GTE Northwest
P.O. Box 1100
Beaverton OR 97075
629-2411 Fax: 629-9173

RON DeLUDE
Western Bank
12655 SW Center, #500
Beaverton OR 97005
520-6844 Fax: 520-6854

KEN SCHUMANN ('96 Pres elect)
Pacific University
2043 College Way
Forest Grove OR 97116
357-6151 Fax: 359-2209

NANCY BRIGGS (President)
Century 21/Wright-Christie
1803 NE Cornell Rd.
Hillsboro OR 97124
640-3761 Fax: 693-0686
Pager: 790-0991

TIM ESTES
The Greenwood Inn
10700 SW Allen Blvd.
Beaverton OR 97008
643-7444 Fax: 626-4553

Ex Officio Members:

ROB DRAKE, Mayor
City of Beaverton
P.O. Box 4755
Beaverton OR 97076
526-2481 Fax: 526-2571

EVERARDO CALDERON
Azteca Mexican Rest.
10505 SW Bvtn Hsdl Hwy
Beaverton OR 97005
643-8269 Fax: 643-8188

CAROL KERSLEY
Precision Graphics of OR
8770 SW Burnham Rd.
Tigard OR 97223
684-1526 Fax: 620-5803

YVONNE KATZ, Supt
Beaverton School Dist 48
16550 SW Merlo
Beaverton OR 97006
591-8000 Fax: 591-4415

LANDA CARLSON
McDonald's
9475 SW Bvtn-Hillsdale
Beaverton OR 97005
643-1628 Fax: 644-7504

MICHAEL LEWELLEN
Nike, Inc.
One Bowerman Drive
Beaverton OR 97005
671-6453 Fax: 671-6300
DD, VM 671-3314

Treasurer:

MIKE SWINK
Rugged, Inc.
P.O. Box 298
Hubbard OR 97032
981-5127 Fax: 982-4822



4800 S.W. Griffith Dr., Suite 100
Beaverton, Oregon 97005-8721
503-644-0123
Fax 503-526-0349

MEMORANDUM

TO: Metro Council
Joint Policy Advisory Committee on Transportation (JPACT)

FROM: Beaverton Area Chamber of Commerce - Downtown Task Force

SUBJ: Beaverton Project for Region 2040 Implementation Fund

DATE: June 28, 1995

The Downtown Task Force of the Beaverton Area Chamber of Commerce, comprised of the businesses listed on the attached page, enthusiastically supports funding approval for the Mill Avenue/Henry Street Connection Project.

The task force convened several months ago to become an active partner in plans to redevelop Beaverton's downtown and to make real the community's long-held vision of a vibrant core connected by light rail stations. Support for the Mill/Henry project is a key component.

For many years the Chamber has participated in efforts to give context and form to Beaverton's downtown vision. A grid street system is the critical first step. The city property surrounding Beaverton Central Station also is pivotal. We urge funding of this project to bring about an important link to the grid system and to provide access that will allow development of the city property.

Additionally, we urge the region's funding commitment to other projects which will create a grid in downtown Beaverton. Transit ridership, the success of Westside light rail, and the long-term economic vitality of our community all depend on it.

Please let us know if we can provide further information.

A handwritten signature in cursive script, reading "Nancy Briggs".

Nancy Briggs
1995 Chamber President

A handwritten signature in cursive script, reading "Karla Forsythe".

Karla Forsythe
Executive Vice President

BEAVERTON AREA CHAMBER OF COMMERCE
Downtown Beaverton Task Force
June 1995

Rod Adams (Adams DeBast Helzer McFarland & Richardson)
Michelle Baker (WestOne Bank)
Greg Bravo (B.C. Ziegler)
Lois Bennett (Raleigh Studios)
Nancy Briggs (Century 21 Wright Christie)
Kathy Canfield (Bank of America, Washington Square)
Paul Hagadorn (Your Imprint Here)
Cal Hamreus (Architect)
Mike Houston (Adams Temporaries)
Gerald Haynes (Secure Corp. Security Services)
Vicky Reyes (Bank of America, Beaverton Main Branch)
Dick Savinar (Morris Travel)
Ken Schumann (Pacific University)

Staff: Karla Forsythe, Executive Vice President
Beaverton Area Chamber of Commerce

Architectural Foundation of Oregon

950 Lloyd Center, Box 44
Portland, Oregon 97232
Phone/Fax: (503) 287-8296

June 28, 1995

Metro Council
600 NE Grand Avenue
Portland, OR 97232-2736

Subject: Metro TOD Implementation Program

Dear Metro Council Members:

The Architectural Foundation of Oregon (AFO) is here to talk about Metro's TOD implementation program, specifically the Regional Revolving Fund which the Architectural Foundation of Oregon believes is vital to Metro's implementation of the Region 2040 Vision.

Board of Directors

President
George Randall, FAIA
Vice President
Gene Brockmeyer, AIA
Secretary
Carl Sherwood, AIA
Treasurer
Robert D. Geddes

The AFO enthusiastically supports this program because it will be an effective tool in supporting Metro's 2040 Vision.

Over the last 24 months AFO members have been involved in developing TOD plans for some of Tri-Met's westside stations. They have found that it is very difficult to apply TOD design principles to station areas because of:

Directors

William L. Fletcher, FAIA
Robert Packard, Assoc. AIA
Roger Shiels, AIA
Alan Costic, AIA
Selwyn Bingham
Helen Williams
Richard Alexander
Eloise MacMurray
Robert Murase, ASLA
Harriet Sherburne
Joachim Grube, FAIA
David Straus, AIA
William Hart, AIA
Lorraine Baxler
Paul Magnusson

- 1) Fragmented land ownerships and
- 2) Reluctance by many developers to build the needed TOD housing products and densities, and pedestrian-friendly streets.

The Regional Revolving Fund responds to these issues by:

- 1) Creating the mechanism to assemble land adjacent to transit stations so that TOD design principles can be applied in a comprehensive and effective way.
- 2) Providing a vehicle for critical TOD sites to be sold to developers willing and able to build the needed TOD products and densities.

President
Wayne Drinkward

Executive Director
Jo Ann (Jody) Proppe, Hon. AIA

Of all of the projects you are considering, this is the one with the most potential for promoting your 2040 Vision. When the AFO first testified during the 6-year transportation program update, the TOD allocation was \$15,000,000. It was later resubmitted for the 2040 Reserve Fund at \$7,000,000. The next time the AFO testified, the allocation had been cut to \$4.5 million, and now the recommendation is \$3,000,000. This rock bottom number limits your ability to influence regional growth patterns in a significant way. In the TOD development game, the \$3,000,000 allocation makes you a minor league player when a major league effort is required.

In summary, the AFO asks you to strictly evaluate all recommended projects and programs in terms of how they promote your 2040 Vision. We consider the Regional Revolving Fund key in Metro's ability to implement 2040 because:

- 1) Effective TOD implementation tools do not exist. The Regional Revolving Fund provides the missing piece--an effective implementation program.
- 2) It provides a positive, proactive implementation tool which can be used early in the region's efforts to lay the groundwork for implementing 2040. For example, the ability to influence development patterns around transit stations is seriously diminished over time as stations are built and fragmented development occurs.

The AFO urges you to increase the funding level back to \$7,000,000 which we believe is a program minimum. We believe it will be Metro's best investment in promoting the 2040 Vision.

Sincerely,



George M. Crandall, FAIA
President, Architectural Foundation of Oregon

Copies: Kip Richardson
Jody Proppe

J:\151995\COR\GMC12

June 28, 1995

To: Metro Council and
Joint Policy Advisory Committee on Transportation (JPACT)

RE: Approval of Foster Road Improvement (Re-Alignment) Project Funding - \$600,000.

Dear Metro Councilors and JPACT Members,

My name is David S. Tiley -

I live in unincorporated Clackamas County, on S.E. 162nd.

I'm here to testify about amending the list of Road Expansion projects identified as "recommended" and to include Foster Road Improvement Project also as "recommended", in this round of funding.

I'm the organizing Chair for the North Clackamas Coalition of Community Planning Organizations and Neighborhood Associations which include to-date, Boring, Clackamas, Damascus, (we believe, Grant Park), Happy Valley, Pleasant Valley, Rock Creek, Sunnyside United Neighbors and Southwest (Gresham).

Our member jurisdictions expect to be represented on the upcoming Damascus Urban Reserve Study Task Force and deal with the limited possibilities for arterial transportation in and through our region. We ask that Metro utilize our Coalition as a significant avenue of communication, information and public involvement from and to our region.

This group represents the region that produces the current bulk of traffic and transportation through the Foster road "Improvement" Project arterial. This region will also produce the future volume and substantial pressures on transportation, as growth in our region accelerates. The major traffic impact on the Foster Road Improvement Project intersections currently, and well into the foreseeable future, comes from outside the UGB. Project area residents and services are increasingly finding themselves subject to an ever closing bottle-neck, caused by expanding growth on both sides of the UGB.

Traffic counts on Foster will only increase and the narrow, two lane winding character of this road does not make it a good candidate for continued arterial access to this growing region or from this growing region.

I ask that The Metro Council and The Joint Policy Advisory Committee on Transportation think about a Foster Road "Improvement" Project as a region's arterial growth project as well as a city's arterial intersection(s) project, both perspectives pointed in the right direction.

In some ways I appreciate that we were moved on the current "short list", from the City of Portland's heading to the East Multnomah County's heading, if only to be seen from a more inclusive perspective; However, it's confusing for some living inside City of Portland limits and the UGB as to why it was moved.

Foster Road is a major arterial for East Multnomah County, North Clackamas County, the entire Damascus Urban Reserve Area and the Mount Hood Corridor; The project intersection of Jenne Road also serves heavy traffic flow between Gresham and Clackamas Town Center.

Foster Road Re-Alignment Project in its entirety, 136th S.E. - east to the City of Portland's boundary, would use up about half of Metro's current \$27,000,000.00 budget, if completed as planned.

Only a segment of the overall project was submitted to Metro and only a fragmented version of that project segment survived to be actually pulled on board.

From what I've been able to understand, this small, \$600,000. version had not even been planned, it was only a guesstimate. At that time, we identified that the original lower ranking was in error and we initiated strong public support to make the correction, for this (or any) "planned" version.

How surprised I was to find out that our \$600,000 version needed to be prepared after-the-fact; The fact being that this unplanned version was now on JPACT'S "short list", going back to TPACT.

A project has been designed and publicly presented by the City of Portland, at a Pleasant Valley Neighborhood Association meeting. A project whose elements now are not designed for future planning and does not coordinate with the Foster Road Re-Alignment Project, as presented by the City's, 147th to Jenne Road Plan. The project was down-graded so far as to lower our ranking points from 68 to 63; Certainly not our vision of how we thought it was designed and now, how it should be designed.

The project, as planned, should effect immediate relief for the collectors of 162nd S.E. and Jenne Road but be incomplete regarding site distance from 162nd to Jenne Road. This would be an additional cost of \$430,000., without re-alignment.

The City of Portland has relayed to us that the time-line for construction of this smaller version with Metro funding could take up to one and one-half years after receiving funding. However, the UGB could be moved this year and the door would then be opened for development sooner than the commencement of construction for this "improvement" project.

If Metro moves the UGB at Foster & Jenne, eastward, then Metro must be prepared to provide a solution of how to fund the entire Foster Road Re-Alignment Project, 147th to Jenne, which is said to be about \$10,000,000., not including the 136th to 147th segment.

One certainly could not expect to wait on developers to incrementally fund a project of this size. It would become so fragmented that this section of Foster Road would be in perpetual construction phase throughout the life of the 2040 plan.

On top of this, a new concept of Town Centers for the Damascus Urban Reserve has relocated the "Pleasant Valley Town Center from Clackamas County to Multnomah County, right up against the Project site. Does this make Annexation more appealing? Will Portland find it more appealing to fund the entire project, someday?

We have a problem now! People are getting hurt now! People are dying now!

We don't even have the luxury or opportunity of considering, let alone using, multi-modal transportation because that's been taken away from us by this down-graded design.

There is no way that Tri-Met is going to negotiate these intersections and offer transportation, but our school buses have to.

So we come back to the \$600,000. version and its importance to Metro's overall plan. Why should this project, in this version, be funded now?

The \$600,000. funding now would act as the foundation for acceptable, smaller versions that would include multi-modal facilities. We believe that given the time-frame for construction, we could secure the required balances to meet the design criteria for future planning. We are going to have to fight for every scrap of funding in order to get Foster fixed. There is not going to be one large sum, not out here, not at the City limits, not outside the UGB.

Additionally, we will be better able to handle current applications which could provide developer funding into the account. We would be staged for Tri-Met's routing. We would be better positioned to lobby after additional funding. We would be better staged for the eventuality of the UGB move.

2040's roadway program is intended to develop strategies to reduce traffic congestion, improve efficiencies of our roads and plan future roadway improvements throughout the entire Metro region, in a balanced way.

It seems that there is very little project representation beyond the Urban Growth Boundary. The urban reserve area, is an area of 22,000 acres (35 square miles). How many projects are being considered from these areas, let alone submitted? The impact of these two intersections affects thousands from our Urban Reserve Area (the largest single Urban Reserve area, 12,000 acres), on a daily basis. Are we to be included? Where do we weigh-in, in this "balance"? It's the only representative project that affects transportation substantially, in Metro's reserve areas. Being inside the UGB is not the criteria. Metro's jurisdictional boundary is the criteria, and we live within it.

If Metro, Portland or Multnomah County can't provide funding or at the very least a solution for funding of Foster Road before the first, incremental move into the Damascus Reserve Area, then who can? Who will? It would be irresponsible to make such a decision to move the UGB without a concrete plan.

We feel incumbent to make the effort to set up the account that we, as Foster Road travelers, can lobby to. If we don't, then Metro should look to the Westside Urban Reserves for growth, where funding will be less of a burden and less immediate in nature.

This effort to get Foster Road fixed is not a new effort, but the solution of establishing an account is. It's a viable alternative to discarding a highly ranked and cost effective project for reasons created after the fact.

Please look at what your asking us to consider in the Urban Reserve then look again~at this project. Please approve this funding.

Thank you very much.



CITY OF

PORTLAND, OREGON

OFFICE OF TRANSPORTATION

Earl Blumenauer, Commissioner
Engineering & Development
1120 S.W. Fifth Avenue
Room 802
Portland, Oregon 97204-1971
(503) 823-7004
FAX: (503) 823-7371

June 16, 1995

David Tiley
8820 SE 162nd Ave
Portland, Oregon 97236

**SUBJECT: SE 162nd Ave - SE Jenne Rd Section
SE Foster Rd**

You requested an estimate to improve the sight distance along SE Foster Rd from SE 162nd to Jenne Rd. The estimate was compiled using existing maps. No field surveys or comprehensive analysis were performed. The estimated costs to remove part of the hillside to improve the sight distance is \$428,400. This cost includes design, right-of-way and construction.

The estimate includes a 25% mark up to help cover any items that might have been overlooked, account for inflation since projects usually are not built for several years, and to allow for some change in the scope of work without adversely affecting the estimate. It is possible, after detailed field surveys and engineering analysis, more economical solutions may become evident upon further study.

The work proposed in this estimate includes tree removal and excavation of the hillside on the north side of the roadway. No roadway re-alignment is proposed due to difficulties in making adequate connections from the old to the new alignment. Removal of the hillside based on the proposed re-alignment of SE Foster Rd will provide for sight distance to the 162nd intersection on the existing SE Foster Rd alignment.

If you have any questions about this estimate or would like to see the detailed estimate, contact me at 823-7163.

Sincerely,

Brett I. Kesterson, P.E.
Senior Engineer
Transportation Engineering & Development

BIK:tab

c: Randy Countryman

[Estimate SE Foster 1

Section Two

Transportation Hotline Comments

**Region 2040 Implementation Fund
Comments Received over the Transportation Hotline
June 21 – June 28, 1995**

Ann Kracke

Calling in support of Foster Road improvements. The traffic is heavy and this should be a priority project.

Shannon Muse

Calling in support of Foster Road improvements. Have witnessed accidents at Jenne Road intersection, improvements are needed.

Laurie Shaw

1246 Se Knapp
Portland, OR 97236

Foster Road need lights and stop signs, in support of improvement project.

Kimberly McAdam

8212 SE 144th
Portland, OR

Calling in support of Foster Road and 162 improvements, need a light to prevent accidents at 162nd and Foster Road.

Sharon Mossman

8031 SE 162
Portland, OR 97236

Urge Metro Council to support Foster Road improvements. It's a serious situation and needs to be improved.

Mel Fox

2323 SE 122nd
Portland, OR 97233
please add to mailing list

In support of Foster Road improvements, should be included in funding it needs to be a high priority. The intersections at Jenne and 162 are dangerous, with many accidents and close calls. This project should be elevated to a higher priority.

Lana Ukalov

665-9047
Pleasant Valley

Understand that Foster Road improvements are not in the recommendation. Lots of people are driving Foster, Jenne and 162. We need help with traffic flow and we need these improvements right away.

Mary Thompkins

6022 SE 43rd
Portland, OR 97206

Calling in support of Woodstock Blvd. pedestrian improvements. Improvements are needed to allow people to cross the street between businesses and to allow children to safely cross to the Lewis School at 43rd.

David Talbot
525 N. Tillamook
Portland, OR 97227

Calling in support of Albina Rail overcrossing. It's needed for access and safety and to allow area businesses to operate.

Art Lewellen
6814 N. Greenwich
Portland, OR 97217

Land used for transportation to accommodate growth is the most inefficient use of land. Open space, wildlife habitats, agricultural lands, and existing neighborhoods will be sacrificed to accommodate transportation. Transportation land use is auto oriented and inefficient. Land use planning can not avoid continued destruction of valuable open spaces until the transportation portion is deemed a national failure. Past planning has resulted in growth patterns that have given us urban sprawl, splintered city and suburban lifestyles, and have created problems that can't be solved by building more roads, freeways, and parking lots. We need to rethink auto oriented strategies and reestablish national rail lines and local trolley lines and include the changes envisioned in LUTRAQ before ultimate breakdown occurs.

Amy Benson
2044 SE Ash # 3
Portland, OR 97214

I'm very disappointed with recommended allocation. Only one bike project is recommended and it's Barbur Blvd., which should have been done a long time ago. Too much funding is going to roads. It seems that public input and the JPACT ranking and scoring process was thrown out the window with this recommendation.

Chip Giller
1915 39th
Portland, OR 97214

More money should be spent on bike and pedestrian projects. Road expansion should not be emphasized as it is in the current recommendation. Some of the road expansion funds should be shifted to bikes

Section Three

Written Comments

Rock Creek Community Association
PO Box 1112
Clackamas, OR 97015
Fax and Phone 503-658-5338

June 21, 1995

Dear Metro Council and JPACT Members;

I am chairman of the Rock Creek Community Association in the Sunnyside Area of un-incorporated Clackamas. I have served on MPACT and on the steering committee for the neo-traditional village on Sunnyside Road. Previous commitments have kept me from this meeting, however, the importance of this issue must be addressed.

With the establishment of the East Sunnyside Village Plan and the actual implementation of it as well as hundreds of other homes in other developments already approved, we must address the problem of infrastructure. A big part of that infrastructure is Sunnyside Road. It is the heart of our community and it is overloaded now. As these new developments go in, it will become intolerable.

As far back as the formation of the Comprehensive Plan, the widening of Sunnyside was recognized as a necessity to support the growth planned for this area. The growth is no longer in the planning stage but is in the building stage. The widening of Sunnyside Road should be at the same stage to carry this new load.

We are the bedroom community for Beaverton and Portland employers. We have the growth but without the tax base. Please grant the request to fund the widening of Sunnyside to at least the East Sunnyside Village.

Sincerely;



Chris Utterback, President of the RCCA

ATTENTION

Room

Wyman

3103 NW Wilson
Portland, Oregon 97210
June 27, 1995

Transportation Planning
and METRO Council
600 NE Grand
Portland, Oregon 97232
fax 503-797-1794

RE: MTIP HEARING JUNE 28, 1995

Dear METRO Councillors and JPACT Members:

I am writing to urge funding under the MTIP of all pedestrian aspects of the plan. It is outrageous to need a several thousand dollar machine to go and buy a loaf of bread. It is outrageous to be totally dependant on a several thousand dollar machine to take your child to play with a classmate after school. Whole sub-divisions have been planned on the premise that if you have to have a car to get around, that keeps out undesirable elements that are dependent on walking. This is unAmerican. It is also stupid. Our auto-dependent society is strangling itself with destructive land use practices, and going bankrupt trying to keep itself in these expensive machines and paying for the roads they need.

Pedestrian access should be the fundamental building block of any transportation plan. WE SHOULD BE ABLE TO WALK EVERYWHERE THAT WE CAN GO IN A CAR. Ideally, pedestrian access will be the key that allows more rational land use. In the short term, please fund the pedestrian aspects of this MTIP. Thank you.

Sincerely,



Chris Wrench

member, CAC to the Regional Transportation Plan

Metro Council and JPACT
600 NE Grand Avenue
Portland, Oregon 97232

Dear Policymakers:

This letter responds to your request for comments relative to allocation of \$27 million reserve fund for implementation of Region 2040. I am responding to staff's recommendation that "improvements" to the Greenburg Road/217 interchange be funded as a "road expansion project" and to the allocation of funds to various travel modes.

The intersection is a mess. But, given that we already have spent millions of dollars to create multiple turn lanes and erect "No Pedestrian Crossing" signs, I wonder at the logic of spending more money to further expand the roadway. If we are seriously thinking of designating the Washington Square area as a regional center, I would hope that we would use this money to address the real movement needs at the intersection — travel by all modes is made very difficult because of the present configuration of the Washington Square entrance from Greenburg. Until the owners of the Square reconfigure their parking areas, further road expansion at this location will result in continuing diminished return for the dollars spent. I hope you condition expenditures of these dollars, if allocated, by requiring that they be spent in conjunction with reconfigured Washington Square traffic patterns to lessen the auto burden on Greenburg Road of shopping center traffic and to improve access along and across Greenburg, and across 217, for pedestrians and bicyclists.

I am also extremely disappointed that of the \$4.2 million allocated to all of Washington County, only \$.09 million has been allocated for anything other than auto travel. We have enormous need for pedestrian and bike facilities in this area, and we are currently able to quite adequately travel everywhere by car or truck. Until we, as a region and as the local jurisdictions comprising Washington County, get serious about creating a "truly multi-modal system for travel" in Washington County **and fund that commitment according to the need by mode**, we will continue to see our roads be ever widened (we're now up to 7 auto lanes on arterials) and our travel needs unmet. We will also never be able to support transit until people can safely and comfortably walk from their homes to bus and light rail stops.

Sincerely,



Terry Moore
8440 SW Godwin Ct.
Garden Home, Oregon 97223

Post-It® Fax Note 7671		Date 6/28	# of pages 1
To Metro Council		From Carrie Pak	
Co./Dept.		Co.	
Phone #		Phone # 635-9760	
Fax # 797-1794		Fax # 635-9764	

June 28, 1995

METRO Council
Metro Building
600 NE Grand Avenue, 3rd Floor
Portland, Oregon 97232

Members of the METRO Council:

I am sorry that I cannot attend the public hearing scheduled on June 28, 1995. The issues that you are discussing tonight, however, are true and deal to my heart and that is why I am writing to you today. I would like to go on the record **IN FAVOR OF FUNDING THE PROPOSED GRESHAM PROJECTS**. In this day and age of shrinking federal grants, there couldn't be a more important and pertinent project than the Gresham Civic Neighborhood project to bring the region together.

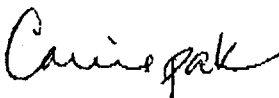
As a member of the Gresham Planning Commission, I have had an opportunity to thoroughly review the merits of this project. This project brings together many of the region's objectives and would serve as a regional show piece for Tri-Met and the City of Gresham.

The City staff has worked diligently to include an extensive public involvement process to the development of this project. This project is what the citizens of Gresham want and what this region needs. This project is more than just another Tri-Met station. The completion of this project is a commitment from METRO to the region: the commitment to building a less auto-dependent society and (as the Secretary of Transportation Pena noted yesterday) the commitment to "improving the quality of life".

