BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ADOPTING THE PORTLAND AREA AIR QUALITY CONFORMITY DETERMINATION FOR THE FY 96 TRANSPORTATION IMPROVEMENT PROGRAM AND 1995 INTERIM FEDERAL REGIONAL TRANSPORTATION PLAN	)))))))	RESOLUTION NO. 95-2196 Introduced by Councilor Rod Monroe, JPACT Chair

WHEREAS, The federal Clean Air Act as amended stipulates that no transportation project may cause or contribute to violation of the National Ambient Air Quality Standards (NAAQS); and

WHEREAS, The Oregon Department of Environmental Quality (DEQ) is lead agency for development and implementation of the Oregon State (Air Quality) Implementation Plan (SIP) for attainment and maintenance of the NAAQS; and

WHEREAS, DEQ has, pursuant to the Clean Air Act, recently adopted regulations (DEQ rule) for assuring conformity of planned transportation projects with the SIP; and

WHEREAS, Metro is the Portland area's designated Metropolitan Planning Organization (MPO); and

WHEREAS, The DEQ rule requires the MPO to prepare and approve both a qualitative and quantitative analysis of planned transportation projects' conformity with the SIP (conformity determination) whenever significant amendments are approved of either the Regional Transportation Plan (RTP) and the Metro Transportation Improvement Program (MTIP); and

WHEREAS, The MTIP also acts as the Portland area element of the State TIP (STIP) which must also conform with the SIP; and

WHEREAS, Metro has both recently adopted an updated 1995 Interim Federal RTP and has amended the FY 95 MTIP to allocate $27 million of funds to new transportation projects; has programmed significant new transit projects and programs including a Major Investment Study for the South/North LRT project; and has approved other miscellaneous transportation projects since January of 1994; and

WHEREAS, ODOT is currently updating the STIP to reflect MTIP amendments; and

WHEREAS, Local governments propose to approve numerous locally funded transportation projects of potential significance to regional air quality; and

WHEREAS, Metro and all affected local jurisdictions have approved a Memorandum of Understanding which expires on September 30, 1995, which specifies that Metro shall demonstrate conformity for transportation projects which lie outside of Metro's boundaries but within the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Areas, and being that no such projects were declared to Metro; and

WHEREAS, Metro has designated the Transportation Policy Alternatives Committee (TPAC) as the standing body responsible for interagency consultation during preparation of the conformity determinations pursuant to the DEQ rule; and

WHEREAS, TPAC charged its TIP Subcommittee to prepare a recommendation for TPAC adoption; and

WHEREAS, The TIP subcommittee reviewed a draft of the qualitative portion of the conformity determination; consulted on

items specified in the DEQ rule, including the adequacy of the methodology proposed by Metro to conduct the quantitative analysis of regional conformity; and provided comments on the draft determination; and

WHEREAS, Substantive comments of the subcommittee members have been responded to within the qualitative conformity determination, the whole of which determination is attached in Exhibit A; and

WHEREAS, The draft qualitative conformity determination has been otherwise available for public review for 30 days and no comments have been received; and

WHEREAS, The subcommittee recommended that TPAC adopt the conformity determination provided that the quantitative analysis was satisfactorily concluded; and

WHEREAS, Metro has since concluded the quantitative analysis and its results demonstrate conformity of the region's planned transportation projects with the SIP; now, therefore,

BE IT RESOLVED:

1. That the 1995 Portland area