I believe that an expansion of the south-north "main" street and a new light rail station will provide the necessary catalyst for other desirable developments in the area, including the new station plaza and other transit oriented housing and businesses.

I hope that this letter is helpful in your decision to appropriate grant funding to the Gresham projects. Thank you for the opportunity to offer my opinion.

Sincerely,



Carrie Pak, P.E.

cc: David Widmark, Gresham Planning Commission
Richard Ross, City of Gresham



WASHINGTON
COUNTY,
OREGON

June 28, 1995

Andy Cotugno
Metro Planning Director
600 NE Grand Ave.
Portland, OR 97232

Dear Andy:

Re.: \$27 Million Regional Reserve Fund

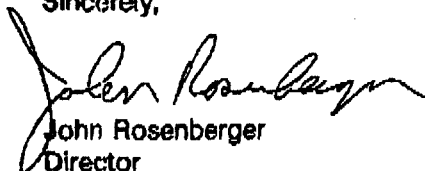
We have reviewed the staff proposal for the allocation of the \$27 million in Regional Reserve Funds, and have several concerns about the recommendations.

First, the proposal is to allocate nearly 40 percent of the funds to "regional projects." While on the surface this may seem to be an acceptable notion, we observe that one-half the population of the region does not even have a project on the list of projects considered for funding. Seemingly the only projects that are deemed regional are located in the central city or Multnomah County. As we collectively move forward to implement the Region 2040 Growth Concept, Regional Centers, Town Centers, and Light Rail Stations are going to be most important to suburban communities. The current recommendation for allocation of funds does not reflect this concept.

The region has a window of opportunity to support immediate station area development at the Tektronix site and the Hillsboro station, but neither of these projects are recommended for funding. In both cases, a modest investment on the part of the region would leverage and take advantage of considerable private funds, and other public funds that are to be spent on these stations. At a minimum, these projects should receive funding from the proposed TOD Revolving Fund. As an alternative, funding for the Gresham Civic Neighborhood LRT Station from the Regional Reserve Fund would free up other Tri-Met funds for the Millikan Way project at the Tektronix LRT Station.

In 1993, the region went through a painful process of cutting approximately \$170 million in projects from the TIP to bring it in balance with expected revenues. Nearly one-half of those cuts were made by eliminating or deferring projects in Washington County. At the same time, a \$34 million reserve fund was established as part of this process. Arguably one-half of the money to create what is now a \$27 million reserve fund came from cuts made in Washington County and, the current proposal returns only about 30 cents on the dollar to the County. While we support the idea that the region needs to work cooperatively to complete projects of regional significance, the current formulation has the suburbs too heavily subsidizing projects at the center of the region.

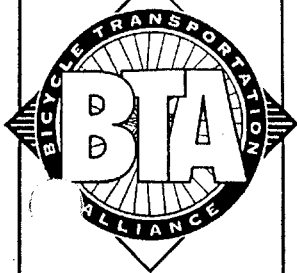
Sincerely,



John Rosenberger
Director

c. Roy Rogers
Mark Brown

G:\USE\AS\MARKS\WPDATA\2040FUND.5



June 27, 1995

TO: Metro Councilors:
Jon Kvistad
Patricia McCaig
Ruth McFarland
Susan McLain
Rod Monroe
Don Morissette
Ed Washington

JPACT members
TPAC members

FROM: Rex Burkholder, Citizen member of TPAC

Re: Allocation of \$27 million 2040 Implementation Fund Reserve

As a citizen member of TPAC, I have participated in the long and sometimes grueling process of preparing recommendations for the allocation of these funds. Please enter these comments into the public record.

Based on that experience, I am sorry to say that the process is deeply flawed in its outcomes as well as in how it was conducted:

- 1) Using TPAC to set funding priorities compromises its ability to provide accurate and meaningful technical advice to JPACT and the Metro Council. TPAC members represent jurisdictions with keen interest in specific projects, and have been required to act as advocates as well as judges—a bad combination as one can be good at either role but not simultaneously. Therefore, they are unable to provide unbiased technical information or evaluation, always having to consider the effect on their project's chances of being funded rather than being concerned with determining the "best" project.
- 2) Targets for "balancing" funding among modes were much talked about but never actually debated nor acted upon by TPAC. Ultimately, only the existing JPACT resolution setting aside \$7.19 million for everything but transit and roads was the only clear action taken on this issue. Why? Because the number one priority for funding of most jurisdictions remains road expansion. As it is, projects specifically targeted to improve bicycling and walking conditions received less than 10% of the funds while roadway expansion and reconstruction received over 54%. In addition, roadway expansion projects actually got credit for increasing capacity (VMT) despite state and regional goals to the contrary, while alternative modes were judged by how much they reduced VMT.
- 3) Despite all the fuss, what this process produced is not significantly different than what would be expected to have been recommended without the time and resource-consuming process undertaken. The money was divvied up by geographical jurisdiction and all evaluation work thrown to the winds.

Ultimately, project selection was determined not by regional criteria and regional needs but by the cities and counties. Not surprisingly, major road expansions top

◆
WORKING FOR SAFE,
SAFE, AND SUSTAINABLE
TRANSPORTATION
◆

◆
P.O. Box 9072
PORTLAND, OREGON
97207-9072
◆

503/226-0676

the list: \$5 million to Clackamas County for Sunnyside Road, \$3 million to Washington County for an intersection realignment at 99 W and Tualatin Road, \$2.3 million to Portland to resurface Front Avenue. Geographic distribution of these funds undermines their function to further regional goals. The "best" projects from a regional perspective should be funded under this process, regardless of where they may be located.

4) Public involvement remains a superficial and ancillary part of the regional transportation planning process. Over 17,000 comment cards were returned as part of the Region 2040 public outreach process. The second highest number of comments addressed the need for more biking and walking facilities, even though this issue was not specifically mentioned in the accompanying materials. As the \$27 million is ostensibly meant to support the Region 2040 Concept, the allocation of less than 10% of available funds to biking and walking facilities directly contradicts the desires of the public and the strongly stated goals in the Interim RTP and Region 2040 Concept to create walkable and bikeable communities.

Recommendations:

1) The allocation of funds is inherently a political process; i.e., it is a process that should be guided by policies and goals adopted by an elected decision-making body. Leaving these decisions up to staff puts staff in the untenable position of advocating and evaluating their own projects, creating conditions ripe for the worst kind of political horse-trading and manipulation of the evaluation process. The Metro Council should set the proper balance for modal spending targets to meet Region 2040 land use and transportation goals and direct TPAC to develop usable evaluation criteria that allows comparison among modes.

2) Geographical equity should not be a factor in distributing regional resources, otherwise it doesn't matter whether a jurisdiction is supporting regional goals or not: they will always be assured of a share of the regional pie to implement their goals.

3) Given the strong public support for walking and bicycling facilities, and given the extremely large gaps in provision of sidewalks and bikeways, it should be regional priority to aim to bring pedestrian and bicycle networks up to the current level of access and mobility provided for motor vehicle movement.

As a start, all bicycle and pedestrian projects nominated for the \$52 million "Short List" should be funded. While the "Short List" clearly reflects the roadway bias of local jurisdictions as well as regional and ODOT staff (two highly ranked bicycle projects only made that list because of a last minute amendment by myself at TPAC), the shortness of time and the lack of a modal balance policy force this less than ideal choice.

These projects are:

Hawthorne Bridge Bike Lanes
A Avenue Pedestrian Path
Gateway Bicycle Access
Hollywood Bicycle Access
Cully Blvd. Pedestrian Improvements

Walker Road Bike Lane

Each of these projects address very real safety and mobility needs. These projects total only \$4.043 million and take us a lot farther toward our goals for this region than a short, fat project such as Sunnyside Road (\$5 million) which will create more traffic on the urban fringe as well as create a significant barrier to pedestrians. Adding these projects back into the pot would raise the bicycle/pedestrian share of expenditure to 23% of the total available funds, hardly an amount to redress the historic and ongoing failure to fund walking and bicycling opportunities on a local and regional level.

We look forward to working with you to develop a regional transportation planning process that truly serves regional desires and needs.



RECEIVED

JUL 03 1995

June 28, 1995

METRO, Attn: Pamela Peck
Transportation Planning Dept.
600 N.E. Grand Ave.
Portland, OR 97232

RE: Region 2040/Western Bypass

Dear METRO:

The Hillside Neighborhood Association at its regularly scheduled June meeting voted to authorize me to respond to your June 8 letter seeking public comment on the Region 2040 Implementation Fund program.

Basically, the Board wishes to notify METRO of its strong opposition to the proposed "Western Bypass" still being studied by ODOT. We have been following this issue with some alarm for the past several months. We do not believe that the region's transportation problems can be solved or even mitigated by expansion of the same failed strategies (namely freeways built for low occupancy automobiles) that have brought gridlock to Seattle and areas of Washington County. We urge you not to waste any further time studying or considering an alternative which would not be effective, affordable, or even legal under state and federal laws.

Please keep us advised on any further developments regarding Metro's involvement with the Western Bypass and further opportunities to comment on this project.

Very truly yours,

Randy Weisberg,
Land Use/Environmental Coordinator
Hillside Neighborhood Association

cc: Councilor Ed Washington
Mike Burton, Metro Executive



◆
WORKING FOR SAFE,
SAFE, AND SUSTAINABLE
TRANSPORTATION
◆

June 28, 1995

Metro Councilors
Members of JPACT
Mike Burton, Executive Officer
600 NE Grand Ave.
Portland, OR 97232

RECEIVED

JUL 06 1995

EXECUTIVE OFFICER

Re: FY 1996 MSTIP Regional Reserve Fund

The Bicycle Transportation Alliance is a non-profit organization of over 500 people who value the economy, efficiency and beauty of riding a bicycle. We work to increase safe and plentiful bicycle facilities and encourage more people to ride bikes for transportation. It's a difficult task. We are implementing a workshop on bicycle commuting which will include outlining safe bicycling routes to places of employment for the novice bike commuter. When was the last time AAA had to give advice to a member on the least treacherous route from NW Portland to John's Landing? Believe me there are citizens in our region who are trying to live the policy that you are espousing in Region 2040, but you need to meet them half way with a safe bicycle lane.

With a \$27 million set-aside to implement Region 2040 is a recognition that we cannot continue to do business as usual. We must build housing that is close to services and employments centers. We must encourage people to live near their work. We must make it easy for people to choose transit, bicycling and walking — to work, to the store, to church.... We know the consequences of high auto use. We know that we cannot build our way out of congestion. We've all read the studies. There was great expectation that enlightened transportation projects would be chosen to encourage the use of alternatives to the automobile, yet these projects designated for the \$27 million set-aside will only make it **easier** for a person to choose a car.

It is my understanding that the bike projects were judged by their potential reduction of vehicle miles traveled (that seems reasonable), yet the road projects were judged by how much capacity could be increased, autos that is, certainly not for increased capacity for bikes and feet.

A good many projects are for road widening. Not only does a wider roadway increase auto capacity, a wider road makes pedestrian and bicycle passage unpleasant at the least and treacherous as a matter of course.

So where is the vision in the pittance of bike and pedestrian projects that made the final list? On the Metro list, implementing lanes to connect the ODOT-Barbur Blvd project with Front Avenue is good. But that's only one!

The Front Avenue reconstruction project submitted by the city of Portland does not include a bike **lane** as described. It's a wide sidewalk. I believe there

◆
P.O. Box 9072
PORTLAND, OREGON
97207-9072
◆

503/226-0676

were other bike projects that would have contributed more to a decrease in VMTs. Perhaps this project will appease the event planners who want bikes off of the riverfront multi-use path.

I request that you look again at the bike and ped projects that were cut in the last round. **The Gateway and Hollywood Transit access project** in Portland would provide bike access to a major transit center and a regional center. **Walker Road** in Washington County would provide direct north-south access on what is now a shoulder-less roadway. **And** the Hawthorne Bridge sidewalk widening project...

The Hawthorne Bridge carries over 15 hundred bike commuters a day and on rainy days over 1000 pedestrians under umbrellas. If any of you rode that **illegally-undersized sidewalk** sandwiched between an umbrella-carrying pedestrian and a very wide Tri-met bus, you would rethink your priorities.

So **believe in your own vision** of our communities less-dominated by the automobile. But put the resources in projects that will truly get us there. Not in ones that continue on the same old automobile path.

Thank you for the opportunity to comment.

Best regards,

A handwritten signature in black ink that reads "Karen Frost Mecey". The signature is written in a cursive, flowing style.

Karen Frost Mecey
Executive Director

PORTLAND METROPOLITAN AREA CONGESTION PRICING PILOT PROGRAM

Pre-Project Study Work Plan and Budget

Introduction

Metro is proposing a two-phase pre-project congestion pricing study for the Portland area. Each phase will include public involvement and technical work tasks. Specific elements of the congestion pricing study (public outreach and education) will be integrated with Metro's update of its Regional Transportation Plan (RTP) in order to reach as large an audience as possible with the concept of congestion pricing as a transportation strategy. The RTP update is to be completed in two phases with final adoption in 1996. The RTP update will leave some issues, including congestion pricing, open for further refinement planning. In particular, the public education and involvement program for the study will be coordinated with RTP public outreach to ensure a smooth transition between the two efforts.

At the end of the study, Metro will evaluate the study results to determine the technical and political feasibility of congestion pricing in the Portland region. Depending on the preferred alternative selected at the end of Phase II, Metro intends to apply to the FHWA for implementation of a pilot congestion pricing project.

Pre-Project Study Goals and Objectives

The overall goals of the congestion pricing pre-project study are (1) to develop a nationally applicable process for gaining public and political acceptance of congestion pricing; and (2) to provide for a regional evaluation and implementation of congestion pricing (beginning with a pre-project study to evaluate alternatives).

Supporting these goals are the following objectives. The final two objectives would apply to implementation of congestion pricing, following the study.

1. Assess the case for and against congestion pricing, and its practical feasibility, with regard to the following:
 - Reduce peak-period congestion, principally through reduced peak period use of the single-occupant vehicle (SOV);
 - Reduce regional vehicle miles of travel (VMT);
 - Reduce regional motor vehicle emissions;
 - Improve regional mobility (as measured by travel times and the availability and use of alternate modes);

- Allocate highway investments in an optimal, efficient manner;
 - Improve overall transportation and land use efficiencies in the region;
 - Avoid and/or mitigate negative impacts on neighborhoods and businesses; and
 - Reduce and mitigate economic impacts on lower income drivers; and
 - Determine the appropriate use of revenues generated through the pricing scheme.
2. Increase awareness and understanding of congestion pricing among the general public and elected officials in the Portland region and to obtain feedback from the public to help shape the overall pricing strategy.
 3. At the conclusion of Phases I and II, evaluate results to determine the technical and political feasibility of congestion pricing in the Portland region.
 4. If appropriate (as determined by objective 3 above), develop regional consensus on a congestion pricing pilot implementation plan, including:
 - Congestion pricing test site(s);
 - Schedule for implementation;
 - Tolling technology;
 - Fee strategy and use of revenues; and
 - Equity and Mitigation plan.
 5. Seek enabling legislation for a pilot project. This should encompass:
 - State authority to conduct a pilot project (tolling in general);
 - Enabling laws for enforcement
 6. File application to FHWA for a pilot project

7. Implement a congestion pricing pilot project in accordance with the regionally agreed upon plan
8. Monitor and evaluate the pilot project

Work Plan and Budget

This work plan/budget describes work tasks and budget estimates for the study. The study will involve work by Metro staff and by consultants. Metro staff will complete tasks described in section (A) Project Administration. Metro will contract with consultants for some work tasks described in sections: (B) Phase I - Policy Development and Alternatives Analysis, and (C) Phase II - Selection of Preferred Alternative. Other work tasks will be completed by Metro staff and/or local agency staff.

This document supersedes portions of Section III (Work Plan and Schedule) and Section IV (Budget and Financial Plan) of Metro's "Re-application for Participation in the Congestion Pricing Pilot Program" (October 14, 1993).

Table 1 provides a summary of the funding request by work element. Project-specific advisory committees are described in the work plan. A detailed budget by task is shown on page 4 and 4a.

Table 1. Funding Summary

	Management and Administration	Technical Work Element	Project Approval	Public Involvement	Total
Federal Funds (80%)	\$27,200	\$531,800	\$20,300	\$428,700	\$1,008,000
Local Matching Funds (20%)	\$6,800	\$132,950	\$5,075	\$107,175	\$252,000
Total Study Budget	\$34,000	\$664,750	\$25,375	\$535,875	\$1,260,000

Budget amounts are for 24 months.

Congestion Pricing Pre-Project Study
Budget (06/20/95)

CONGPRIC.WB2

PHASE I /Task Name	TASK #	Consultant Services	Metro Staff Project Manager	Metro Staff Public Involvement	Metro Staff Administration	Metro Staff Travel Forecasting	Local Agency Staff	TOTALS
PROJECT ADMINISTRATION								
Project Administration	A.1				\$30,000			\$30,000
Policy Oversight	A.2							\$0
Project Travel	A.3		\$4,000					\$4,000
TOTALS FOR PROJECT ADMINISTRATION (Phase I and II)		\$0	\$4,000	\$0	\$30,000	\$0	\$0	\$34,000
PHASE I: POLICY DEVELOPMENT AND ALTERNATIVES ANALYSIS (18 months)								
TECHNICAL WORK ELEMENT								
Establish Project Management/Advisory Committees	B.1							\$0
Educate Policy/Decision Makers	B.2							\$0
Develop Baseline Model Data	B.3	\$20,000						\$20,000
Develop Alternative Scenarios and Ranking Criteria	B.4	\$30,000						\$30,000
Modify Regional Model to Evaluate Congestion Pricing	B.5	\$75,000						\$75,000
Analyze and Rank Congestion Pricing Scenarios	B.6	\$85,000						\$85,000
Technical Review by Metro Staff (Tasks B.1 - B.6)	B.7		\$90,000			\$25,000		\$115,000
Local Agency Technical Support	B.8						\$119,000	\$119,000
Produce Project Report for FHWA on Phase I Activities	B.9	\$5,000						\$5,000
Subtotal: Technical Work Element		\$215,000	\$90,000	\$0	\$0	\$25,000	\$119,000	\$449,000
PUBLIC INVOLVEMENT WORK ELEMENT								
Public Opinion Research	B.10	\$66,000						\$66,000
Introduce the Study and Involve the Public in Alternatives Analysis	B.11	\$150,000						\$150,000
Metro Staff Review of Consultant Work; In-House Public Involvement	B.12			\$94,500				\$94,500
Local Agency Support of Public Involvement Program	B.13						\$21,000	\$21,000
Subtotal: Public Involvement Work Element		\$216,000	\$0	\$94,500	\$0	\$0	\$21,000	\$331,500
TOTALS FOR PHASE I		\$431,000	\$90,000	\$94,500	\$0	\$25,000	\$140,000	\$780,500

Congestion Pricing Pre-Project Study
Budget (06/20/95)

CONGPRIC.WB2

PHASE II /Task Name	TASK #	Consultant Services	Metro Staff Project Manager	Metro Staff Public Involvement	Metro Staff Administration	Metro Staff Travel Forecasting	Local Agency Staff	TOTALS
PHASE II: SELECTION OF PREFERRED ALTERNATIVE (approx. 6 months)								
TECHNICAL WORK ELEMENT								
Develop Conceptual Designs for Highest Ranking Scenarios	C.1	\$120,000						\$120,000
Prepare Reports and Informational Materials to Guide Selection and Adoption	C.2	\$10,000						\$10,000
Technical Review by Metro Staff	C.3		\$26,250					\$26,250
Local Agency Technical Support	C.4						\$59,500	\$59,500
<i>Subtotal: Technical Work Element</i>		\$130,000	\$26,250				\$59,500	\$215,750
PUBLIC INVOLVEMENT WORK ELEMENT								
Select/Recommend Preferred Alternative	C.5	\$165,000						\$165,000
Metro Staff Review of Consultant Work; In-House Public Involvement	C.6			\$32,375				\$32,375
Local Agency Support of Public Involvement Program	C.7						\$7,000	\$7,000
<i>Subtotal: Public Involvement Work Element</i>		\$165,000	\$0	\$32,375			\$7,000	\$204,375
PROJECT APPROVAL								
Adopt Preferred Alternative/Amend RTP	C.8		\$1,875				\$3,500	\$5,375
Produce Final Project Report for FHWA	C.9	\$20,000						\$20,000
<i>Subtotal: Project Approval</i>		\$20,000	\$1,875				\$3,500	\$25,375
TOTALS FOR PHASE II		\$315,000	\$28,125	\$32,375			\$70,000	\$445,500
CONGESTION PRICING STUDY TOTALS (24 months)		\$746,000	\$122,125	\$126,875	\$30,000	\$25,000	\$210,000	\$1,260,000

AN INTRODUCTION TO CONGESTION PRICING FOR OREGON POLICY MAKERS

Oregon Department of Transportation
Region 1

ECO
NORTHWEST

ECONOMICS • PLANNING

FINANCE • MANAGEMENT

**AN INTRODUCTION TO CONGESTION PRICING
FOR OREGON POLICY MAKERS**

Submitted to:

Oregon Department of Transportation

Region 1

123 N.W. Flanders Street
Portland, OR 97209

by

ECO Northwest
888 S.W. Fifth Avenue, Suite 1460
Portland, OR 97204

March, 1995

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY.....	1
1.1. Policymakers Need to Know about Congestion Pricing	1
1.2. The Definition of Congestion Pricing.....	1
1.3. Setting Congestion Prices	2
1.4. Practical Application Issues	3
1.5. Equity Effects	4
1.6. Legal Authority.....	5
1.7. Congestion Pricing May Address Multiple Public Policy Issues.....	6
 2. INTRODUCTION: WHY POLICYMAKERS NEED TO KNOW ABOUT CONGESTION PRICING	 6
 3. WHAT IS CONGESTION PRICING?	 7
3.1. Why Use Congestion Pricing?.....	8
3.2. Different Ways of Applying Congestion Pricing	9
3.2.1. Pricing Roadway Use Directly	10
3.2.2. Other Ways of Implementing Congestion Pricing.....	11
3.3. Geographic Coverage.....	14
 4. THE ECONOMICS OF CONGESTION PRICING: THE THEORY	 14
4.1. Setting Congestion Prices	15
4.1.1. Pricing Existing Roads	16
4.1.2. The Effect of New Roads on Congestion Prices	19
4.2. Building New Roads	20
4.2.1. Transit as an Alternative to New Roads	20
4.3. A Comparison with the Current System of Road Finance	22

5. THE CHALLENGES OF BRINGING THEORY INTO PRACTICE:	23
5.1. How "Pure" Does Congestion Pricing Have to Be?	23
5.1.1. Coverage	24
5.1.2. Phasing	27
5.1.3. Level and Structure of Congestion Prices	28
5.1.4. Linkage to New Roadway Decisions	30
5.2. Technical Feasibility	31
5.2.1. Toll Collection Technology	31
5.2.1.1. Automatic Vehicle Identification (AVI) systems	31
5.2.1.2. Area Licensing	34
5.2.1.3. Cordon Pricing	34
5.2.1.4. Parking charges	34
5.2.2. Privacy Issues	35
5.2.3. Travel Demand and Highway Cost Information	36
6. WINNERS AND LOSERS UNDER CONGESTION PRICING	38
6.1. Travelers: Who Wins, Who Loses?	38
6.2. Downtown vs. the Suburbs: Who Wins, Who Loses?	39
6.2.1. Comprehensive Coverage	39
6.2.2. Incomplete Coverage and Mispricing	41
6.3. Environmental Impacts	41
7. INSTITUTIONAL ISSUES	42
7.1. Federal Laws and Policies	43
7.2. State Laws and Policies	44
7.3. Local Transportation Authority	44
7.4. Administering the System	45
7.4.1. Financial Decisionmaking	45

8. CONCLUSION	47
9. REFERENCES	49

1. EXECUTIVE SUMMARY

1.1. Policymakers Need to Know about Congestion Pricing

Congestion pricing is being proposed in Oregon as a solution to highway and transit finance problems, air quality problems, and urban congestion problems. Policymakers may be called upon to evaluate congestion pricing proposals based on these or other goals.

Although congestion pricing has been recommended by transportation economists for many years, it has not been used extensively on public roads anywhere in the world. Information about congestion pricing, either its theory or its practice, remains very limited.

This report is intended to introduce policy makers to both the theoretical and practical aspects of congestion pricing.

1.2. The Definition of Congestion Pricing

Congestion pricing is a method of pricing and financing highways. It has its origin in the theory of *peak period pricing* developed by economists. Congestion pricing is implemented with a system of variable *tolls* or other pricing techniques.

The purpose of peak period pricing is to properly assign costs to peak versus non-peak customers and, thereby, to efficiently ration fa-

cilities that are prone to congestion. Economists recommend congestion pricing of roads for the same reason that private firms use peak period pricing: to minimize the waste of economic resources.

Congestion pricing contrasts with the current system of road finance, which mainly utilizes a flat per gallon fee paid at the pump. This system necessarily has the effect of *underpricing* peak use, and *overpricing* off-peak use, at least in relative terms. Congestion pricing also contrasts with conventional highway and bridge toll pricing systems that charge a flat fee throughout the day.

The theory of congestion pricing suggests that road user fees, per mile of travel, should vary with traffic conditions, the type of roadway, and the type of vehicle. By the very nature of road pricing, the prices should be based on costs associated with *roadway* use, rather than some other measure of vehicular activity. There are many technologies available to price on this basis such as manual tollgates, automatic vehicle identification systems, and area licensing.

Transportation planners sometimes recommend measures that are based on *vehicle use* or *vehicle ownership* as an alternative in those cases where pricing of roadway use is not practical. Vehicle use-based measures include parking charges, gasoline taxes, and vehicle miles traveled (VMT) charges. Even rougher approximations to congestion pricing are special charges based on vehicle ownership, such as purchase taxes or license

fees. In general, however, these techniques sacrifice some of the theoretical benefits of properly-applied roadway user charges.

The geographic coverage of a congestion pricing system also needs to be considered. It can range from spot coverage of a single segment of a facility (such as an on-ramp), to area and regional pricing, covering much greater portions of the roadway system. Increased geographic coverage results in more effective congestion pricing, but at higher implementation costs.

1.3. Setting Congestion Prices

Setting congestion prices correctly (close to the costs occasioned by each user) is important if the policy is to be fair and is to produce economic benefits. In addition, the setting of congestion prices has to be coordinated with the highway investment process.

Even for existing roadways that have been "paid for" by the retirement of the debt used to finance their construction, there continues to be a recurring cost of that roadway: the time that users spend on the roadway and the delays they cause to one another. Time is a valuable resource, and needs to be used efficiently.

Proper management of time costs requires congestion pricing because of the way vehicles physically interact on a busy road. When drivers add their vehicles to the traffic stream on a busy road, they slow down traffic and delay other travel-

ers; this is the very nature of congestion. Although the additional drivers may be content with their *own* portion of the congestion burden, they are oblivious to the costs they are imposing on others, and have no incentive to consider these so-called *externalities* or *spillover effects*.

The spillover effects on travelers on the same road can be significant because speeds drop quickly as roads become congested. For a typical older freeway that is operating at very near its practical capacity, for example, an aggregate delay of up to an hour is experienced by other traffic for each new vehicle that tries to use the roadway. If the time of other users is worth even just \$5 per hour, one vehicle can impose a significant burden on other users. If drivers are not asked to pay these costs, they will behave in a way that imposes a tremendous time burden on other users.

The correct congestion price thus depends on traffic volumes. The price should be highest on roads operating near capacity (very congested) because the spillover effects are the greatest there. This leads to the basic recommendation for peak period or congestion prices.

Thus far in this discussion, congestion prices seem to bear no obvious relationship to the cost of *building* roads. In fact, however, if the process of building new roads is properly integrated with congestion pricing, congestion charges ultimately do bear a relationship to construction costs. Both congestion pricing and construction of new capacity are alternative ways to serve addi-

tional vehicles; in some circumstances, it may be less costly for society to build new capacity than to force additional vehicles to use the existing, busy roads at high congestion prices.

Therefore, roadways should be improved as long as the cost of serving additional vehicles with the improved road is less than the cost of serving them on the existing roads (as indicated by the congestion price). Thus, congestion prices and road building costs are related, when pricing is properly integrated with decisions to build new roads. When a roadway system is neither under- nor over-built, congestion prices are exactly equal to the amount needed to defray the incremental costs of new capacity.

1.4. Practical Application Issues

It is difficult, in real world settings, to apply congestion pricing with complete, theoretical precision. It is important, however, to preserve the crucial features of congestion pricing, particularly the feature of charging prices that relate to the actual spillover costs of congestion. Without correcting this aspect of the current pricing system, congestion and its economic costs will persist.

The comprehensiveness of pricing coverage also influences its effectiveness. Ideally, congestion pricing should be applied to all roads experiencing significant spillover costs from congestion, and to roads which might become congested, or otherwise be severely impacted, if pricing were applied else-

where. If pricing is not applied comprehensively enough, some of the benefits of congestion pricing will be lost, and there may be unfair burdens borne by some in the community.

The introduction of congestion pricing also needs to be phased properly. There are three possible ways in which congestion pricing could be phased: segment-by-segment, by pricing only selected lanes of multi-lane facilities, and by gradual price level changes. Phasing is a very practical solution to the inherently difficult problem of introducing fundamental policy change. However, if not done properly, phasing also can be a source of inequities, and the delay associated with phasing imposes its own costs.

Road prices cannot be set arbitrarily. The pricing structure should capture the *significant* variations in costs that occur because of traffic levels, vehicle type, and by roadway; gross over- or underpricing should be avoided. In particular, if congestion prices are set too high, the results may be worse than without pricing. In addition, the pricing structure should be transparent so travelers can make reasonable forecasts of their travel costs and time, and make appropriate adjustments to their behavior.

Actual implementation of a congestion pricing system requires a toll collection technology and information on travel demand and roadway costs. The precise technology to use depends on a number of factors, including the geographic coverage desired, the degree of differentiation

in prices required, as well as community perceptions of intrusiveness. In addition, the implementation costs of the available technologies will vary with local conditions.

Automatic Vehicle Identification (AVI) systems are a very sophisticated and flexible way to implement congestion pricing (although they can be initially expensive to develop). These types of systems are most economical in a high traffic-volume setting with limited detector locations and pricing points.

Area Licensing is seen by some as an economical alternative to AVI because its only costs are the printing and sale of the licenses, and the cost of police resources to apprehend scofflaws. However, some of the precision and differentiability of an AVI pricing scheme is lost in an area licensing system, and the incidence of evasion may be high.

Cordon pricing schemes are not an independent technology, but rather a variation of either AVI or area licensing designed to reduce implementation costs. In these schemes the costs of surveillance or detection are reduced by limiting tolling locations to a cordon or ring around the most congested areas.

Parking charges price the destination rather than the travel itself. Consequently, parking charges have the result of favoring long trips, through-trips, and other tripmaking not utilizing parking on the trip end. Revenues of such a scheme are not easily linked to individual corridors or roadways, making it difficult to integrate this pricing scheme with an

appropriate transportation investment strategy.

The AVI approach, on balance, makes the most sense to adopt if the goal is efficient pricing reform with minimal distortions caused by "holes" in the pricing system. It also makes the most sense if rationalization of the system of highway finance process is desired. Combinations of AVI with area licensing strategies, gasoline taxes, and other simple pricing devices may be the best near-term technology.

To our knowledge, all of the regional implementations of congestion pricing currently being considered around the world are planning to rely on AVI systems of one sort or another. It is probably incorrect, however, to assume that it would be feasible any time soon to completely replace the existing system of highway finance (i.e. the gas tax) with an ubiquitous AVI-based system because of its expense. Certainly, for facilities that do not warrant full congestion pricing, the gasoline tax remains a cost-effective method of pricing and financing roadway facilities.

1.5. Equity Effects

A change in the pricing of highway services will have a mixture of good and bad impacts on certain types of travelers, and on businesses and residents in subareas of the region. Travelers continuing to use the roadway during the peak period will face greater out-of-pocket costs than they currently pay through the gaso-

line tax, but all vehicles (including bus transit vehicles and carpools) should enjoy faster and more reliable travel times in return. The winners from congestion pricing are those who find themselves saving enough time to compensate for the higher cash costs of travel.

The losers from congestion pricing are those individuals who are unable to economically take advantage of the faster travel times. This will primarily be travelers with low values of time who are unable to minimize their congestion fees by taking transit or carpooling.

The pattern of winners and losers does not decompose directly into rich vs. poor and the impact by income class is not necessarily regressive. However, an advantage of congestion pricing is that it generates revenue that can be used to offset any such adverse equity effects should they occur. This can be done by financing transit alternatives where appropriate, or other compensatory actions.

The effect of congestion pricing on land use and urban form is not well understood, but it likely depends on the comprehensiveness of the pricing implementation. Comprehensive congestion pricing should improve formerly-congested access to existing locations, increasing these locations' competitive viability in the region. Thus, to the extent that the rising cost of congestion near the central business district (CBD) is a major contributor to the trend of suburbanization, congestion pricing may help existing centers.

1.6. Legal Authority

When considering congestion pricing, consideration must be given both to what the jurisdictional and legal authority is to implement it and what changes in existing institutional and administrative arrangements would have to be made to implement congestion pricing.

The primary impediment in federal law to implementing congestion pricing follows from the federal ban on tolls on federally-aided roadways. However, some legal scholars also believe that some pricing technologies, such as AVI system and area licensing, need not legally comprise a "toll". Specifically, if the system of collection of revenues is separated from the actual passage (e.g. because the AVI system sends out bills once a month), it can avoid the prohibition against tolls.

Whatever the precise legal status of tolls in general, there are currently available special exemptions from the federal ban on tolls. To support road financing experiments, the Federal Highway Administration (FHWA) currently is promoting a congestion pricing program to encourage implementation and evaluation of congestion pricing demonstration projects. Under this program, a small number of exemptions are available to allow pricing on federally-assisted highways.

Oregon transportation policy also is generally supportive of congestion pricing. However, it does not appear the State of Oregon has the authority to permit tolls on

existing federally-aided highways or bridges in the state, even if the federal prohibition were moot. In addition, the Oregon constitution restricts the uses of fees levied on motor vehicles to roadway-related expenditures only. This would not appear to restrict implementation of congestion pricing *per se*, but only the use of the revenues derived from such a policy.

Local transportation plans appear to be only indirectly supportive of congestion pricing. Congestion pricing is not specifically required in local transportation system plans (TSPs); it is, however, consistent with Goal 12 and the Transportation Planning Rule (TPR).

1.7. Congestion Pricing May Address Multiple Public Policy Issues

On the positive side, the technical impediments to the implementation of pricing are diminishing and there is federal, state and local support for considering the policy in Oregon. On the negative side, the actual implementations of congestion pricing are very few in number, and it is at variance with a system of highway finance and decision making in which many entities have a stake.

Congestion pricing has a strong basis in economic logic, and most economists believe that its benefits, and the inadequacy of other remedies, will ultimately compel its use. It is, however, a policy that is not well understood by the lay public. It also requires analytical and technical implementation effort if it

is to be applied fairly, and in a manner that extracts the maximum benefits for Oregonians. Only a carefully phased research program will prepare Oregon properly for the implementation of congestion pricing.

2. INTRODUCTION: WHY POLICYMAKERS NEED TO KNOW ABOUT CONGESTION PRICING

Congestion pricing is a policy issue in Oregon for a variety of reasons. Some see it as a partial replacement for the gasoline tax, which, as vehicles have become more fuel efficient, has proved to be a progressively less flexible means of highway finance. Proponents of transit development see congestion pricing as a source of revenue to subsidize transit facilities and services. Others would use congestion pricing simply to reduce automobile use or as an aid in compliance with federal air quality mandates. And still others (mainly economists) recommend it as a way to reduce the economic burden of roadway congestion.

Policymakers may be called upon to evaluate congestion pricing proposals based on these or other goals. Portland's Metro agency, for example, has applied for funding of a congestion pricing demonstration study under the aegis of a Federal Highway Administration (FHWA) program. Other studies are underway elsewhere in the state and in neighboring regions. It is important, therefore, that policymakers be familiar with the theoretical basis of congestion pricing, and the condi-

tions under which its use does, or does not, make sense.

Although congestion pricing techniques are in use in the private sector in telecommunications, transportation, and other areas, it has not been used extensively on public roads anywhere in the world. Congestion pricing has been recommended by transportation economists for many years, but accessible information about congestion pricing, its theory or its practice, remains very limited. Although the limited experience with congestion pricing is suggestive of its advantages, it is not yet clear whether congestion pricing will be able to deliver on its potential in the highway sector.

This report is intended to introduce policy makers to both the theoretical and practical aspects of congestion pricing. As we shall see, it is crucially important that congestion pricing be applied in an objective manner, in appropriate circumstances. The benefits of properly applied congestion pricing can be very great, indeed, but there are great risks associated with its misapplication.

3. WHAT IS CONGESTION PRICING?

Congestion pricing is a method of pricing and financing highways. It has its origin in the theory of *peak period pricing* devel-

oped by economists. The purpose of peak period pricing is to properly assign costs to peak versus non-peak customers and, thereby, to efficiently ration facilities that are prone to congestion. Peak period pricing achieves this by charging customers more during peak periods than during off-peak periods using variable tolls or other pricing techniques.

The following are some familiar examples of peak period pricing:

- Long distance telephone rates are greater during the business day than on evenings or weekends;
- Airline, train and bus travel costs more during holiday and summer peaks than during other periods, and weekday travel is more expensive than weekend travel;
- Some electric utilities charge more for power used during the peak periods of the day than at night;
- A variety of consumer goods and services, including hotel rooms, theater tickets, restaurant meals and even flower arrangements are more costly during periods of heavy demand than at other times;
- The new, privately-owned freeway opening in 1995 in southern California is charging peak period commuters

Experience with congestion pricing is suggestive of its advantages ... But it is not yet clear whether congestion pricing will be able to deliver on its potential.

more than off-peak commuters.¹

As these examples make clear, peak period pricing is a reasonably common form of pricing in the private sector. It is used when capacity is fixed, and demand fluctuates significantly between the peak and off peak periods.

In contrast, there are no existing examples of formal, peak period pricing on public roadway facilities. The use of time- and place-specific pricing on the roadway system generally ceased when the federal government took over financing of rural postal roads in 1916. To avoid local exploitation of these roads, a ban against tolls was put in place at that time, and continues to apply today.² This ban on tolls has made it difficult to implement congestion pricing properly because the most effective technologies for levying congestion prices involve toll-like road user charges.

Economists believe a congestion pricing system would use less transportation resources—including travel time, and operating and construction costs...

3.1. Why Use Congestion Pricing?

Economists recommend congestion pricing of roads for the same reason private firms use peak period pricing: to minimize the waste of economic resources. Economists believe a congestion pricing system would use less transportation resources—including travel time, and operating and construction costs—to deliver transportation services than

would otherwise be the case. Extrapolating from national studies, pricing in the greater Portland metropolitan area, for example, would save approximately \$5 billion dollars in time and transportation facility costs over a 25 year period.³

To understand why peak period pricing can yield savings, it is necessary to understand the role of pricing in rationing capacity costs. Consider the case, for example, of a movie theater operator deciding how much seating capacity to build in his theaters. The market for theater tickets exhibits wide swings in demand (not unlike a freeway); if the theater owner builds to fully accommodate the peak demand, he runs the risk

that he will have a glut of capacity in the off peak which he cannot sell to recover costs. Conversely, if he builds only to accommodate the off-peak, then he will have problems of too little capacity in the peak, leading to queuing by customers ("congestion") and lost revenues. In either case, the company's resources or the customers' resources (or both) are wasted.

The solution is to allocate the costs of the capacity to those customers who require it, by charging more during peak periods than off-peak periods. This rations the expensive, peak capacity, making sure it is not overwhelmed by users who are unwilling to pay, while generating the extra revenue needed to defray the extra capacity costs that

these customers impose. In addition, charging peak prices makes it easy for the company to determine how much capacity to build—it simply need build whatever the peak period customers are willing to pay for on their own.

The roadway system today, throughout Oregon and the rest of the United States, does not employ peak period pricing. Rather, users pay for highway services through a charge per gallon that is collected at the fuel pump.⁴ In rough terms, the charge is the same, per mile, regardless of which segments of the roadway are being used, and regardless of whether the travel occurs in the peak or the off peak period for that particular roadway.

This system of flat fees necessarily has the effect of *underpricing* peak use, and *overpricing* off-peak use, at least in relative terms.⁵ This manifests itself in several ways:

- Highways are overused and experience queuing (congestion) during the peak periods;
- Users lose valuable time sitting in congestion;
- Use of the roads by High Occupancy Vehicles (HOVs) such as carpools and buses is suppressed.

These problems, in turn, affect the investment incentives and fiscal balance of the highway system:

- Congestion provides a misleading signal to highway authorities as to which facilities or routes need more capacity, which, in turn, may

cause highway authorities to build some roadway capacity or routes that the users themselves would not be willing to pay for;

- Revenue generated by non-peak users, users on other routes and users from other regions must be used to pay for capacity that is not self-financing.

As the Oregon State Highway Department recognized nearly 60 years ago,⁶ such a system of finance can remain solvent overall only as *aggregate* gasoline tax revenues are sufficient to permit cross-financing of road segments. Otherwise, the cost of revenue-deficit road segments of roadway may grow to overwhelm the revenue surplus implicitly generated on other segments.

One solution to this fiscal dilemma is to raise gasoline tax or other broad revenue sources. Another is to use congestion pricing to explicitly recognize the true, differential cost of different road segments. The latter solution differs from the former in that it leads to correct rationing of current use and new investment at the same time it helps resolve the highway fiscal problem.

3.2. Different Ways of Applying Congestion Pricing

It should now be clear that congestion pricing is a way of linking road prices with actual costs. Specifically, under this theory, road prices should be applied so that users are charged differentially de-

pending upon the roadway costs they impose. (The pricing practiced by the telephone company provides a good example of a differentiated pricing structure, with fees that vary sharply with the type and cost of service required.)

From a strictly economic-cost perspective, road prices, per mile of travel, should vary with:

- **Time of travel.** The size (number of lanes, etc.) of a roadway is mainly determined by peak period usage levels. Theory says peak period users should therefore bear the burden of paying for the portion of capacity that is necessitated by their use;
- **Type (costliness) of the roadway.** Road segments such as bridges, segments built on expensive land, elevated or other complex segments, are more costly to build, and should be paid for by those who benefit from them;
- **Type of vehicle.** Vehicles that are very slow, wide, long or heavy effectively require greater roadway capacity or sturdier facilities, and accordingly should be charged more for their use.

Thus, a complete congestion pricing system involves incorporating peak period pricing in a structure that recognizes the type of roadway and type of vehicle as well.

Implementing this kind of pricing completely requires a sophisticated technology to collect the

requisite fees or tolls. There are a variety of ways congestion prices can be levied, but not all of them have the flexibility necessary to implement congestion pricing accurately.

3.2.1. Pricing Roadway Use Directly

By the very nature of road pricing, the prices should be based on costs associated with *roadway* use, rather than some other measure of vehicular activity. There are a number of technologies available to price on this basis:

- **Manual tollgates.** This is the method of collecting tolls that is widely used on older free-ways in the eastern United States, involving a physical structure at which vehicles slow down or stop to pay their roadway fees. A century or more ago, these facilities were houses (frequently doubling as inns) along the roadside, but on high-speed roads and bridges they are plazas of collections booths. In recent years, automatic coin collection technologies have reduced the inconvenience of stopping to manually pay tolls, but by definition, manual tollgates still require special facilities, impose delays on the traffic stream, and cause increased emissions due to stopping and starting.
- **Automatic Vehicle Identification (AVI) systems.** Electronic AVI systems are es-

entially *electronic* tollbooths. AVI systems conceptually permit roadway use to be priced in a very detailed manner. Such systems involve an electronic tag or "transponder" that is "read" by a wayside detector system while the vehicle travels at normal driving speeds. AVI systems can theoretically be used to price by type of vehicle, time of day, miles traveled, etc., and even could be combined with weigh-in-motion technologies to charge trucks and other vehicles that vary in weight or length without forcing them to stop. Although much has been asserted for this technology, much of its capabilities have yet to be demonstrated. However, AVI systems soon will be in place on nine San Francisco Bay Area bridges, and on State Route 91 in southern California where they will be used to implement congestion pricing.⁷ In addition, Singapore has developed a fully automated, regionwide variable road user charge system without toll gates. The main disadvantage of AVI systems is that they are costly to implement on a complex road network and on a region-wide basis.

- **Area licensing.** This method of pricing roadway use involves a scheme of stickers or license plate plaques that identifies the system of roads that a vehicle is permitted to

use (depending upon how much the driver has paid). The use of peak and other expensive capacity requires the driver to display a more costly license. Area licensing cannot easily be used to charge for the distance traveled, but because it is a low cost system for pricing on a region-wide basis, it was used initially by Singapore in its congestion pricing scheme. In the United States, area licensing is used mainly to manage on-street parking.⁸

3.2.2. Other Ways of Implementing Congestion Pricing

Although congestion pricing by its nature requires pricing based on *roadway use*,⁹ transportation planners sometimes recommend measures that are based on *vehicle use* or *vehicle ownership* as an alternative in those cases where pricing of roadway use is not practical.¹⁰ (See Figure 1.) These two categories of congestion pricing techniques must be viewed as only approximations to the theoretically correct policy.

Vehicle use-based measures that are frequently suggested include:

- **Parking charges.** Here, the notion is that by raising the price of parking at the destinations of congested corridors, some of the same effects of true road pricing are achieved. However, since travel route and distance traveled are not incorporated in

parking charges, these charges represent at best a crude approximation to true congestion pricing. Also, dropoff and through traffic, which can be a significant portion of traffic in congested areas, go unpriced by parking charge systems.

- **Gasoline taxes.** This is the current system of charging for roads. It is a reasonably good proxy for miles traveled, but lacks the ability to differentiate pricing by time of day or facility. Some transportation planners believe if the gasoline tax were made high enough, it would have similar effects to true congestion pricing. However, the evidence is that peak travel is not much affected by gas taxes within a practical range,¹¹ and to make the gasoline tax high enough to correctly price peak capacity would result in considerable *overpricing* of other travel.
- **VMT charges.** Because motor fuel taxes can be avoided partly by using a more fuel-efficient vehicle, the notion of a flat charge per mile traveled (paid, perhaps, at the time of license renewal), has gained currency as both a demand-modifying device, and a long-term replacement for motor fuel taxes. It is, by definition, a good way to charge by distance traveled. Like the gasoline tax, however, it does not have the ability to price peak travel differentially, or differ-

entiate by facility type. VMT charges high enough to affect peak driving behavior would seriously overprice off-peak travel. For these reasons, the VMT charge is generally not a good proxy for congestion pricing (although it may be useful as a replacement for the gasoline tax).

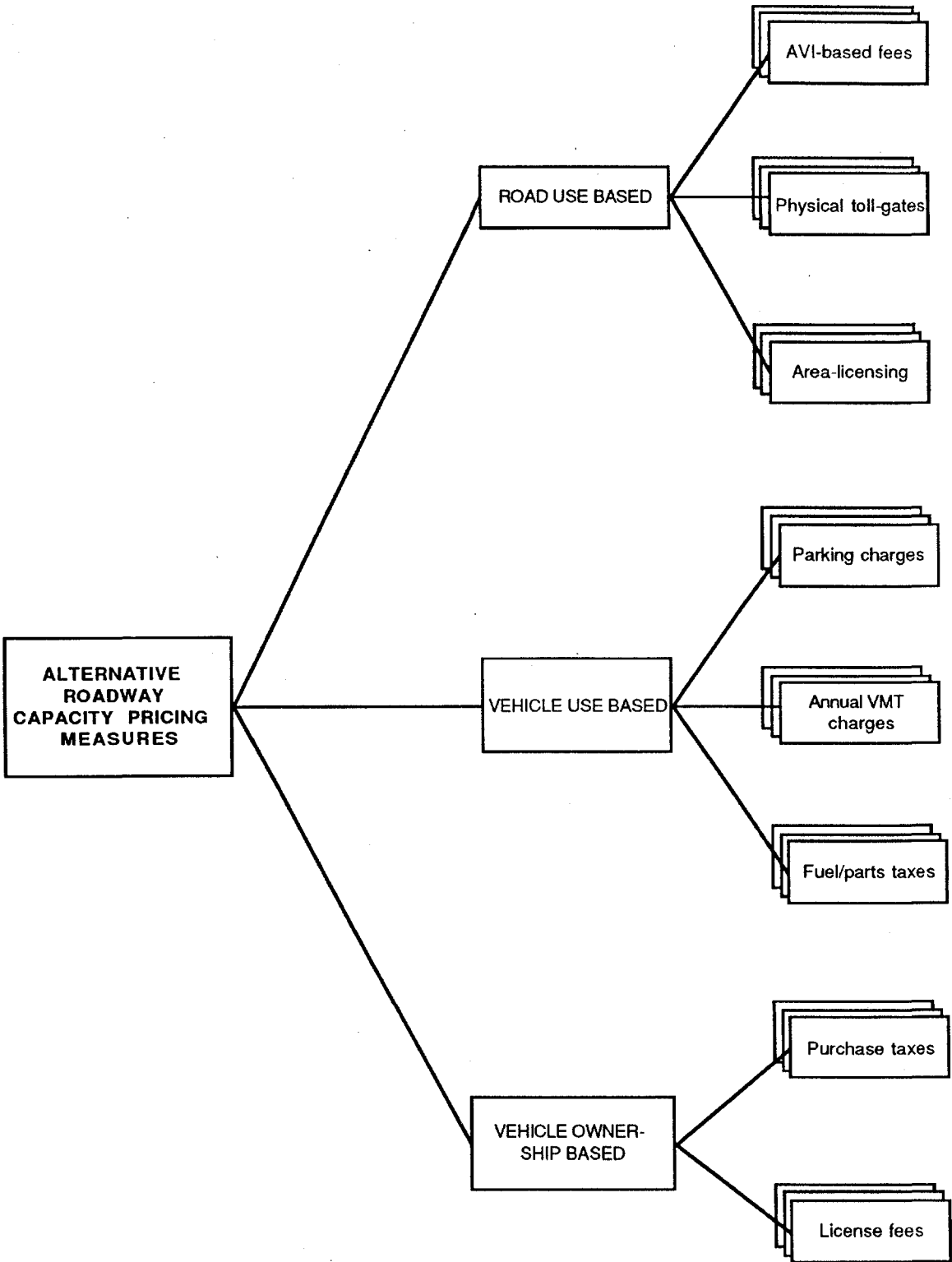
As these examples make clear, important functions of congestion pricing (namely, setting charges close to costs) are sacrificed by relying on vehicle use as a proxy for roadway use.

Even rougher approximations to congestion pricing are sometimes suggested in the form of special charges on *vehicle ownership*. Examples of this type of measure include:

- **Purchase taxes** charged upon sale or transfer of vehicles;
- **License fees** charged when vehicles are registered for roadway use.

Both types of fees exist today, of course, but proponents of this approach would charge very much higher fees. The logic of this strategy is that by influencing the ownership decision, vehicle use and, thus, roadway use also are affected. This approach is least able to properly price an individual trip on a particular road at a particular time; evidence from Hong Kong and elsewhere suggests it is ineffective as a solution for congestion problems.¹² For this reason, it is seldom recommended in lieu of congestion pricing.

Figure 1: Road Pricing Measures



3.3. Geographic Coverage

These technological options for congestion pricing interact with the geographic coverage that is necessary or possible. Modifying slightly the typology used by Bhatt¹³ in his report to the Federal Highway Administration, the geographic coverage of a congestion pricing system can be categorized in order of increasing levels of geographic coverage:

- **Spot** coverage affecting a single segment of a facility, such as a selected on-ramp or entry point to a freeway, tunnel or bridge;
- **Facility** pricing, whereby a single facility (such as a particular freeway or bridge) is priced over its length at all access points;
- **Corridor** pricing, whereby pricing is implemented on all of the alternative roadway facilities serving a corridor;
- **Area** pricing, involving pricing of all roadways in a selected area of a region;
- **Regional** pricing applied to all appropriate facilities in the region.

Generally, the effectiveness of congestion pricing is the greatest with broad geographic coverage, and the problem of spillover of traffic from priced to unpriced facilities diminishes with increased coverage. Offsetting these advantages is the cost of implementation, which rises sharply as geographic coverage increases, and as roadways with light use are priced. The issue of geo-

graphic coverage is a crucial one, and will be discussed in detail later in this report.

4. THE ECONOMICS OF CONGESTION PRICING: THE THEORY

This section discusses the theory of congestion pricing. In particular, the section describes how economists believe congestion pricing would work if it were able to be applied in a conceptually "pure" manner. (In the section following this one, we evaluate the extent to which a *practical* implementation of congestion pricing delivers the benefits asserted for the policy in theory. As we will see, many of the assumptions economists make when modeling congestion pricing abstract considerably from real-world conditions.)

The theory of congestion pricing is well established, and probably enjoys more agreement among economists than most economic policies. The potential of congestion pricing has been demonstrated theoretically many times, but real-world confirmation has been limited to the few sites where it has been implemented. By extension from other, related real-world examples (such as the telephone system), however, congestion pricing is potentially an important way to reduce congestion, and spare society significant transportation costs, and should yield positive economic welfare benefits (if properly applied).

Conceptual advantages aside, economists have not done a good job

of communicating the logic of congestion pricing or of addressing the details of how a congestion-priced roadway system would be administered. Key issues that deserve more articulation include:

- How should congestion prices be set? Should they be applied to existing roads, or just new roads?
- How will decisions about new roadway capacity be made?
- Should the revenues only be used for roads, or can they be used for transit as well? Should they be used only in the affected corridors?
- How does a congestion pricing scheme relate to existing methods of road finance? Is it a complete replacement for fuel taxes?

In this section, we provide answers to these questions. Later in this report, we shall talk about the need to accommodate some of these conclusions to real world institutional settings, identify the winners and losers from implementation, and identify administrative and institutional issues, such as who should operate the congestion pricing system.

4.1. Setting Congestion Prices

Setting congestion prices correctly (close to the costs occasioned by each user) is important if the policy is to be fair and is to produce economic benefits. It follows from the theory of congestion pricing that congestion prices should not be

viewed as tools for manipulating people's driving habits. Rather, congestion prices should reflect the cost of using roadways.

In this section, we outline the general methods economists use to calculate the appropriate level and structure of congestion prices. As we shall see, precise calculation of the correct level of congestion prices requires information on the performance of individual roadways, the value of users' time, and other technical factors.

The assumptions and values used in calculating congestion prices need to be researched carefully, and examined critically before implementation of congestion pricing. Although such calculations were made by a team of economists 20 years ago for San Francisco Bay Area roads,¹⁴ to our knowledge, no similar research effort has occurred to date in Oregon.

(Throughout this document we shall refer to the theoretically correct implementation of congestion pricing as "true" congestion pricing; by that we mean congestion pricing which is done so as to closely reflect actual costs of use. In addition, properly applied congestion pricing requires that the revenues from congestion pricing be utilized in the most economically-efficient manner.)

Implementing congestion pricing does not just affect price levels. As we will see, the setting of congestion prices has to be coordinated with the highway investment process. The appropriate congestion prices on the existing road system

differ from the prices that should be charged after new additions (or deletions) to the roadway system are made.

4.1.1. Pricing Existing Roads

We turn first to the pricing of existing roads. Most roadways and bridges are already in place, and in some cases they already have been "paid for" in the sense that bond debt or other borrowing used to finance their construction has been retired, perhaps long ago. Does that mean that the appropriate price is zero (or only some small amount for maintenance)?

The answer is, "No." The physical costs of concrete, land, etc. may long since have been paid for. But another important cost of peak period roadway travel is a recurring one: the time that users spend on the roadway and the delays they cause to one another. On existing roads, time costs are the most important resource to manage, and congestion prices must be set to properly allocate time costs among users.¹⁵ This is the key element in the logic of congestion pricing, and is the most difficult to communicate to people unfamiliar with congestion pricing.

Proper allocation of time costs requires congestion pricing because of the way vehicles physically interact on a busy road. When drivers add their vehicles to the traffic stream on a busy road, they slow

down traffic and delay other travelers; this is the very nature of congestion. Although the additional drivers may be content with their own portion of the congestion burden, they are oblivious to the costs they are imposing on others, and have no incentive to consider these so-called *spillover effects*.

The spillover effects are not trivial. Speeds drop quickly as roads become congested. For a typical older freeway that is operating at very near its practical capacity, for example, an aggregate delay of up to an hour is experienced by other traffic for each new vehicle that tries to use the roadway.¹⁶ Figure 2 below illustrates this effect for a typical, urban freeway. Even at lower traffic level, an additional vehicle imposes time burdens of 2 to 15 minutes of delay on other users of a busy roadway. If the time of other users is worth even just \$5 per hour, one vehicle can impose a significant burden on other users.

The essence of congestion pricing is that drivers should pay for the aggregate delay they impose on other drivers.

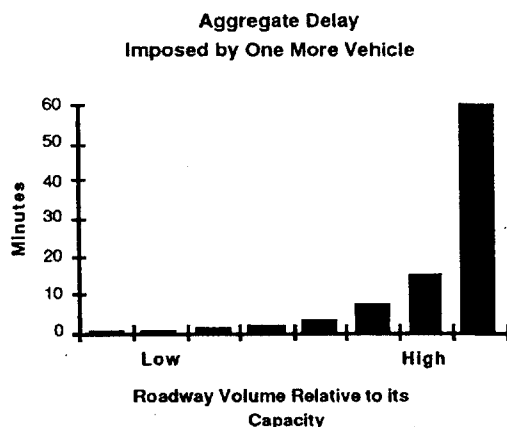
The essence of congestion pricing is that drivers should pay for the aggregate delay they impose on other drivers. If they are not asked to pay these costs, a tremendous time burden is imposed on other users.

An additional implication of congestion pricing is that the appropriate price is likely to vary for different roadways. This is because roadways with very different traffic volumes, alignments, grades, or other factors exhibit traffic flow be-

havior (and, hence, spillover costs) that is different. Congestion pricing theory thus implies that properly applied, road prices should vary by roadway to the extent that conditions vary significantly.

Figure 2 makes clear that the correct congestion price depends on traffic volumes. The price will be high on roads operating near capacity (very congested) because the spillover effects are the greatest there. Conversely, when traffic is very light, the vehicles interact very little, and spillover costs are negligible. The appropriate congestion price is correspondingly small, or even zero. (Drivers would still need to pay for wear-and-tear and other roadway operating costs.)

Fig. 2: Delays Rise Sharply with Increased Traffic Volumes (Keeler and Small, 1977)



The correct prices depend upon the level of congestion, the value of time, and people's responsiveness to prices. The calculations are not difficult, but they must be tailored to the conditions of a region.

The process of determining the proper congestion prices on existing roads is as follows:

- The roadway segment to be priced is identified, and traffic volume data obtained for the time period and direction of travel on the roadway that is to be priced.

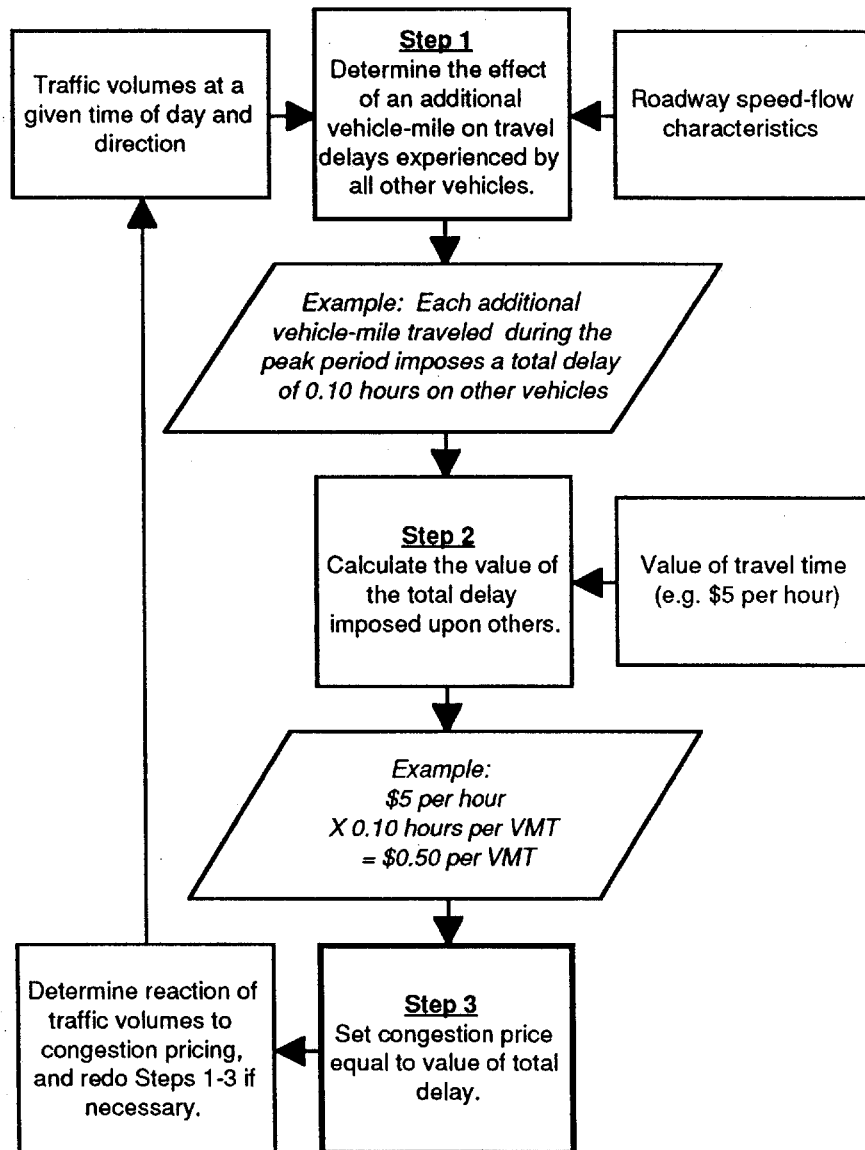
- Engineering information on the behavior of travel speeds under various traffic volume conditions is obtained. From this data and the traffic volume, the effect of an additional vehicle on total traffic delays can be estimated.

- Value of time information is obtained. This is usually from special statistical, travel demand studies, but also can be approximated by knowing the income level of the typical traveler on the roadway.

- The appropriate congestion charge is calculated. It is simply the value of the delay imposed by the vehicle times the value of time that other travelers place on that delay.

If the resulting congestion price were levied, of course, traffic volumes during the period being priced might change. Consequently, the analysis outlined above needs to account for the effect of the pricing itself on traffic volumes in order to derive the appropriate price. The following flowchart illustrates how an actual calculation might proceed:

Setting congestion prices on existing roads



4.1.2. The Effect of New Roads on Congestion Prices

Thus far in this discussion, congestion prices seem to bear no obvious relationship to the cost of *building* roads. They seem to be calculated only from the congestion burden calculation (which mostly relates to time penalties). In fact, however, if the process of building new roads is properly integrated with congestion pricing, congestion charges ultimately do bear a relationship to construction costs. The reasoning is simple, but frequently overlooked in discussions of congestion pricing.

The logic is as follows. Both congestion pricing and construction of new capacity are alternative ways to serve additional vehicles; in some circumstances, it may be less costly for society to build new capacity than to force additional vehicles to use the existing, busy roads at high congestion prices. Therefore, roadways should be improved as long as the cost of serving additional vehicles with the improved road is less than the cost involved in serving them on the existing roads (indicated by the congestion price).

An example may be helpful here. Let us say that the cost of adding another vehicle to a one-mile segment of an existing roadway is 15 cents (as indicated by the current congestion toll). If, through roadway improvements instead, it would cost 18 cents to accommodate another vehicle, society would lose 3 cents by

building the improvement. In this case the existing road system is said to be *overbuilt*, because additional capacity is not justified.

Now take a second case, where the roadway improvement costs 10 cents, rather than 18 cents, per vehicle mile. In this case, it is better to build new capacity rather than consume 15 cents of other drivers' time. In this case, we would conclude that the current roadway is *underbuilt*, and that new capacity is warranted.

At some point, of course, as new capacity is added to an underbuilt roadway, the spillover costs (and thus the appropriate congestion price) are reduced, so it becomes cheaper to serve travelers without additional improvements. The import of this is that *roadways should be improved until the congestion price is equal to the incremental improvement costs*. Thus, on a roadway that is neither underbuilt nor overbuilt, the price calculated from the construction and operating cost of new capacity *or* from the congestion penalty are the same. Thus, congestion prices and road building costs are related, when pricing is properly integrated with decisions to build new roads.

In the 1970's, a National Science Foundation study in the San Francisco Bay Area calculated the appropriate prices for that region under the assumption that new roadway capacity is properly adjusted over time. In today's dollars, the study found that most urban freeways and bridges would be priced at 6 to 15 cents per vehicle

mile in peak periods (with a few as high as 60 cents).

The calculations for the Bay Area are specific to the road construction cost, time values, and other features of that region, and may not apply to Oregon. Clearly, before congestion pricing is implemented, much research needs to be done to calculate the appropriate congestion charges.

4.2. Building New Roads

Using congestion pricing does not mean that no new roadway capacity will be built. Indeed, the process of setting congestion prices is intimately related to highway investment decision making. By pricing existing roads with appropriate congestion tolls, it becomes relatively easy to identify the road segments that are candidates for improvement: the candidate segments are those on which the congestion prices are high, relative to the cost of defraying roadway improvements in that corridor. Simply put, if congestion prices are, say, 6 cents per vehicle mile, but new capacity (when *amortized* over time and spread over the vehicles that benefit from the capacity) is only 4 cents per vehicle mile, the new capacity likely is worth building.

Congestion pricing dovetails directly with a benefit-cost based approach to highway investment decision making. The steps in the investment decision process are:

- Identify roads with persistently-high congestion prices,

and screen for those whose prices are high relative to the amortized cost of new capacity;

- Determine the response of the road network to the additional capacity. (I.e. estimate what traffic levels and the appropriate congestion prices would be over the lifetime of the new capacity.)
- Measure the costs and benefits associated with the additional capacity, and refine the project to maximize net benefits;
- Build the projects with the highest net benefits,¹⁷ and price them correctly.

There are many technical issues, of course, in implementing this decision process. It requires proper measurement of roadway costs and proper attribution of these costs to users at various times of day, to various vehicle types, etc.¹⁸ But congestion pricing streamlines (and enforces objectivity on) the highway investment process.

4.2.1. Transit as an Alternative to New Roads

Congestion pricing is perceived by some policy makers as a potential source of revenue to finance transit systems; their view is that transit should be considered as an alternative to new roadway capacity.

This may make sense, but it depends upon the particular conditions in the affected corridors. To clarify this point, let us take two

specific cases. First, imagine that the existing roadway system is *underbuilt*. (That is, further roadway improvements are justified according to the feasibility test discussed earlier.¹⁹) When the roadway is improved, by definition, the congestion tolls will collect only enough revenue to finance the improvements. Thus, in the case of underbuilt roadways or corridors, there will be no excess revenue to divert to transit finance.

The second case is one where roadway improvements are not economically justified. That is, the existing system is *overbuilt*, and congestion tolls are being levied on existing roads, but the cost of roadway improvements is too high to justify expansion. Since the congestion toll revenues collected very likely exceed the operating and maintenance cost needs of the roadway, there will be "surplus" revenue collected on the roadway.

A similar circumstance would arise if public policy arbitrarily banned use of the revenues on new roadway capacity even though it was justified. In that case, too, much more revenue would be generated (by the pricing of the existing roadway) than could be used in operating and maintaining the existing facility.

Financing transit services is a possible use of the "surplus" revenues under either of these circumstances. However, the only thing economic theory says is that

surplus revenues should be used to the benefit of those affected by the pricing policy. In the extreme, if the revenues are instead wasted on projects that provide no economic benefit to affected parties, congestion pricing will *reduce* the economic welfare of the affected community; In addition, in the case where the roadway capacity is appropriate, but arbitrarily banned by public policy, economic theory says that there will be additional losses of economic welfare. Clearly, efficient use of the revenues (whether on transit, additional roadways, or otherwise) is central to the efficient functioning of a congestion pricing system.

Improper use of the revenues also raises public perception problems. If the revenues are used on a beneficial project, but one which does not benefit those affected by congestion pricing, the congestion pricing policy (properly) will be perceived as an unfair tax. (See the discussion

below of the likely "winners" and "losers" from congestion pricing.) From a practical, political standpoint, it will be difficult to implement congestion pricing if those affected by congestion pricing have the perception they are not getting anything for it. The Hong Kong congestion pricing system failed to be implemented partly for this reason; the perception was that the toll revenues were going to be used for general fund purposes.²⁰

Viewed from this perspective, transit improvements may or may

Transit improvements may or may not be the most beneficial use of surplus road pricing revenues.

not be the most beneficial use of surplus road pricing revenues; it will depend upon the efficiency of the transit spending, and to whom the benefits flow. By implication, therefore, transit improvements should pass a benefit-cost test similar to that used to evaluate roadway improvements. If *no* transportation improvement passes muster, then most economists would recommend that the revenue be returned to the affected highway customers. This could be done through reductions in other taxes, or through some other lump-sum payment scheme that benefits those affected by congestion pricing, without negating the desired congestion pricing effect. Commuter allowances and tax credits are two mechanisms that are frequently discussed in this regard.²¹

In summary, if the existing roadway system is underbuilt, the cost of roadway improvements will fully utilize congestion pricing revenues. But if the roadway system is overbuilt, surplus revenues are available, and financing efficient transit services may be justifiable.

4.3. A Comparison with the Current System of Road Finance

Is congestion pricing radically different from what is practiced in Oregon today? The answer is both "yes" and "no". It is highly unlikely that implementation of congestion pricing would completely eliminate

fuel taxes or political decisionmaking in Oregon's highway policy process.

Oregon currently has a policy that prices highway services and makes decisions about new highway capacity. The main differences between the current policy and a congestion pricing system are in the structure of prices, and in the criteria used to make decisions about roadway improvements.

On the pricing side, the current system of highway finance uses flat fees, in the form of motor fuel taxes (except for heavy trucks, for whom a weight-mile tax is employed). A comprehensive congestion pricing system, in contrast, would institute a differentiated structure of fees, varying by time of day, type of road, and type of vehicle.

It is highly unlikely that implementation of congestion pricing would completely eliminate fuel taxes or political decisionmaking in Oregon's highway policy process.

As a practical matter, however, the nature of traffic on some roads (rural roads, for example) may be such that a flat, gasoline tax or VMT fee is all that is appropriate and would be the most practical and efficient method to use. In essence, in such settings the current fuel tax system may be a reasonable proxy for the correct pricing structure. But for the busy and expensive facilities in the state, congestion pricing would establish a quite different pattern of prices.

Congestion pricing also has different implications for the types of users on the highways. For example, under the current system, rising lev-

els of congestion do not induce bus or carpool use as a way to economize on the fixed capacity of the roadway, as would be desirable. This is because (from the individual commuter's perspective) the congestion delay is not avoided simply by riding in someone else's vehicle. In contrast, a congestion price *can* be reduced by sharing it with other riders, providing a strong incentive for bus or carpool use.²²

On the investment side, the main difference is in the signals that are used to identify roadways or corridors needing improvement. Without congestion pricing, it is very difficult not to focus investment on the most congested corridors, even if those investments cost more than they provide in benefits.²³ In contrast, congestion prices help moderate congestion, and reduce the "false" signals sent by unpriced, congested roads.

With congestion pricing, there also is a more direct relationship between the revenues and costs for individual road segments or projects, thereby facilitating feasibility analysis on a segment by segment basis. This means that it may be easier to rely on financial criteria to evaluate roadway projects. This, in turn, may make the debate over allocations of road finance resources less politically-charged, since it will be clearer who pays and who benefits.

5. THE CHALLENGES OF BRINGING THEORY INTO PRACTICE:

The potential benefits of implementing congestion pricing may be very high, both in efficiently managing the existing roadway network, and in making sure that road improvements are prudent. In some sense, congestion pricing is a way to introduce market efficiency into the management of our highway system.

Even the most enthusiastic proponents of congestion pricing, however, recognize that many technological, political and practical problems arise when one tries to adapt the theory to reality. In this section, we discuss issues that arise when the theory of congestion pricing system presented above has to be accommodated to Oregon's conditions.

We do not present solutions to all of these problems. They are presented here to underscore the breadth of challenges that must be met if congestion pricing is to be implemented in Oregon.

5.1. How "Pure" Does Congestion Pricing Have to Be?

The reality of applying congestion pricing in Oregon is that it will not be applied with complete, theoretical precision. For example, it is hard to imagine the high degree of variation in pricing (by time of day, facility, etc.) that congestion pricing prescribes can be applied ubiquitously in Oregon. Oregon has

over 15,000 miles of roadway²⁴ and 3.1 million registered vehicles.²⁵ It is hard for some to imagine applying pricing to all of these roadways and vehicles.

Practical people also recognize that calculation and application of the correct congestion prices will not be done perfectly. This raises the question of how much of the benefits of congestion pricing we shall get if it is not applied perfectly.

Congestion pricing represents a very different approach to managing the highway system, and requires rigor and integrity in making the needed calculations. Nonetheless, it is not likely that all of its features will be implementable at once. It is helpful to know what is lost by adopting an imperfect version of the scheme.

The main conclusion set out here can be stated succinctly: The crucial feature of congestion pricing is charging prices that relate to the spillover costs of congestion. Without correcting this aspect of the current pricing system, congestion and its economic costs will persist.

Under the right conditions, the level of geographic coverage and the precision and differentiation of pricing can be less than perfect without eliminating most of the benefits of congestion pricing. However, any deviations from proper pricing should be evaluated rigorously, and embraced with caution.

5.1.1. Coverage

The comprehensiveness, or coverage, of the congestion pricing system also is an important determinant of its effectiveness. This raises the question of just how much of Oregon's roadway system would need to be subject to congestion pricing.

In Oregon, the roadways with the most severe congestion conditions are primarily urban freeways and principal arterials, as indicated in Table 1. In contrast, rural freeways and other primary roadways generally do not suffer from high volumes relative to design capacities. Thus, although a relatively small portion of Oregon's total road *mileage* is operating inefficiently from an economic standpoint, these roads carry a substantial proportion of total VMT.

This is exemplified by traffic conditions in Oregon's largest city. Portland's freeway and arterial congestion problem is now characterized as serious, when compared with other cities.²⁶ Approximately 24 percent of the regional freeway network in Oregon experiences recurrent congestion in one of the peak periods (AM or PM).²⁷ Thus, urban areas such as Portland likely are the primary candidates for congestion pricing.

Three criteria should guide decisions about geographic coverage of a congestion pricing system:

- The system should cover those roads that experience significant spillover costs from congestion. Although this needn't include short stretches of minor roads, it should include all important, significantly congested facilities, where aggregate time losses are significant.²⁸
- The system also should cover roads which might become congested, or otherwise be severely impacted, if pricing were applied elsewhere. Hence, if freeways are to be priced, and arterials would otherwise become congested

or subject to significant deterioration in safety, etc. (as drivers divert to local roads), the arterials should be priced, too. The control of diversion is a particularly important aspect of the performance of congestion pricing. If the efficiency gains on the priced facilities (say, the freeways) can only come at the expense of the performance of unpriced neighborhood streets, a serious equity and efficiency problem is created. (At a minimum, the affected neighborhoods would be well advised to oppose the policy.)

- Within a region, coverage should not be selective; for example, if both central city-oriented freeways and subur-

Table 1: Traffic Characteristics of Oregon Roads, 1993
(Office of Highway Information Management,
"Highway Statistics 1993")

Road Type	Traffic Characteristics					
	Annual VMT (million of miles)	% of Total VMT	Daily VMT per Lane Mile	% of Mileage at V/C>0.70	% of Mileage at V/C>0.80	% of Mileage at V/C>0.95
Urban						
Interstate	3,343	11.8%	12,918	57.5%	52.1%	32.9%
Other freeway	1,023	3.6%	12,625	67.9%	50.9%	28.3%
Principal arterial	4,151	14.6%	5,652	21.0%	13.9%	6.9%
Minor arterial	2,331	8.2%	2,653	5.5%	5.0%	1.7%
Collector	1,322	4.7%	1,383	4.9%	3.1%	2.2%
Local	1,388	4.9%	278	na	na	na
Urban Subtotal	13,558	47.8%	1,715	12.0%	9.1%	4.9%
Rural						
Interstate	3,735	13.2%	4,321	5.5%	2.9%	0.9%
Other principal art.	4,385	15.5%	1,896	6.3%	4.4%	1.2%
Minor arterial	1,817	6.4%	1,083	0.8%	0.0%	0.0%
Major collector	2,292	8.1%	337	0.0%	0.0%	0.0%
Minor collector	965	3.4%	170	na	na	na
Local	1,600	5.6%	35	na	na	na
Rural Subtotal	14,794	52.2%	233	1.5%	0.9%	0.3%

ban arterials are congested, both should be priced, so as not to distort travel and location decisions within the region. Within the state, however, it probably is possible to price one metro area's roads and not another's without fearing that residents and businesses will move to the unpriced areas of the state. Indeed, properly-implemented congestion pricing *improves* the operational and financial performance of the transportation system, which should not cause migration from the affected region. In addition, location decisions between regions tend to be more sticky than decisions to move within a region, limiting any dislocation effects.

If coverage of the congestion pricing system does not follow these guidelines, the benefits of congestion pricing will be significantly lower than they otherwise would be. Even if the benefits of reduced time in congestion and other cost savings are positive on balance, any imbalances in treatment (freeways vs. arterials, central city vs. suburb, etc.) will be viewed as unfair, and the policy is unlikely to be acceptable.

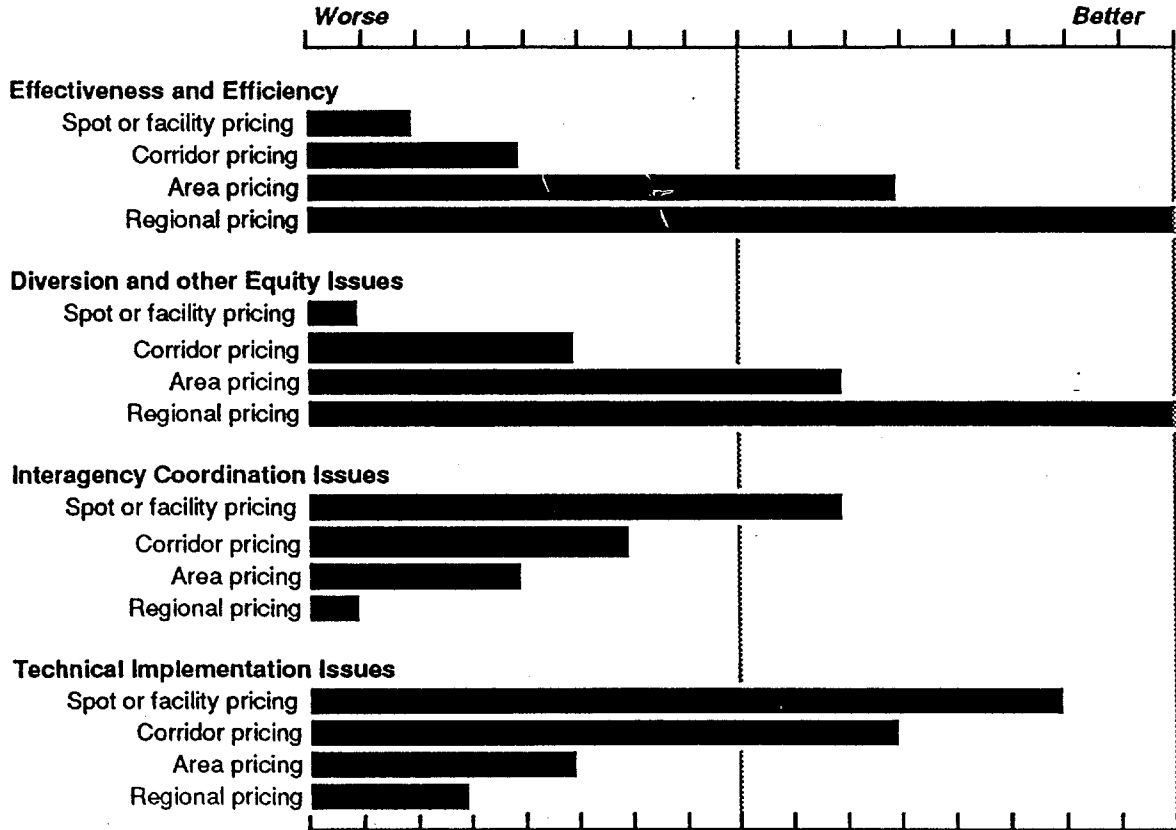
Unfortunately, although the efficiency and equity impacts of congestion pricing are generally better in area or regional applications of the policy, issues of interagency coordination and the technical challenges of implementing the policy become *more* difficult. This conundrum is illustrated pictorially in Figure 3, for

various coverage levels of congestion pricing policy.

It is likely all but the most diversion-prone, spot applications of congestion pricing will yield economic efficiency benefits in excess of their cost. However, the balance of the forces depicted in Figure 3 have a number of implications for the practical course of congestion pricing policy:

- Small projects or implementations of congestion pricing may pose equity issues that overwhelm the efficiency implications of those projects;
- Developments in the technology of congestion pricing may be needed to facilitate regional, or wide-area coverage. Implementation of congestion pricing in the near term will require a mixture of simple and technically-advanced pricing mechanisms. Simple pricing strategies, such as gasoline taxes or area licensing, will remain important on much of the roadway network until superior, cost-effective pricing technology emerges.
- Mechanisms of interagency coordination should be developed before regional implementations of congestion pricing are attempted. (We discuss such mechanisms in more detail below.)

Fig. 3: Balancing the Advantages and Disadvantages of Increased Geographic Coverage of Congestion Pricing



The importance of these considerations were underscored recently by the decision of policy makers in London to postpone implementation of their much-discussed congestion pricing scheme until after the year 2000. Although the potential benefits of congestion pricing had been carefully established, fairly pricing the complex region would have required a satellite-based pricing technology, which was sufficiently costly to compromise the overall cost-effectiveness of the policy.²⁹

5.1.2. Phasing

As a practical matter, full geographic coverage is unlikely to be accomplished overnight, even if technological issues did not exist. An overnight, abrupt change in pricing policy would be very disruptive, since a variety of agents—commuters, transit operators, businesses, etc.—will need to adjust to the new price levels. This calls for ways of phasing-in congestion pricing.

There are three possible ways in which congestion pricing could be phased:

- **Segment-by-segment phasing.** In this approach, congestion pricing would be announced for all affected segments, but only the segments that are the most important to price (or the easiest), would be implemented at first;
- **Single-lane phasing.** This involves applying congestion pricing to only one or two lanes of multi-lane facilities. In essence, for some period of time, the facility would then have both priced and unpriced lanes. Some believe this type of phasing eases the burden on poorer individuals with low time values, since they can choose to remain in the congested, but unpriced lanes.
- **Price level phasing.** In this method, the long-run changes in price are announced, but implemented gradually. This approach has the advantage of clearly communicating the long-run structure and level of congestion prices, while still giving those affected by the policy an opportunity to adjust to it.

Phasing is a very practical solution to the inherently difficult problem of introducing fundamental change. From another perspective, however, phasing is delay, and imposes its own costs. If congestion pricing really offers the prospect of saving valuable time and other soci-

etal resources, everything else being equal, it should be implemented sooner rather than later. In practice, therefore, the nature of the disruptions caused by rapid phasing will have to be balanced against the costs of delaying important policy changes.

5.1.3. Level and Structure of Congestion Prices

Calculation of the ideal level of congestion prices requires data on the traffic levels on road segments, the performance of those segments to different levels of traffic, information on the time value characteristics of travelers, and information on the likely reactions of travelers to pricing. Typically, this requires both household survey-based travel demand studies and engineering or observational studies of individual roadways.

The prices should then be applied on a per-vehicle-mile basis to price longer trips appropriately. In addition, to the extent that traffic changes over time, congestion prices should change accordingly. Realistically, scientific analysis will be unable to anticipate or model precisely all of the reactions to pricing in the real world.

Fortunately, as a practical matter, once congestion pricing of the approximate magnitude is in place, the level of service on the road should improve noticeably, so that small "errors" in the pricing level can be tolerated from an efficiency standpoint. In Singapore, for example, an area licensing scheme was

used to implement congestion pricing. Area licensing obviously does not allow for accurate pricing by mileage traveled, and there is agreement that the implicit prices were not correct. Despite this, studies of the Singapore congestion pricing system suggest that there were significant net benefits even of that clearly "second-best" policy.³⁰

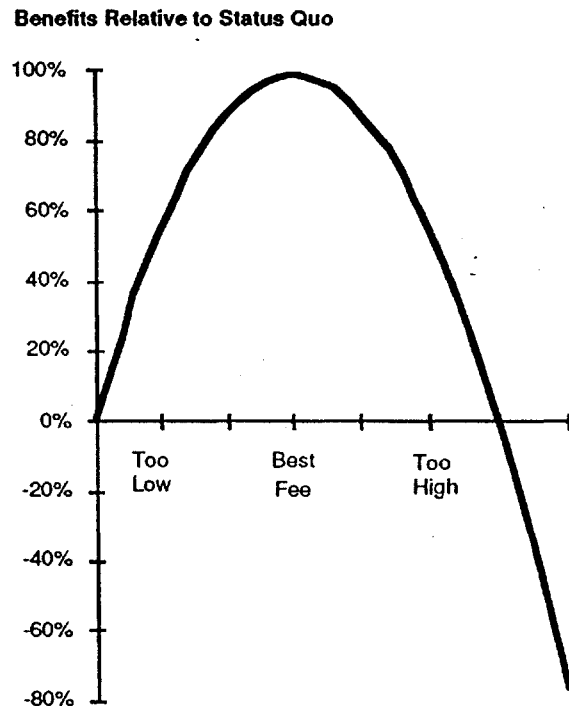
Similarly, although each period of travel should have its own special price, the most important signal sent by the road pricing system is the difference between the peak and off peak prices. Very fine distinctions over the course of the day, while theoretically appropriate, are approximated closely by a simpler peak/offpeak, or peak/near-peak/offpeak structure.³¹

This does not mean, however, that road prices can be set arbitrarily. On the contrary, prices that are too high are particularly troublesome, as they may actually be worse than having prices too low, actually making net benefits less than the *status quo*. This is illustrated by a modeling study done in Edinburgh in 1994, displayed in Figure 4, which found that if prices are too high, roadway capacity is wasted and congestion pricing becomes a tax mechanism, rather than a pricing system.

If prices are too low, much of the benefit of congestion relief will be lost, and the road system's performance is unlikely to be improved

over current circumstances. Thus, it is crucially important that road prices not be set arbitrarily, and that they not be dramatically "too high" or "too low".

Fig. 4: Benefits From Pricing are Reduced Sharply by Large Pricing Errors



Source: A.D. May, 1994.

It is crucially important that road prices not be set arbitrarily, and that they not be dramatically "too high" or "too low".

The same issue of precision arises with changes *over time* in congestion pricing. Some economists recommend that the prices should change only gradually over time, so that travelers can forecast their *out-of-pocket cash* costs accurately and make

other adjustments; other economists recommend that the prices should change dynamically (minute by minute) to ensure consistent traffic conditions, so that travelers can forecast their *travel time* accurately. (State Route 91, opening in

California in 1995, will be using dynamic pricing.)

As a practical matter, these are refinements that can be optimized once the system is in place; it is likely pricing patterns would be reasonably stable once traffic conditions became accommodated to the operation of the congestion pricing scheme.

Theory also says that congestion prices should vary by *type of vehicle*. Trucks, buses, cars with trailers, campers, and other heavy, tall, or wide vehicles impose higher spillover costs than passenger vehicles, both in terms of congestion delay and roadway design costs. Once again, the most important variations should be incorporated in the pricing structure, with very fine distinctions being less important.

Gross underpricing or overpricing needs to be addressed, because it leads to inefficient use of the roadway by such vehicles, and results in roads being built to heavier or lighter standards than may be economically justified.³² On the other hand, incorporating minor variations of prices within classes of trucks or automobiles is less important.

The criteria that should be used to guide development of the pricing structure thus are basically threefold:

- The pricing structure should capture the significant variations in costs that occur because of traffic levels, vehicle type, and by roadway. Very fine differentiations are un-

likely to be materially significant;

- Gross over- or underpricing, however, should be avoided. Doing so imperils both the economic benefits of the policy, and its political acceptability;
- The pricing structure should be transparent so travelers can make reasonable forecasts of their travel costs and time, and make appropriate adjustments to their behavior.

The pricing structure can evolve over time as we learn more about behavior or encounter unforeseen problems with congestion pricing. Indeed, a virtue of congestion pricing over other demand-side policies such as land use policies or employer-based trip reduction programs is that the policy can be changed relatively easily (literally overnight, if necessary) to accommodate new facts or circumstances.

5.1.4. Linkage to New Roadway Decisions

A benefit of congestion pricing discussed earlier is its potentially rationalizing effect on the highway and transit investment decision process. By more closely linking the revenues and costs of individual roadways, more efficient and transparent decisions about new roadways can be made.

It is possible, conceptually, to implement congestion pricing without linking it to a formal, benefit-cost type investment decision process. In this case, congestion pricing can en-

sure that the roadway system is *used* efficiently, but cannot guarantee that improvements or expansions are of appropriate scale.

The efficiency effects of congestion pricing are maximized by embedding it in a cost-effectiveness based, project evaluation process. To the extent congestion is reduced significantly by pricing, however, the policy may buy some time to develop such an evaluation process. However, it does *not* automatically follow that congestion pricing will result in a policy of no roadway expansion. Under many circumstances, improvements in roadway capacity or performance may be the most cost-effective way to provide benefits to private automobile and transit users.

5.2. Technical Feasibility

Conceptualizing the congestion pricing system is only the first step of its implementation. Actual implementation requires a toll collection technology and information on travel demand and roadway costs. The technology must be able to identify each vehicle by location, time and distance of travel, and charge it an appropriate rate depending on those characteristics. Toll evaders must be identified and cited and all of this traffic management must be accomplished without stopping or significantly slowing traffic.

5.2.1. Toll Collection Technology

A low cost and reliable technology for pricing roadways in the

manner required by congestion pricing was not available ten years ago, but is slowly developing.

The precise technology to use depends on a number of factors, including the geographic coverage desired, the degree of differentiation in prices required, as well as community perceptions of intrusiveness. In addition, the implementation costs of any of the available technologies will vary with local conditions.

The technologies are listed below. They are listed in descending order of their overall ability to implement a detailed congestion pricing structure.

5.2.1.1. Automatic Vehicle Identification (AVI) systems

AVI systems have the potential to implement very detailed congestion pricing structures. Prices can be varied by vehicle type, by miles traveled, and by specific roadway segment.

This sophistication comes at a price; AVI systems are expensive to develop. (Being automated, computer-based systems, operating costs of AVI systems are low, however.) Roadways must be equipped with wayside electronic detectors, and vehicles must carry electronic transponders. In addition, a fiber optic or electronic link from the wayside devices to a central computing facility is required to verify transponders and to handle accounting functions.

The most advanced systems employ satellite location systems, of-

fer surveillance cameras that automatically read (or record) license plates to apprehend scofflaws,³³ and shortly, will be able to sense (using infrared detectors) the number of passengers in a vehicle, to facilitate carpool exemption programs if needed.

AVI systems increasingly dominate physical tollgates as a collection technology because they are generally cheaper, when the land costs, congestion costs, and labor costs of physical tollgates are considered. In simple installations on existing bridges and tollroads, AVI is being installed for approximately 25 percent of the capital cost of manual systems, with incremental operating costs that are 3 percent of the manual system.³⁴ On a per point, per lane basis, the roadway components of the AVI system average less than one-tenth of a cent per VMT, much less than manual or automatic physical tollgates. (See Figure 5, which reports actual costs from the Dallas North Tollway, the Oklahoma PikePass, and the Florida Toll system.) In addition, AVI systems offer the potential to provide other services, such as traffic management data, that can replace other, existing programs.

For the most advanced installations of AVI technologies, in urban settings, applied to freeways and major arterials, operating expenses plus amortized capital costs of AVI systems are approximately \$50 to \$200 per priced vehicle per year (or 0.5 to 2 cents per average vehicle mile), including all electronic sys-

tems, surveillance and policing costs, and system operating expenses.³⁵

Such a system is obviously only economical to deploy in a high traffic-volume setting with limited detector locations and pricing points. In such settings, costs (per vehicle mile) may be brought down to only fractions of a cent; in settings where appropriate congestion prices are several cents per vehicle mile, they obviously are a cost-effective alternative. (See Figure 6.)

In settings such as low volume arterials, with many intersections and roadway access points, however, the AVI system is expensive to install relative to the traffic coverage. Since, as noted above, amortized costs can exceed one cent per vehicle mile, the advisability of using AVI in these settings will depend upon the severity of congestion, and total traffic volumes. It would be bad economics to spend more than one cent per vehicle mile to collect a congestion toll of less than one cent. Figure 6 displays the simulated costs per VMT of complete coverage in various road network and traffic density settings.

Overall, AVI is economical to install in those settings where congestion pricing is most meaningful—high volume, congested facilities. But it will have to be combined with other technologies, such as area licensing, to accommodate traffic diversion problems, or to span large, low-density areas.

Fig. 5: Costs Associated with Manual, Automatic, and AVI Tolling Technologies
(per passage point, per lane in a high-traffic setting; Pietrzyk, 1994)

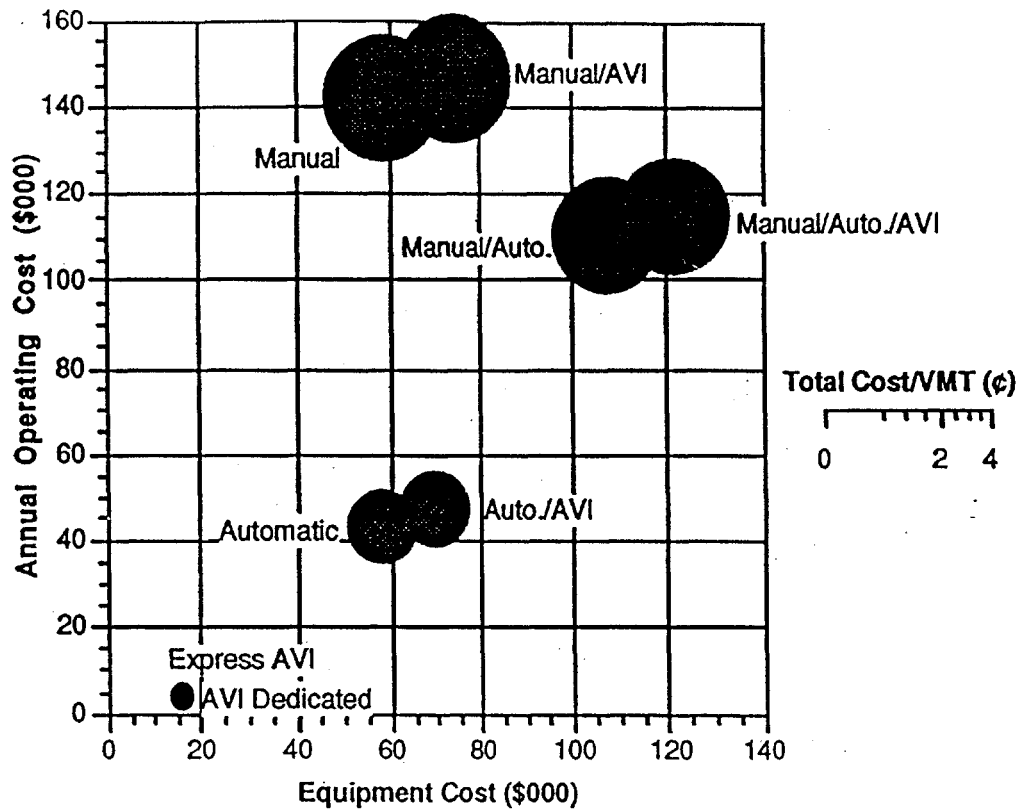
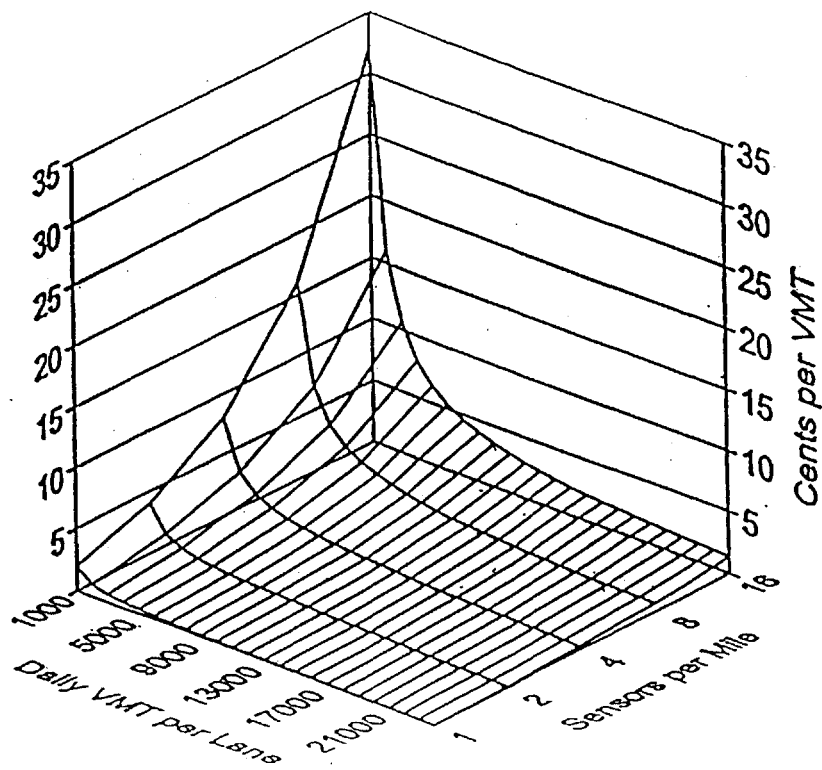


Fig. 6: Cost per VMT in Various Network and Traffic Density Settings
(ECO Northwest, from private data)



5.2.1.2. Area Licensing

Area licensing is seen as an economical alternative to AVI because its only costs are the printing and sale of the licenses, and the cost of police resources to apprehend scofflaws. Singapore initially used area licensing, and the cost of administration averaged approximately 5 percent of total revenues, and the equivalent of a fraction of a cent per affected vehicle mile.

The disadvantage of area licensing is that some of the precision and differentiability of AVI pricing schemes is lost. Since it is not possible to price by length of trip, at best it is tantamount to a zone pricing scheme.

In addition, outside of an environment like Singapore, the incidence of evasion may be very high (or the cost of controlling evasion may be very high). If this is the case, then the cost difference between AVI and area licensing may be partly illusory, since AVI has built in controls for evasion.

5.2.1.3. Cordon Pricing

Cordon pricing schemes are not an independent technology, but rather a variation of either AVI or area licensing designed to reduce implementation costs. In these schemes the costs of surveillance or detection are reduced by limiting tolling locations to a cordon or ring around the most congested areas. When vehicles cross into the ring,

they are charged electronically or by being asked to display an area license.

This scheme is in use in two Norwegian cities and implementation is pending in England. This scheme obviously is not a precise approximation to true congestion pricing, because it does not distinguish precisely among trips of various lengths. In a strongly center-focused roadway system, two or more concentric cordons can improve upon this handicap, although such a system then underprices circumferential tripmaking. In addition, not surprisingly, there is evidence that this approach distorts location decisions in favor of the area just outside the cordon.³⁶

5.2.1.4. Parking charges

Parking charges are frequently discussed in Oregon as an alternative to congestion pricing. Proponents argue by charging more for parking that begins during peak periods, it is possible to crudely simulate the time pattern of congestion pricing.

However, it is not possible to charge differentially by trip length, or the facilities used, nor to charge for through-vehicle travel with parking charges. In essence, parking charges price the *destination* rather than the travel itself. Consequently, parking price has the result of favoring long trips, through-trips, and other tripmaking that does not normally utilize parking on the trip end.

In addition, the revenues of such a scheme are not easily linked to individual corridors or roadways which makes it difficult to integrate this pricing scheme with an appropriate transportation investment strategy. Although administrative costs are low for parking charges, the tradeoff is that the actual benefits of the policy are inconsistent.

The AVI approach, on balance, makes the most sense to adopt if the goal is efficient pricing reform with minimal distortions caused by "holes" in the pricing system. It also makes the most sense if rationalization of the system of highway finance process is desired. Combinations of AVI with area licensing strategies, gasoline taxes, and other simple pricing devices may be the best near-term technology.^{37 38} To our knowledge, all of the regional implementations of congestion pricing currently being considered around the world are planning to rely on AVI systems of one sort or another.

It is probably incorrect, however, to assume that it would be feasible any time soon to completely replace the existing system of highway finance (i.e. the gas tax) with an ubiquitous AVI-based system. The reason is obvious from the AVI system cost estimates presented earlier: it is simply too expensive to implement AVI ubiquitously. Where road charges should be low (on uncongested roads, at night, etc.), the pricing mechanism needs to be cost-effective. The gas tax is a very low cost pricing device, and despite its imprecision, it likely is better,

nonetheless, to employ it in such situations than more precise, but expensive AVI systems.

In places where AVI is reasonable to implement, gas tax and AVI pricing systems will have to be coordinated. On facilities that are congestion priced, the tolls can be set to reflect the fact that drivers are already paying a small fee through the gasoline tax. For facilities that do not warrant full congestion pricing, the gasoline tax (potentially at a lower level than today) can remain as a source of revenue to support maintenance and operating expenses.

The current gasoline tax also could remain for those parts of the state that choose not to use congestion pricing as a financing system. Conceptually, the role of the gas tax in a pure regime of congestion pricing is to finance roadway maintenance and other expenses that are roughly proportional to fuel consumed. However, in settings where the cost of implementing appropriate prices by other technologies is more costly, the gasoline tax and truck weight-mileage taxes may remain cost-effective and common pricing and revenue devices for some time to come.

5.2.2. Privacy Issues

The prospect of comprehensive, AVI-based pricing systems, raises privacy issues.³⁹ Some implementations of AVI involve recording electronically the location of vehicles on the roadway network, and all AVI systems require some form of surveillance or enforcement. All of

these actions may be perceived as intrusive by some citizens.

Qualitatively, the issues are not too different from those that have confronted, at various times, the telephone system, automated teller machine networks, credit card networks, airline reservation systems, and other services in the economy. Nonetheless, privacy issues may be important in some implementations, and the technological requirements need to be considered in developing congestion pricing systems.

Focus groups and other mechanisms can be used to determine the level of sensitivity to, privacy issues, as was done recently in California,⁴⁰ and ameliorative policies or technologies can be developed if needed. Within the AVI realm, for example, one possibility is the use of a debit card technology, set up as a prepaid account and automatically debited with use. Similarly, the optional use of prepaid, anonymous account numbers, from which road charges are debited, can also help address the privacy issue. (The latter alternative to direct billing is being offered in the SR91 AVI billing system.)

Surveillance and enforcement raise different concerns, and require different solutions. The lowest cost way of preventing evasion of a road pricing scheme is to have roadside surveillance by remote cameras to record the passage of vehicles that do not have the appropriate AVI transponders or debit devices. However, Oregon law currently does not permit use of photographic li-

cense plate evidence to prosecute scofflaws. Efficient enforcement thus will require either a change in the law, or the use of other technologies to apprehend scofflaws.

5.2.3. Travel Demand and Highway Cost Information

To implement a full congestion pricing scheme requires a broad range of technical information:

- Congestion (spillover costs) must be measured, in a rigorous manner, so the roads that are candidates for congestion pricing can be identified. This, in turn, raises technical questions about measuring the value of travelers' time about which there is much empirical dispute.⁴¹
- The response of drivers to congestion pricing must be modeled, so that the appropriate congestion prices can be calculated. This includes understanding how many drivers will shift from the peak to off peak periods,⁴² how many will shift to other modes (carpool, vanpool or transit) or to other routes, and how many will choose not to travel at all.⁴³
- The transit response must be assessed to understand the kind of alternatives that will be available to drivers who choose not to continue driving.⁴⁴ Conversely, estimates of the shifts away from the private automobile must be communicated to transit au-

thorities and others affected by the shifts so that they can prepare their operations accordingly.

- To implement the roadway investment aspects of a congestion pricing regime, data must also be developed on the cost of new roadway capacity, and how the cost should be assigned to users of various types.⁴⁵
- Experience with congestion pricing will be helpful in formulating more precise economic models. It is fair to say that we know enough about modeling transportation systems to project the performance of any particular structure of prices with, at best, modest accuracy, especially without a congestion pricing system in place. Current models use actual household behavior to estimate the demand relationships which are then used to predict responses to policy changes. Since there are no major implementations of congestion prices anywhere in the United States, there is concern about the modelers' ability to extrapolate from existing behavior.

To some extent, a congestion pricing policy is inherently more tolerant of errors than other policies, since it can be modified easily (by changing price structure and levels) to accommodate any errors made in the planning period. And realistically, data on highway construction costs is needed for longer-run integration of pricing with roadway in-

vestment decisions, but will not be required until congestion pricing is in place. (However, information on highway costs would be very helpful in projecting what levels of long-run congestion prices can be expected to prevail over time.)

Nonetheless, it would not be prudent to make a policy change as significant as congestion pricing without having very good information beforehand. A demonstration project that applied congestion pricing in a representative fashion would add greatly to the precision of future congestion pricing activity.

6. WINNERS AND LOSERS UNDER CONGESTION PRICING

Whenever a policy change occurs, it creates classes of potential winners and losers, and this is no less true of congestion pricing. Transportation services are central features of a regional economy. Consequently, a change in the pricing of highway services will have a mixture of good and bad impacts on certain types of travelers, and on businesses and residents in subareas of the region.

6.1. Travelers: Who Wins, Who Loses?

Implementing congestion pricing means travelers using congested facilities during the peak period will face greater out-of-pocket costs than they currently pay through the gasoline tax alone. (Off peak and night charges, on the other hand likely *could* be less than they are without congestion pricing if pricing were implemented broadly enough to permit average gasoline taxes to be reduced, for example.⁴⁶ Realistically, however, this would require a more comprehensive tolling system than is currently cost effective.) This will cause some diversion of trips to different routes, at different times, by different modes, and may induce some travelers not to travel at all.

Because these adjustments in travel behavior relieve traffic levels on the priced roadway, the roadway offers faster and more reliable travel

times to all vehicle types, which may benefit *even those who are induced to change their travel behavior*. Gomez-Ibanez analyzed the application of congestion pricing to existing roads and identified the most important winners and losers. (See text box.)⁴⁷

There are several important things to note about any accounting of winners and losers. First, some classes of travelers will benefit from congestion pricing *only if the HOV response is good*.⁴⁸ Those who are "tolled out" of their SOVs, for example, can benefit only if this is the case. This underscores the importance of removing the institutional impediments to increased bus, vanpool and carpool services. It may also argue for use of some of the congestion pricing revenue to assist transit.

Second, the pattern of winners and losers does not decompose directly into rich vs. poor, as is sometime alleged by critics of congestion pricing. Although drivers of SOVs with low time values are the ones most likely to be "tolled off" the road, many *may* be better off despite this if the performance of the highway-based HOV alternatives improves significantly. Those for whom HOV alternatives remain unsatisfactory, however, will be adversely affected.⁴⁹ The impact by income class thus is not *necessarily* regressive, a fact confirmed by recent simulations of congestion pricing in Seattle and Los Angeles.⁵⁰

Gomez Ibanez: Winners and losers under congestion pricing.

Gomez-Ibanez identifies three groups that are likely to be winners:

1. Motorists who would drive with or without the toll but who place a high value on travel time savings (for these motorists the gains from improved traffic speeds outweigh the toll cost);
2. Travelers who would use HOV services on the tolled road whether or not tolls are charged (they benefit from improved speeds while paying little or no toll); and
3. Recipients of toll revenues (i.e., taxpayers if tolls reduce the pressure for tax increases or, alternatively, the clients of government programs if tolls are used to finance an expansion of government services).

Four other groups are likely losers.

1. Motorists who would continue to drive on the road despite the toll but who place a relatively low value on travel time. (Even though the time savings does not compensate these motorists for the toll charge, they may have to tolerate this loss because alternate routes or HOV services are too inconvenient for trips they are making.);
2. Motorists who shift from the tolled road to a competing untolled facility. (The untolled facility is less convenient otherwise these motorists would have used it even in the absence of tolls.);
3. Other users of the competing untolled roadway (since congestion will increase on that road); and
4. Motorists who choose not to make the trip at all because of the toll (or who, with congestion pricing, now drive at a less convenient time of day when the tolls are lower).

One, final group may benefit or lose depending on specific circumstances—travelers who switch from driving to HOV or bus services on the tolled road. (Some of those who switch may benefit if the HOV or bus speeds are improved greatly by the tolls, but others may lose if the bus or HOV speed improvements are modest or these modes were fairly inconvenient to begin with).

In this regard, a distinctive feature of congestion pricing is it generates revenue that can be used to offset any such negative effects, by financing transit alternatives where appropriate, or other compensatory actions.⁵¹ Indeed, the reason economists recommend road pricing over regulatory and land use approaches to congestion problems is because it is a policy that has the potential to make *everyone* better off through prudent use of the revenues generated the policy. In contrast, regulatory and land use policies produce no revenue, and generally require additional taxation to implement.⁵²

6.2. Downtown vs. the Suburbs: Who Wins, Who Loses?

Another set of stakeholders affected by congestion pricing are businesses and residences that are already located in certain places in the region. Congestion pricing influences the value and use of land because it changes the cost of access; some landowners will lose from implementation of congestion pricing, others will gain. Policy makers also need to know how the land-use effects of congestion pricing fit into Oregon's objectives for land conservation and development.

6.2.1. Comprehensive Coverage

Generally, the effects on land use depend on the *comprehensiveness of coverage* of the congestion pricing system. If the coverage of the congestion pricing system is reasonably complete (i.e. comprehensive,

mileage-based regional pricing is employed, without major traffic diversion to unpriced facilities), congestion pricing likely will tend to reinforce existing employment centers. (As outlined by Deakin, 1993, the use of the pricing revenues will also impact the potential for affecting urban form.⁵³)

This follows despite the fact congestion pricing will raise the out-of-pocket cost of the home-to-work trip. The relevant cost measure to consider for land use analysis purposes, is the *full cost* of travel (including time), not just the *cash cost*. Although congestion pricing raises the cash cost of travel in the peak period, it should *lower* time costs and travel costs overall, especially if HOV services respond appropriately and the congestion pricing revenues are efficiently spent. (Indeed, to the extent that congestion pricing policy fails to lower total travel costs, it has not been properly implemented. After all, the logic of congestion pricing is to improve economic efficiency, which implies, by definition, the use of fewer economic resources, not more.)

Congestion pricing thus should *improve* formerly-congested access to existing locations, which should improve these locations' competitive viability in the region. In turn, to the extent the rising cost of congestion to and in the CBD is a major contributor to the trend of employers moving to suburban locations, it is theoretically possible that congestion pricing may help existing centers.

Thus assuming reasonably comprehensive, regional implementation of congestion pricing, the result could be less development sprawl. This follows from the fact that such a pricing system can introduce a bias in favor of:

- Short over long trips, since vehicles pay by the mile;
- Trips in corridors served well by transit alternatives (or in which carpooling or vanpooling is convenient), since this represents an important way for travelers to avoid the congestion tolls.

Computer simulations of comprehensive congestion pricing policy have demonstrated that a comprehensively-applied congestion pricing system can favor the CBD and major centers, and discourages diffused suburbanization of economic activity.⁵⁴ However, such simulations are necessarily very abstract, and may or may not faithfully capture the real-world response to congestion pricing.

All we can say with certainty is that the decentralization that has occurred in American cities has occurred in the *absence* of congestion pricing. Whether implementation of congestion pricing will reverse those trends is much less clear. Comprehensive congestion pricing will have centralizing effects on land-use patterns, since the attractiveness of the downtown location is maintained or enhanced by the policy. Whether this is enough to reverse 50 years of decentralization is, frankly, not known.⁵⁵

6.2.2. Incomplete Coverage and Mispricing

If congestion pricing coverage is incomplete, with only a few facilities priced properly, its effects are likely to be even more difficult to predict. At best, the effects on land use would be a spotty rendition of the effects described above; at the worst, depending on the policy practiced on the unpriced portion of the roadway network, congestion pricing could exaggerate the tendencies for business activity to dissipate in the region.

The worst case would arise if congestion pricing is implemented only on a selected facility *and* is implemented in an erroneous fashion. In particular, if the prices are set too high, and/or the revenues collected from the congestion prices are spent in a way that does not improve travel conditions on the affected facilities, congestion pricing would have mostly bad effects on development patterns. In this case, many of the travelers will perceive (properly) that the policy has, in fact, *increased* their full cost of travel, and may locate their residences or businesses to avoid this impact.

One possibility that appropriately concerns downtown interests, for example, is that congestion pricing is applied selectively to congested, CBD-oriented roads, and then the revenue is dissipated. Mismanaged congestion pricing in this case probably would encourage:

- Diversion of development to the unpriced portions of the region;
- Suburbs-oriented tripmaking (if CBD trips are priced and suburban trips are not).

From this discussion it is obvious that it may not be possible to forecast exactly the winners and losers from congestion pricing because the outcome depends on:

- How well, and how completely, congestion pricing is implemented;
- How efficiently the revenues collected via congestion pricing are utilized.

All economists can urge in this regard is that the congestion pricing revenues be used, to the extent possible, in the corridor in which they were generated to redress the income distributional effects of congestion pricing. Most importantly, if the revenues are not used efficiently, congestion pricing may not generate overall net benefits, and it would be unfair to ask the public to support it.

6.3. Environmental Impacts

A final set of impacts that should be discussed are the environmental impacts. To the extent congestion pricing reduces air and/or noise pollution as an ancillary effect to VMT reduction, there may be general environmental benefits.

The issue is not as straightforward as it seems, however. One of the effects of congestion pricing,

for example, is to cause vehicles remaining on the roadways to travel at higher speeds. Typically, the rate of emissions, per mile, increases at higher speeds (as do motor and tire noise as well). Hence, whether there are pollution benefits, on balance, will depend upon the partially offsetting effects of higher speeds and lower traffic levels.

In addition, congestion pricing does not necessarily reduce travel by the most polluting vehicles or reduce the number of cold starts. It is possible, for example, that when faced with higher out-of-pocket costs from congestion prices, drivers may try to economize by retiring old vehicles more slowly. And if most of the reduction in congestion come from spreading of the peak (rather than reduction in trips), cold starts may not be reduced significantly either.

Detailed studies of congestion pricing in California and Washington suggest that congestion pricing, on balance, *does* have beneficial air pollution effects. However, because of the uncertainties involved, policies focused directly on vehicle emissions generally are preferred to relying on the ancillary effects of congestion pricing.

7. INSTITUTIONAL ISSUES

There are two important types of institutional considerations that must be addressed when considering congestion pricing:

- What is the jurisdictional and legal authority to implement congestion pricing?
- What changes in existing institutional and administrative arrangements would have to be made to implement congestion pricing?

Economists and planners tend to ignore these issues, believing that institutional considerations should not stand in the way of sound policy. Consequently, there has been little formal research on the institutional issues that surround congestion pricing policy.

As an introduction to this process, we have inventoried some of the existing policies that congestion pricing is compatible with, and those with which it is at odds. Generally, the legal authority exists, mostly unused, to implement congestion pricing if a region really wishes to do so. However, there are unanswered issues regarding overlapping responsibilities and conflicting policy agendas that must be addressed if congestion pricing is going to be implemented, even on a local level.⁵⁶

7.1. Federal Laws and Policies

The primary impediment in federal law to implementing congestion pricing follows from the federal ban on tolls on federally-aided roadways. Tolls on roads built with federal funding were made illegal in 1916. The relevant section of federal law (23 U.S.C. §301) was passed to prevent local governments taking financial advantage of federally-built postal roads in rural areas (with populations less than 2500). But over the years, it has come to be tantamount to a ban on tolls on all federally-aided highways.

Most roadways are *not* federally-aided, but most of the major freeway facilities in urban areas, in Oregon and elsewhere, are federally-aided. The federal ban thus is viewed as a major obstacle to congestion pricing at local-initiative. The situation is even more complicated in the case of bridges, because federal law affects both federally-aided bridges, and non-federally-aided bridges over navigable waterways.⁵⁷

It is possible, in the view of some legal scholars, however, that an AVI system, or a system of area licensing, need not legally comprise a "toll", since court interpretation defines a toll as such only if it is exacted "when and as" the privilege of using the road is exercised.⁵⁸ By this view, if the system of collection of revenues is separated from the actual passage (e.g. because the AVI system sends out bills once a month), it can avoid the prohibition against tolls. Indeed, it is precisely this legal in-

terpretation of Section 301 that permits states to collect gasoline taxes from vehicles that use federally-aided highways. Since the gasoline taxes are not collected literally as the operator's vehicle passes over the roadway, it does not qualify legally as a toll.

Historical impediments to pricing of federally-funded, regional and interstate roadway facilities have been relaxed recently to encourage demonstration projects of congestion pricing. The Federal Highway Administration (FHWA) is promoting a Congestion Pricing Program to encourage implementation and evaluation of congestion pricing demonstration projects.⁵⁹ These demonstration projects currently allow three experiments explicitly permitting pricing on interstate highways, but the federal prohibition of pricing on interstate facilities otherwise remains in place. To date, only one demonstration project has been funded.⁶⁰

Clearly, the federal stance on congestion pricing presently is tentative support for the concept, if a state or locality wishes to adopt it. Previous attempts to remove the prohibition of pricing on interstate roadways have failed, however, and the general ban is likely to remain in place until the demonstration projects are completed. If it had sufficient interest to challenge the applicability of Section 301 to AVI or other non-toll booth collection technologies, a state or local government might be able to implement congestion pricing without a change in

Federal law, even on federally-aided highways and bridges.

7.2. State Laws and Policies

Oregon transportation policy also is generally supportive of congestion pricing. The recently published Oregon Transportation Plan calls for use of full-cost pricing on state highways and roads. The Portland region also has submitted proposals under the ISTEA congestion pricing demonstration program discussed above.

However, it does not appear that the State of Oregon has the authority to permit tolls on existing federally-aided highways or bridges in the state, even if the federal prohibition were moot. The Oregon Department of Transportation appears to have the authority to build new toll *bridge* facilities (even on federally-aided highways, if necessary). However, it does not appear to have the specific authority that would be required to toll *existing* bridges and or to toll highways.⁶¹

In addition, the Oregon constitution restricts the uses of fees levied on motor vehicles to roadway-related expenditures only. This would not appear to restrict implementation of congestion pricing *per se*, but only the use of the revenues derived from such a policy. It would appear that those revenues would have to be used on roadway improvements or capacity expansion (to the extent this is permitted by regional transportation plans), and could not be used to finance transit activity or returned to households

through a tax credit or an employer-based, commuter assistance program.

The constitutional restriction on uses of motor vehicle fees is not a severe restriction in the long run when, if properly implemented, congestion prices are likely to be very close to the prices needed to amortize new roadway development. However, in the short run, congestion pricing may generate considerable "surplus" revenues (this necessarily will occur to the extent that the existing roadway system is overbuilt). In this case, the effect of the constitutional restriction may be to cap congestion prices at levels that would be sufficient to finance incremental highway expansion (if warranted), but not transit finance.

7.3. Local Transportation Authority

Local governments in Oregon appear to have the authority to toll local roadways, since both state and federal law is silent on this matter. (This is not the case for local bridges, the authority for which appears to rest with federal law for most navigable waterways, and ODOT.⁶²) As a practical matter, however, effective congestion pricing in one of Oregon's urban areas would require pricing of federally-aided and state roadways, over which ODOT has other policy jurisdiction.

Local transportation plans appear to be only indirectly supportive of congestion pricing. Local transportation system plans (TSPs) are required to implement Goal 12, the

Transportation Planning Rule (TPR). The key features of the TPR include:

- Local governments in the Portland Metro area are required to consider changes in land-use densities and designs as an alternative to increased roadway capacity to meet transportation needs;
- Metropolitan planning organizations in Portland, Salem, Eugene, and Medford are required to plan for 20% reductions in per-capita VMT over the next 30 years (10% over 20 years);
- Other areas are not required to reduce per-capita VMT, but are required to provide for and encourage modes of travel other than the auto.

Congestion pricing is not specifically required in TSPs, which to date have focused on land use planning, parking lids, employer trip reduction programs, and other regulatory mechanisms. It is, however, consistent with Goal 12 and the TPR.⁶³ In addition, travelers will probably not shift substantially to alternative modes on the basis of transit service improvements alone. For these reasons, congestion pricing currently is an element of current local discussion in both the Portland and Eugene areas.

7.4. Administering the System

A congestion pricing system rationalizes the role user charges play in the management of the highway system. This has implications for the administrative aspects

of operating the roadway system because it affects the way in which the roadway system is financed. Although congestion pricing need not affect current agency *structure* significantly, it could affect the *role* of that administrative structure. It also has implications for the financing of public transportation alternatives.

7.4.1. Financial Decisionmaking

The use of congestion pricing tightens the relationship between the revenue generated on a particular roadway segment (or corridor), and the funds available for improvements. As was pointed out earlier, when roads are priced and expanded properly, the congestion prices just cover the amortized costs of the capacity required by the various users. By definition, therefore, properly-priced new road segments generate the revenue necessary to finance themselves.⁶⁴ Conceptually, this reduces somewhat the need for administrative/political systems to determine cross-financing or allocation.

The intercity and interregional nature of highway travel today, however, necessitates that there be a multi-jurisdictional administrative structure to manage pricing, operation, and investment. It is important to coordinate the pricing and investment policies of *all segments within a corridor* when the traffic volumes on those segments are significantly interrelated. Hence, pricing within various local, regional, and intercity corridors needs to be coordinated so that a stable pricing structure, and coordinated investment policies, are pursued.

For an areawide approach covering a network of streets and highways operated by different authorities, a new joint powers authority with representation from affected jurisdictions may be necessary. (One such model of a joint powers agency is the Transportation Corridor Agencies in Orange County, California.) Its role would be to plan, organize, finance and operate the congestion pricing program, and address traffic diversion and route and mode coordination issues. The operating entity then may carry out day to day operations, including contracting with state police for enforcement. State vehicle registration authorities must agree to cooperate in providing vehicle owner information for violation enforcement. In sum, a variety of organizations may be involved, both new and existing.

Much of the ODOT, regional and county transportation authority structure that exists today thus would be needed with congestion pricing. These entities, using the appropriate technical criteria for applying congestion pricing, would administer the pricing system and make decisions about capacity enhancements.

The administration of the toll *collection* system can be a separate matter. (The system could in fact be developed and operated by private vendors, as is increasingly the case.) However, the resources collected in an individual corridor are returned to the relevant entity that administers the pricing and investment policy for that corridor.

8. CONCLUSION

Congestion pricing has a sound conceptual basis that makes it worth considering as a means of dealing with Oregon's growing congestion problems. At present, the technology permits pricing of *selected* facilities relatively easily, but complete geographic coverage by sophisticated pricing systems is out of reach technologically at this time.

Since the benefits of the strategy are best realized when coverage is broadest, the technological shortcomings pose a serious dilemma for those who will have the responsibility of implementing road pricing. Either a system with less-than-complete coverage must be implemented, or compromises will have to be made in the precision with which pricing is applied.

On the positive side, the technical impediments to the implementation of pricing are diminishing with the advance of AVI technology, and there is federal, state and local support for considering the policy in Oregon. On the negative side, the actual implementations of congestion pricing are very few in number, and it is at variance with a system of highway finance and decision making in which many forces have a stake.

Congestion pricing is a policy that has the potential to address congestion and transportation finance problems in a comprehensive manner. But it requires a change in

mindset for the public and policy makers alike. Its advantages are hard to articulate, and there is suspicion among taxpayers that congestion pricing is "just another tax." It is particularly important, therefore, that congestion pricing policy adhere to three principles:

- Congestion prices should reflect fair calculations of the costs imposed by highway users; they should not be arbitrarily set to manipulate behavior or generate revenue;
- The revenues collected by a congestion pricing system in a particular corridor should be used strictly in a manner that benefits those affected by the congestion pricing. This may or may not include use of the revenues by transit authorities, and may need to include reductions in other taxes paid by the affected users;
- Congestion pricing should be embedded in a broader reform of transportation finance and decision making, to ensure that economically desirable expansion of highway and/or transit capacity occurs.

Even if one accepts the theoretical soundness of the concept of congestion pricing, issues relating to implementation remain. In our opinion, the technical impediments to implementation are likely to be resolved in the next five to ten years. The key to implementation of congestion pricing will be overcoming the knowledge deficit, and addressing implementation issues.

We recommend a carefully phased, incremental program of implementation with the following characteristics:

- The objectives of the program should be clear, and should focus on capturing the efficiency advantages of congestion pricing;
- The program should be implemented in a rigorous way, with careful and objective measurement of the factors that determine proper congestion prices;
- Arbitrary setting of prices should be avoided because it is potentially harmful to the transportation economy. Arbitrarily *high* prices are particularly worrisome;
- A research study should be conducted to provide realistic estimates of congestion prices, to determine what portion of the road system needs to be priced to generate significant economic benefits, and to determine the technical feasibility of implementing congestion pricing;
- A program of public education and involvement should precede any implementation (on a demonstration basis or otherwise) of congestion pricing. Important issues of efficiency, equity, and privacy are raised by congestion pricing implementation, and need to be resolved in an open manner.

Congestion pricing has a strong basis in economic logic, and most economists believe that its benefits, and the inadequacy of other remedies, will ultimately compel its use. It is, however, a policy that is not well understood by the lay public. It also requires analytical and technical implementation effort if it is to be applied fairly, and in a manner that extracts the maximum benefits for Oregonians. Only a carefully phased research and public participation program will prepare Oregon properly for the implementation of congestion pricing.

9. REFERENCES

- "London's Fuming", The Economist. November 12 1994. 71-72.
- "Snippets", Straits Times (Singapore). June 2 1989.
- Anderson and Roddin. "Current Practice in Highway User Analysis." Transportation Research Record (1975).
- Atkinson, D. and D. Lewis. "An Econometric Model of the Influence of Petrol Price on Traffic Levels in Greater London." PTRC (Proceedings, Summer Meeting 1975).
- Behbehani, Redha, V. Setty Pendakur, and Alan T. Armstrong-Wright. Singapore Area Licensing Scheme: A Review of the Impact. Water Supply and Urban Development Department, The World Bank, Washington, D.C., 1984.
- Bhatt, Kiran. "Implementing Congestion Pricing: Winners and Losers." ITE Journal 63 (Number 12, December 1993): 33-37.
- Borins, Sandford F. "Electronic Road Pricing: An Idea Whose Time May Never Come." Transportation Research A 22A (No. 1, 1988): 37-44.
- Coit, Rosanne J. "Legal Issues Surrounding Roadway Pricing on City Streets and Bridges." Transportation Research Record 494 (1974): 1-10.
- Dawson, J.A.L. and Fred N. Brown. "Electronic Road Pricing in Hong Kong: 1. A Fair Way to Go." Traffic Engineering and Control 26 (1985).
- Deakin, Elizabeth. Urban Transportation Congestion Pricing: Effects on Urban Form. TRB Conference on Congestion Pricing, Washington, D.C., 1993.
- Fauth, Gary R. *et. al.* Central Area Auto Restraint: A Boston Case Study. Department of City and Regional Planning, Harvard University, Cambridge, MA, 1978. Report R78-2.
- Fielding, Gordon J. "Private Toll Roads; Acceptability of Congestion Pricing in Southern California." In Curbing Gridlock, ed. National Research Council. Pages 380-404. Vol. 2. Washington, D.C.: National Academy Press, 1994.
- Fong, Peter K.W. "Issues of the Electronic Road Pricing System in Hong Kong." Transportation Planning and Technology 30 (1985): 29-41.
- Giuliano, Genevieve. "An Assessment of the Political Acceptability of Congestion Pricing." Transportation 19 (1992): 335-358.
- Gomez-Ibanez, J. "The Political Economy of Highway Tolls and Congestion Pricing." Transportation Quarterly 46 (3 1992): 343-360.
- Gruenspecht, D. and L. Lave. The Economics of Health, Safety, and Environmental Regulation. Vol. 2. Handbooks in Economics, No. 10, New York: Elsevier Science, 1989.

Harvey, Greig. Transportation Pricing and Travel Behavior. National Research Council, 1994. Paper Presented at the 69th Annual Western Economic Association International Conference, Vancouver, B.C.

Hau, Timothy D. "Electronic Road Pricing: Developments in Hong Kong 1983-1989." Journal of Transport Economics and Policy 24 (No. 2, May 1990): 203-214.

Hau, Timothy D. "Congestion Charging Mechanisms for Roads." World Bank Policy Research Working Papers Series WPS 1071 (1992a): 1-99.

Hau, Timothy D. An Evaluation of Current Practices in Congestion Pricing. 1992b. Presented at the 71st Annual Meeting of the Transportation Research Board, Washington, D.C.

Hoeller, Dean, and Nicolaisen. "Macroeconomic Implications of Reducing Greenhouse Gas Emissions: A Survey of Empirical Studies." OECD Economic Studies (No. 16, Spring 1991): 45-78.

Holland, Edward P. and Peter L. Watson. "Traffic Restraint in Singapore: Measuring the Effects of the Area License Scheme." Traffic Engineering and Control 19 (No. 1, January 1978).

K.T. Analytics Inc. Congestion Pricing: Guidelines for Project Development. Prepared under Sponsorship of the Federal Highway Administration, Office of Policy Development, Transportation Stud-

ies Division, Washington, D.C., 1994. Interim Report.

Keeler, Theodore E. and Kenneth A. Small. "Optimal Peak-Load Pricing, Investment, and Service Levels on Urban Expressways." Journal of Political Economy 85 (No. 1, January 1977): 1-25.

Klein, Daniel B. "Private Toll Roads in America -- The First Time Around." Access No. 2 (Spring 1993): 17-21.

Kraus, Marvin C. "Indivisibilities, Economies of Scale, and Optimal Subsidy Policy for Freeways." Land Economics 57 (No. 1, February 1981a): 115-121.

Kraus, Marvin C. "Scale Economies Analysis for Urban Highway Networks." Journal of Urban Economics 9 (No. 1, January 1981b): 1-22.

Krupnick, Alan J. Vehicle Emissions, Urban Smog, and Clean Air Policy. Resources for the Future, Washington, D.C., 1992. Discussion Paper QE-92-09.

May, A.D. "Potential of Next Generation Technology." In Curbing Gridlock, ed. National Research Council. Pages 405-463. Vol. 2. Washington, D.C.: National Academy Press, 1994.

May, A.D., D.S. Milne, D. van Vliet, M.J. Smith, and M. Wisten. The Network Effects of Alternative Road Pricing Systems. The University of Leeds and The University of York, 1994.

McCarthy, Patrick S. and Richard Tay. "Pricing Road Congestion: Recent Evidence from Singapore." Policy Studies Journal 21 (2 1993): 296-308.

McCullough, C.B. The Economics of Highway Planning. Technical Bulletin No. 7, Salem, Oregon: Oregon Highway Department, 1937.

Menon, A.P. Gopinath, Sol-Hol Lam, and Henry S.L. Fan. "Singapore's Road Pricing System: Its Past, Present and Future." ITE Journal 63 (No. 12, December 1993): 44-48.

Menon, A.P.G. and P.A. Seddon. "Traffic in the Central Area -- Part I: Volume Characteristics." IES Journal, The Institution of Engineers, Singapore 31 (No. 2, March/April 1991): 15-20.

Meyer, John R, John F. Kain, and Martin Wohl. The Urban Transportation Problem. Cambridge, Massachusetts: Harvard University Press, 1965.

Oldridge, Brian. Congestion Metering in Cambridge City. Cambridgeshire County Council, Cambridge, 1991. Paper presented at the PTRC Conference on "Practical Possibilities for a Comprehensive Transport Policy With or Without Road Pricing."

Olszewski, P. and Tan Yan Weng. "Traffic in the Central Area -- Part II: Speed Characteristics." IES Journal, The Institution of Engineers, Singapore 31 (No. 2, March/April 1991): 1-12.

Pietrzyk, Michael C. "Electronic Toll Collection Systems." In Curbing Gridlock, ed. National Research Council. Pages 464-501. Vol. 2. Washington, D.C.: National Academy Press, 1994.

Pozdena, Randall. Market Based Solutions to the Transportation Crisis: Incentives to Clear the Air and Ease Congestion. Bay Area Economic Forum (San Francisco), 1990.

Schrank, D., S. Turner, And T. Lomax. Estimates of Urban Roadway Congestion, 1990. Texas Transportation Institute, 1993. Research Report 1131-5.

Small, Kenneth A. "Using the Revenue from Congestion Pricing." In Searching for Solutions: A Policy Discussion Series (Addendum to Publication No. 6), Washington, D.C.: Federal Highway Administration, 1992a.

Small, Kenneth A. "Using the Revenues from Congestion Pricing: A Southern California Case Study." Policy Insight Number 145 (September 1992b).

Small, Kenneth A., Clifford M. Winston, and Carol A. Evans. Road Work: A New Highway Pricing and Investment Policy. Washington, D.C.: The Brookings Institution, 1989.

Sullivan, A.M. "The General Equilibrium Effects of Congestion Externalities." Journal of Urban Economics 14 (1983): 80-104.

Toh, Rex T. "Experimental Measures to Curb Road Congestion

in Singapore: Pricing and Quotas." The Logistics and Transportation Review 28 (No. 3, September 1992): 289-317.

Watson, Peter L. and Edward P. Holland. "Congestion Pricing: The Example of Singapore." Finance and Development 13 (No. 1, March 1976): 20-23.

Watson, Peter L. and Edward P. Holland. Relieving Traffic Congestion: The Singapore Area Licensing Scheme. The World Bank, Washington, D.C., 1978. World Bank Staff Working Paper No. 281.

Wilson, Paul W. "Welfare Effects of Congestion Pricing in Singapore." Transportation 15 (No. 3, March 1988): 191-210.

¹State Route 91 (SR91) is being built under California's private toll road legislation. Under that legislation, the ownership of the facility may revert to the State after a specified number of years.

²The prohibition against tolling on federally-aided facilities (with exceptions only for certain bridges and tunnels) is contained in 23 USC §301.

³This calculation assigns the national benefits estimated by Small in 1989 (Small and others 1989) for all urban areas to Portland, based on its share of urban VMT. The calculation also assumes annual growth in congestion of 2.5 percent (the figure for the past 8 years has been 2.9 percent), and a real discount rate of 3 percent.

⁴The exception is that heavy trucks in Oregon pay a weight-mile tax that is collected directly from the trucking companies.

⁵Figures supplied by Kiran Bhatt.

⁶The Oregon State Highway Department, in its landmark 1937 highway economics manual, recommended calculating "solvency quotients" for individual roadway segments to measure the extent to which they generated enough revenue to finance themselves, arguing that "the true measure of *financial* desirability [of a roadway segment] is the solvency quotient rather than the type or volume of traffic carried." (McCullough 1937), p. 6.

⁷For a discussion of Southern California's new toll road, see (Fielding 1994).

⁸It is usually employed in residential areas to restrict on-street parking to residents only.

⁹It is roadway capacity, after all, that is not being properly priced.

¹⁰Tim Hau, the World Bank's expert on road pricing, uses a similar classification scheme. See (Hau 1992a; Hau 1992b).

¹¹See, for example, (Atkinson 1975).

¹²Hong Kong raised both sales taxes and license fees dramatically, with virtually no effect on central area travel. See, (Dawson and Brown 1985):

¹³(K.T. Analytics Inc. 1994)

¹⁴See (Keeler and Small 1977) and (Pozdena 1990).

¹⁵Economists refer to the prices on existing roads as "short run" prices.

¹⁶Practical capacity is defined here at 2000 vehicles per hour per lane of pure automobile traffic. This calculation exploits the engineering relationships estimated by Keeler and Small. See, (Keeler and Small 1977), p. 13.

¹⁷All of these calculations, of course, are done on a present discounted value basis.

¹⁸The appropriate highway costs can be determined by studying the current, actual costs (of construction, right-of-way acquisition, and maintenance) of road capacity. By separating out the portions of those costs that are (1) assignable to peak versus off peak demand, (2) vehicles of various types and (3) facilities of various costs, it is possible to calculate quite accurately the appropriate costs. This can be used to estimate the cost, per vehicle mile, by type of facility, by type of vehicle, by time of day.

¹⁹This assumes implicitly that there are no transit or other services that can provide transportation services more cheaply.

²⁰For a detailed history of the Hong Kong experience with its road pricing demonstration project, see (Hau 1990).

²¹Commuter allowance and tax credits are a way to provide lump-sum income grants to households affected adversely by congestion pricing. Both leave the incentive effects of the road pricing scheme in place, while partially compensating for any net disbenefits experienced by some roadway users. Commuter allowances use employers as the channel for the subsidy, whereas income tax credits reduce taxpayers' income tax obligation dollar-for-dollar by the amount of the credit. The primary challenge of these techniques is to achieve the appropriate correlation between those actually affected by the congestion pricing system, and those who receive allowances or credits. It is difficult to construct an income tax credit system, for example, that can distinguish between individuals who commute and individuals who do not. Moreover, since most income taxes are administered at the state level, tailoring a credit to a locality (if congestion pricing is not ubiquitous) is

cumbersome at best, and would dissipate some of the net benefits of the congestion pricing policy. In the case of the commuter allowance, in contrast, employers could identify the subset of commuters. All commuters would receive a fixed amount per month through their employer to help defray either driving or transit costs. This has the attractive feature that only commuters, who are more likely to be burdened by the road pricing scheme, receive compensation. However, it would be difficult to keep prior transit users (who are benefited directly by reduced travel times and improved service) from receiving a subsidy. Similarly, off-peak commuters, and even individuals who walk to work would receive a subsidy unless a complex screening device is employed. In addition, the program obviously imposes some implementation costs on employers in order for them to set up and administer the allowance program. This, too, dissipates some of the net benefits of the road pricing scheme. For a complete discussion of various methods of using congestion pricing revenues, see (Small 1992b).

²²Under a pure road pricing scheme, so-called high occupancy vehicle (HOV) modes are charged for their use of the roadway as well. However, on a per passenger basis, the charges are much less than for single occupancy vehicles (SOVs), leading *ceteris paribus* to preference for these HOVs over single-user vehicles.

²³Historically, level-of-service and accident measures have been the major performance criteria used by highway agencies to make capacity decisions. Conceptually, properly-applied benefit cost analysis can avoid inefficient capacity decision making; historically, however, benefit cost analysis does not appear to have been commonly, or properly, applied in most highway programs. (Anderson and Roddin 1975)

²⁴Primary state, county, and local government roadway miles only. This

figure excludes BLM roadways, roadways operated by federal agencies, and private roadways.

²⁵Oregon DMV 1993.

²⁶The Texas Transportation Institute's Relative Congestion Index (RCI) is a measure of the extent to which travel in a region occurs on congested facilities, weighted by the amount of travel on individual freeways and arterials. When that index exceeds 1.0 for a region, congestion is considered "area wide". In 1990, Portland's RCI was 1.07. See (Schrank 1993).

²⁷DKS Associates, for Oregon Department of Transportation, *Portland Regional Advanced Traffic Management System Plan*, October 1993.

²⁸For small segments of minor roads, the cost of implementing congestion pricing might exceed the benefits of the pricing.

²⁹See ("London's Fuming," 1994).

³⁰See, for example, (Behbehani and others 1984; Holland and Watson 1978; McCarthy and Tay 1993; Menon and others 1993; Menon and Seddon 1991; Olszewski and Weng 1991; Toh 1992; Wilson 1988).

³¹Again, the reason is that the magnitude of spillover costs drops very sharply when traffic volumes are even slightly off the peak levels. Hence, precision in pricing the peak is more important than precision in pricing the offpeak.

³²(Small and others 1989), Table 3-4.

³³Some examples of current systems illustrate the variation in costs. One system retrofitted to existing toll booths on Crescent City bridge in New Orleans was installed in 1989 for about one million dollars. A contract for operations through the AVI supplier costs about \$100,000 per year or about 4 cents per transaction. Somewhat

higher costs might be expected with debit cards. At the more costly end of the spectrum, a proposed system for the Dulles Toll Road Extension, Virginia, will cost about \$16 million in capital costs, \$5 million in operating costs (1990) or 7.7 cents per transaction. High capital costs are due to installation of conventional toll equipment along with the AVI system, with fiber optics, barriers, enforcement cameras and variable message signs. (Hau 1992b).

³⁴From (Pietrzyk 1994).

³⁵From discussions of ECO Northwest, Inc. with a private supplier and operator of AVI systems.

³⁶For a review of cordon pricing schemes, see (May 1994)(May 1994; Fauth et. al. 1978; Hau 1992a; Jones and Hervik 1992; May and others 1994; and Oldridge 1991).

³⁷Supplementary permits (area licenses) have particular promise as a second best technology for application of areawide pricing, since payment for entry into the area can be a single transaction. Permits can be checked either by human surveillance or through the use of pattern recognition equipment. Automated pattern recognition equipment also might be used to apply visual identifiers to facility pricing. Experiments have been conducted (on Philadelphia-Delaware river crossings and by the railroads) with automated equipment that responds to visual identifiers.

³⁸See (Pietrzyk 1994) for a discussion of other combinations of technologies in use in the United States.

³⁹See (Borins 1988; Fong 1985) and (Hau 1990) for a discussion of the issues that led to the abandonment of the Hong Kong experiment.

⁴⁰Results of two rounds of focus groups held by Parsons Brinckerhoff Quade & Douglas for the Metropolitan Transportation Commission for the San Francisco-

Oakland Bay Bridge Congestion Pricing Demonstration Program, 1994.

⁴¹The question of the actual measurement of time value is an important, empirical issue, and existing studies exhibit a modest range of uncertainty. However, empirical measurement of time values, *per se*, is not an Achilles' heel of congestion pricing policy. There are widely accepted techniques for inferring time value from observed travel behavior that can be used to approximate time values by type of travel, type of traveler, and other dimensions. The more important issue arises in the aggregation of time across individual travelers when doing benefit-cost analyses of roadway improvements.

⁴²Small cites reports from Singapore that suggest that elimination of overlapping trips and rescheduling business meetings to the middle of the day helped eliminate Singapore's congestion after road pricing was implemented. See ("Snippets" 1989) If the off peak is congested as well, of course, short-run pricing should appropriately reflect it, and a significant peak shift is unlikely.

⁴³This, in turn, requires the ability to model travel demand behavior in considerable detail. At present, even the best modeling systems are a compromise between the detail with which consumer responses are modeled, and the detail with which the network response is modeled. See, (Harvey 1994).

⁴⁴The ability of a given transit company to optimize its service configuration is frequently limited by both policy and facility restrictions. For example, if the region has chosen to rely on rail transit and restricts entry by private bus and commercial vanpool ventures, the potential for synergistic improvements in transit service characteristics is less than if a responsive, highway-based transit system is used. Congestion pricing improves considerably the ability of efficiently-operated

transit systems to recover from farebox revenues. To the extent that transit operations are expensive to expand, and require public funding their natural responsiveness is more limited.

⁴⁵The measurement of capacity costs is relatively straightforward, and has been done by a number of authors over the years, including Meyer, Kain and Wohl, Keeler and Small, and Kraus. See, respectively, (Meyer and others 1965; Keeler and Small 1977; Kraus 1981a; and Kraus 1981b). The issue of assignment of these costs also has been addressed by (Small and others 1989), and Keeler and Small, *ibid*.

⁴⁶As was pointed out earlier, under congestion pricing, it is likely that the optimal gasoline tax, to price base maintenance and operating expenses of roadways, would be lower than it is today for private automobiles.

⁴⁷See (Gomez-Ibanez 1992), Similar analyses have been performed by (Giuliano 1992), and (Bhatt 1993). Gomez-Ibanez taxonomy flows partly from his assumptions of incomplete congestion pricing coverage, and an implicit assumption of relatively inefficient use of the revenues. In addition, some minor classes of winners and losers omitted by Gomez-Ibanez may be important in some settings. For example, commercial vehicles and transit operators may be winners if higher travel speeds and quicker round-tripping result in savings in labor, equipment, and shipping inventories that outweigh the higher cash costs of the congestion tolls.

⁴⁸(Gomez-Ibanez 1992)

⁴⁹Generally, HOV alternatives are closer substitutes to driving for low time value individuals than for those with high time values. This limits somewhat the degree to which these individuals will be disadvantaged by a switch to HOV modes.

⁵⁰Indeed, since 75 to 80 percent of peak VMT is associated with households of above-median income, *overall* the practice of making peak users pay clearly is progressive. Modeling shows that low time value (and by implication, low income) SOVs are the ones who reduce their SOV VMT by the greatest proportion in reaction to pricing; however, the share of the *total* SOV VMT reduction that occurs with congestion pricing is relatively constant across income quintiles because high income households drive more total miles as SOVs. Studies performed by ECO Northwest, Inc., and DHS, Inc. in the Puget Sound region show, for example, the share of the VMT reduction by income quintile is only slightly larger than the population share in the lowest income quintile.

⁵¹(Small 1992a)

⁵²The use of the revenues is important because not all users experience travel times that are so improved, that they outweigh the congestion price; but the total benefits exceed costs significantly if revenues are used in an efficient manner.

⁵³See, (Deakin 1993) for a thorough overview of models of location and land use and the effect of congestion pricing on urban form.

⁵⁴See, (Sullivan 1983). In that model, all non-residential land users (destinations) are clustered in the central business district (CBD). The model determines the amount residential land users are willing to pay for land outside the CBD, which determines how intensively residential land will develop, which, in turn, determines the size of the city. Contemporary urban areas are obviously not monocentric, but the model provides important clues as to the effects of congestion pricing on land development in more complex metropolitan areas.

⁵⁵Contrary to expectations, the Singapore licensing scheme did not put bus-

inesses in the central business district at a comparative disadvantage in terms of accessibility to labor. In fact, surveys conducted after the implementation of the scheme suggest that because of improved travel times, the increased use of carpooling, and the transit improvements that accompanied the licensing scheme, many in the outlying areas were able to reduce their total travel time and costs to the downtown area. See, for example, (Behbehani and others 1984; McCarthy and Tay 1993; Menon and others 1993; Menon and Seddon 1991; Olszewski and Weng 1991; Watson and Holland 1976; Watson and Holland 1978; Wilson 1988).

⁵⁶San Francisco's congestion pricing demonstration project on the Bay Bridge is a case in point. After the demonstration project award was received, state and local authorities skirmished over which of them had the authority and responsibility for implementing the program.

⁵⁷The relevant statutes for federally-aided bridges (23 U.S.C. §129) limit tolls to operations, maintenance, and repayment of the state's share of bridge costs. For bridges built over navigable waterways, a web of statutes applies depending upon when the bridge was built (33 U.S.C. §494, 503, 526, and 529). In general, however, there are moderate to strict limitations on bridge tolling.

⁵⁸(Coit 1974), p. 3.

⁵⁹Section 1012(b) of ISTEA authorizes the Department of Transportation to enter into agreements with up to five state and local governments or other public authorities to establish, maintain and monitor congestion pricing pilot projects. Three of these agreements may involve tolls on the Interstate Highway System. Up to \$25 million per year is available to carry out the program for each of fiscal years 1992-1997 (but not more than \$15 million per year is available for any one cooperative agreement). Project expenses are eligible for

Federal-aid reimbursement for a period of at least one year, or until such time that sufficient revenues are generated by the pilot project to cover expenses without Federal participation. No project may be funded for more than three years.

⁶⁰The FHWA published official guidelines for the Congestion Pricing Pilot Program in an initial Notice announcing the program and soliciting public comment on a number of implementation issues, which was issued on May 29, 1992 (57 FR 22857). A second Notice, issued on November 24, 1992, presented program guidelines and solicited applications for participation in the Pilot Program (57 FR 55293). A third Notice, issued on June 16, 1993 (58 FR 33293) summarized the response to the November 24 Notice and extended the solicitation period for an additional four months from the date of the notice. The possibility of keeping the Solicitation open for an indefinite period in the future is under consideration by the FHWA. One demonstration project has been funded (on the San Francisco-Oakland Bay Bridge) under this solicitation.

⁶¹ORS 382.105.

⁶²ORS 383.320.

⁶³In a report to ODOT in 1992, Cambridge Systematics used a model developed by Greig Harvey to estimate the influence of changes in various policies needed to achieve the interim objective of a 10% decrease in per-capita VMT by 2012 in the Portland Metro area. ODOT forecasts that in the absence of changes in policy, per-capita VMT will grow by about 11% over 20 years. Thus, changes in policy must induce a decrease of about 21% in per-capita VMT to decrease per-capita VMT by 10% from the current level. Cambridge Systematics assumes that Tri-Met will pick up 5% of additional VMT, changes in land-use will reduce VMT by 5% by encouraging walking trips, and telecommuting will reduce VMT by about 1.25%. Pricing must, therefore,

induce a reduction of about 10% in VMT (changes in pricing do not drive changes in land use and modal split in this model). Cambridge Systematics estimates that \$660 per year in congestion tolls, \$495 per year in employee parking fees, and \$110 per year in non-work parking fees (\$1265 per vehicle per year) would reduce per-capita VMT by the required 10%.

⁶⁴Technically, whether roads ultimately pay for themselves under congestion pricing depends on whether there are long-run economies of scale or not. The data on this issue supports the assertion here that roads will be able to be close to self-financing. See, for example, (Keeler and Small 1977).

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 95-2183 FOR THE PURPOSE OF AMENDING THE FY 1995 METRO TRANSPORTATION IMPROVEMENT PROGRAM TO UPDATE THE REGIONAL TRANSIT PROGRAM

Date: July 12, 1995

Introduced by: Andrew C. Cotugno

PROPOSED ACTION

Approval of this resolution would amend the FY 1995 Metro TIP to incorporate revisions to the regional transit program identified in Exhibit A of the Resolution. In summary, Tri-Met has proposed allocation of \$6.93 million of Section 5037 (formerly Section 9) carryover funds and the anticipated FY 96 appropriation of \$15.17 million (\$19.44 million total) to a variety of new projects. Other miscellaneous amendments are also proposed affecting components of the Section 3 Discretionary program. The Resolution authorizes incorporation of these amendments into an FY 1996 Metro TIP and the 1996 State TIP. It authorizes \$10 million of Section 3 New Start construction funding for the South/North LRT in FY 98 contingent on inclusion of the project in a federally approved Air Quality Conformity Determination (expected in mid-July).

FACTUAL BACKGROUND AND ANALYSIS

Tri-Met is the region's designated transit provider. The Tri-Met Board annually updates and has approved a five-year capital improvement program. This program was prepared in close coordination with Metro and with the region's other local jurisdictions and has been the subject of extensive public participation. Drawing from this program, Tri-Met has proposed a series of updates to the next three years of regional transit programming.

Metro is the federally designated MPO. Where federal funds are relied upon by Tri-Met to execute its transit program, Metro must include and approve the use of the federal funds in the Metro TIP. This programming must also be reflected, without change, in the State TIP. Some Tri-Met's proposals require resolution approval for TIP inclusion. These are fully reflected in Exhibit A of the Resolution. The key amendments are highlighted below.

1. Proposed FY 98 programming of \$10 million Section 3 funds on South/North LRT.
2. Deletion of Gresham Park-and-Ride from federal program (commitment of local funds to complete).
3. Reduction from \$7.56 million to \$7.1 million of bus purchase funds programmed in FY 96 and 97 and deferral of the purchase to FY 98.
4. Reduction of Section 5307 (Section 9) Operating Assistance from \$3.51 to \$2.79 million in FY 96 through FY 98.

5. Seed funding of \$80,000 for PE on the Gresham Civic Neighborhood LRT Station in FY 96 using Section 5307 (Section 9) funds.
6. Construction of a \$2 million Special Needs Transit facility with Section 5307 funds.

Most of the amendments are minor updates to the schedule and cost of previously approved projects. This class of amendments can be administratively processed within the guidance of Metro Resolution 85-592.

All but one of the proposed amendments are either exempt from regional air quality conformity analysis or else represent a major adjustment to projects modeled for conformity in the federally approved FY 1994 Conformity Determination. The South/North project will be captured in the 1996 Conformity Determination currently in preparation. (This Determination will also capture all of the projects proposed in the \$27 million Region 2040 Implementation Program).

Upon approval of this Resolution (and the companion Region 2040 programming), a 1996 Metro TIP will be prepared reflecting updated schedule and cost information for all previously approved projects and these newly approved projects. The revised comprehensive document will then be subject to independent public review and comment.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends adoption of Resolution No. 95-2183.

TW:lmk
95-2183.RES
7-12-95

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AMENDING THE)	RESOLUTION NO. 95-2183
FY 1995 METRO TRANSPORTATION)	
IMPROVEMENT PROGRAM TO UPDATE)	Introduced by
THE REGIONAL TRANSIT PROGRAM)	Councilor Rod Monroe, Chair
	JPACT

WHEREAS, Tri-Met is the region's designated transit provider; and

WHEREAS, the Tri-Met Board has previously approved a five-year program of transit project priorities in cooperation with Metro and the region's other local jurisdictions; and

WHEREAS, implementation of these priorities relies in part on federal revenue sources; and

WHEREAS, Metro must approve programming of federal funds that support transit projects in the urban portion of the Portland area in the Metro Transportation Improvement Program (TIP); and

WHEREAS, Tri-Met has updated its previous programming assumptions to reflect revised federal assistance and to begin implementation of future year priorities;

WHEREAS, Each of the amendments requested, except for programming of South/North LRT construction funds, are insignificant with respect to regional air quality emissions and/or have been modeled in the federally approved FY 1994 Air Quality Conformity Determination; now, therefore,

BE IT RESOLVED:

1. That the FY 1995 Metro TIP be amended to reflect the projects and authorized federal sums shown in Exhibit A except

for the South/North LRT construction funds.

2. That the South/North construction funds are approved contingent upon inclusion of the project in a federally approved FY 1996 Conformity Determination.

3. That other miscellaneous administrative amendments within the scope of those encompassed by Metro Resolution 85-592 are authorized to reflect current schedule and cost changes to previously approved projects.

4. That these various amendments shall be incorporated into an FY 1996 Metro Transportation Improvement Program which shall be incorporated without change into the 1996 State Transportation Improvement Program.

ADOPTED by the Metro Council this _____ day of _____,
1995.

J. Ruth McFarland, Presiding Officer

95-2183.RES
7-12-95
TW:lmk

EXHIBIT A: Proposed Transit Program Amendments Requiring Adoption by Resolution

	FY 96	FY 97	FY98	Federal Authorized	
Section 5307 (Former Section 9)					
Operating Assistance	2.785	2.785	2.785	8.355	Reduced from \$3.510 M annually
Westside/Hills LRT	8.000			30.000	\$22 M Previously obligated
Gresham Civic LRT Station PE	0.080			0.080	
Banfield Info Pylons	1.190			1.190	
Passenger Shelters	1.081			1.081	
Bus Purchase	0.000	7.138	7.069	14.207	FY 98 funds deferred from FY 96 & 97; reduced by .45 M
SNT Facility	2.000			2.000	
SNT Minibuses	0.699	1.635	1.462	3.796	
SNT Vehicle Hydraulic Lift	0.014			0.014	
Paratransit Info System	0.064			0.064	
Computer Equipment	0.778			0.778	
Bus Signal Priority Equip	0.072			0.072	
Registering Fare Boxes	0.072			0.072	
Accessible Stops	0.058			0.058	
Non-Revenue Vehicles	0.386			0.386	
Shop Equipment	0.122			0.122	
LR Maint. Equip/Vehicles	0.859			0.859	
Tires	0.863			0.863	
Engine/Trnsm's'n Rebuild Kits	0.321			0.321	
LRT Air Conditioning Retrofit	0.000	0.000	0.000	0.000	\$3.992 M project indefinitely postponed
Program Total	19.444	11.558	11.316	64.318	
Section 3 New Start					
Westside/Hills LRT	110.000	141.331	74.065	590.060	Increase from \$120 M caused by FY 95 deferral
South/North LRT			10.000	n.a.	Rises to \$50 M in FY 99 and \$100 M annually thereafter
Program Total	110.000	141.331	84.065	590.060	
Section 3 Light Rail System Completion					
Gresham Park & Ride	0.000	0.000	0.000	0.000	\$3.360 M now from Tri-Met resources
LRT Low Floor Vehicle Premium		9.530	0.000	17.180	\$7.65 balance obligated 4/19/95
Program Total	0	9.53	0	17.18	\$13.409 M of Banfield Completion/Project Breakeven funds obligated

**METRO**

Date: July 5, 1995

To: Metro Council
JPACT
Metro area elected officials
Metro area special district representatives

From: Gussie McRobert, Chair
Metro Policy Advisory Committee (MPAC)

Subject: MPAC Resolution in support of South/North Light Rail funding

Attached please find the resolution in support of state funding for the South/North Light Rail Line which was unanimously approved by members of the Metro Policy Advisory Committee (MPAC) at their meeting Wednesday, June 28. MPAC members ask your jurisdiction to pass a similar resolution or letter of support and send to your state senator(s) and representative(s),

The resolution outlines the role that light rail plays in regional transportation and growth management planning and again reaffirms how crucial an integrated system is to our efforts to maintain the region's livability.

Oregon Speaker of the House Bev Clarno has appointed a task force to develop a proposal for the legislature to act on in late July. The task force will begin deliberations July 10, holding a public hearing in Salem on July 11. The Special Session is scheduled for July 28 when hopefully the House and Senate will approve the state share of \$375 million for construction of the South/North Light Rail Line.

Thank you for your consideration.

METRO POLICY ADVISORY COMMITTEE

RESOLUTION IN SUPPORT OF SOUTH-NORTH LIGHT RAIL

June 28, 1995

(Presented by MPAC Member Zehren)

WHEREAS, in 1978, regional, state, and federal officials approved reallocation of \$214 million in monies planned for construction of the Mt. Hood Freeway and related projects to fund the construction of the MAX eastside light rail line between Portland and Gresham as the first segment of a regional light rail system; and

WHEREAS, since the MAX eastside light rail line commenced service in 1986, the line has achieved ridership levels of 24,600 riders weekdays, 21,100 riders Saturdays, and 12,500 riders Sundays, for a total current ridership of 8.1 million riders per year, thereby helping to address the tri-county metropolitan area's transportation and air quality needs; and

WHEREAS, since the MAX eastside light rail line commenced service in 1986, the line has served as a catalyst for over \$1.2 billion of regionally significant and beneficial development and investment in downtown Portland, at the site of the Rose Garden Arena, in the Lloyd Center area, in downtown Gresham, and at transit station sites elsewhere along the line in Multnomah County; and

WHEREAS, in 1990, the voters of the tri-county metropolitan area approved by an 75 percent affirmative vote the expenditure of \$125 million in regional monies to fund the construction of a westside light rail line between Portland and Hillsboro as the second segment of the regional light rail system; and

WHEREAS, in 1991, the Oregon Legislative Assembly and the Governor of Oregon approved the expenditure of \$113 million in state monies to fund the construction of the westside light rail line; and

WHEREAS, in 1991, the United States Congress approved the expenditure of \$516 million in federal monies to fund the construction of the westside light rail line and, in 1994, the Federal Transit Administration approved an additional \$75 million in federal monies to fund construction of the extension of the westside light rail line to Hillsboro; and

WHEREAS, construction of the west side light rail line presently is ongoing and the line is scheduled to commence service in September 1998, when it will help address the tri-county metropolitan area's transportation and air quality needs; and

WHEREAS, construction of the west side light rail line already is serving as a catalyst for regionally significant and beneficial development and investment in Portland, in Beaverton, and at transit station sites elsewhere along the line in Washington County; and

WHEREAS, in 1994, the voters of the tri-county metropolitan area approved by a 63 percent affirmative vote, and with an affirmative vote by the voters of every legislative district voting, the expenditure of \$475 million in regional monies to fund the construction of the south-north light rail line as the third segment of the regional light rail system; and

WHEREAS, during its 1995 Regular Session, the Oregon Legislative Assembly did not act on a bill approving the expenditure of \$375 million in state monies to fund the construction of the south-north light rail line; and

WHEREAS approval by the Oregon Legislative Assembly of expenditure of \$375 million in state monies for the south-north light rail line prior to Fall 1995 is necessary in order to secure approval by the United States Congress of the expenditure of \$750 million in federal monies to fund the construction of the south-north light rail line; and

WHEREAS Governor Kitzhaber has publicly stated his intention to convene a Special Session of the Oregon Legislative Assembly on July 28, 1995 to address approval of expenditure of \$375 million in state monies for the south-north light rail line; and

WHEREAS the south-north light rail line, like the eastside and westside light rail lines and other light rail lines planned for the region, is a critical component of the long-term transportation strategy for the tri-county metropolitan area, aimed at maintaining mobility while reducing dependency on the automobile, as determined by local and regional elected officials acting through the Joint Policy Advisory Committee on Transportation (JPACT), the Metro Policy Advisory Committee (MPAC), and the Metro Council as part of the region's 50-year Region 2040 planning process; and

WHEREAS the south-north light rail line, like the eastside and westside light rail lines and other light rail lines planned for the region, is a critical component of the long-term air quality strategy for the tri-county metropolitan area, aimed at avoiding air pollution and preserving industrial development airshed capacity, as determined by local and regional elected officials acting through MPAC and the Metro Council as part of the region's 50-year Region 2040 planning process; and

WHEREAS the south-north light rail line, like the eastside and westside light rail lines and other light rail lines planned for the region, is a critical component of the long-term land use and growth management strategy for the tri-county metropolitan area, aimed at supporting a livable region of connected but distinct communities with vital city centers, as determined by local and regional elected officials acting through MPAC and the Metro Council as part of the region's 50-year Region 2040 planning process; and

WHEREAS the south-north light rail line, like the eastside and westside light rail lines and other light rail lines planned for the region, generally will serve to preserve and enhance the long-term environmental quality, economic well-being, and overall quality of life of the tri-county metropolitan area, as determined by local and regional elected officials acting through MPAC and the Metro Council as part of the region's 50-year Region 2040 planning process; and

WHEREAS, in 1991, the Oregon Legislative Assembly authorized the voters of the tri-county metropolitan area to approve a charter to govern the affairs of the regional government in the metropolitan area; and

WHEREAS, in 1992, the voters of the tri-county metropolitan area approved a Metro Charter providing for a regional government to be governed by the Metro Council and the Metro Executive Officer with the advice of MPAC; and

WHEREAS under the Metro Charter, the members of the Metro Council and the Metro Executive Officer are elected officials who represent the citizens of the tri-county metropolitan area; and

WHEREAS under the Metro Charter, the membership of MPAC includes elected officials who represent the cities, counties, and special districts of the tri-county metropolitan area as well as citizens appointed to represent the metropolitan area as a whole;

NOW, THEREFORE, in consideration of all of the above decisions made during the last two decades by all of the above elected and other officials at the regional, state, and federal levels in support of a regional light rail system to serve all of the above long-term interests of the tri-county metropolitan area, the Metro Policy Advisory Committee of Metro:

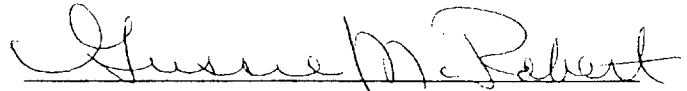
1. Reaffirms its strong support for the south-north light rail line as a critical component of the long-term transportation, air quality, economic development, land use and growth management, and quality of life strategy for the tri-county metropolitan area; and

2. Urges the Oregon Legislative Assembly and Governor Kitzhaber to approve the expenditure of \$375 million in state monies for the south-north light rail line during the July 28, 1995 Special Session; and

3. Urges the Metro Council and the Metro Executive Officer promptly to (a) reaffirm their support for the south-north light rail line and (b) convey their support to the Oregon Legislative Assembly and Governor Kitzhaber; and

4. Urges the elected council or board and mayor or elected executive of each local government in the tri-county metropolitan area promptly to (a) affirm their support for the south-north light rail line and (b) convey their support to the Oregon Legislative Assembly and Governor Kitzhaber.

UNANIMOUSLY ADOPTED this 25th day of June, 1995.



Gussie McRobert, Mayor of Gresham
Chair
Metro Policy Advisory Committee

COMMITTEE MEETING TITLE

VPACT

DATE

7-13-95

NAME

AFFILIATION

DON MORISSETTE

METRO

Bob Post

TRI-MET

Dean Lookingbill

RTC

Bob Bohman

MCCZ

Mike Hoglund

metro

Pamela Perck

Metro

MERRIL WAYLATT

Metro

Tom Kloster

NETBO

DAVE WILLIAMS

ODOT

GORDON OLIVER

OREGONIAN

LARRY SALT

METRO

David E. Gorman

Edgefield (Italian Inc)

MIKE SIMS

OREGON GASOLINE DEALERS ASS'N.

Mary Heguy

WSDOT

Les White

C-TRAN

Kathy Lehtola

Washington County

MAE TALBOT

Gresham

RICHARD ROSS

CITIES OF MULT CO (TRAC)

Jane Leeson

City of Gresham

Jay Mower

citizen, representing Hillsdale

Kathy Busse

Mult Co.

Emily Moeller

Commissioner Blumenauer

FOR SHARZ

CLATSOP COUNTY

COMMITTEE MEETING TITLE

JPACT

DATE

7/13

NAME

AFFILIATION

Meeky Blizard

City of Portland

STEVE DOTTERER

CITY OF PORTLAND STAFF

RANDALL POZDENA

ECONORTHWEST, PORTLAND

JOHN RIST

CLACKAMAS COUNTY

Craig Lomnick

City of Clackamas Co.

TANYA COLLIER

MULTNOMAH COUNTY

D. P. Rogers

Clackamas County

Linda Peters

Wash Co.

Jerry Smith

WSDOT

John Godsey

Hillsboro

Claudette LaVert

Cities of Mult County

Elsa Coleman

City of Portland

Tom Coffey

City of Lake Oswego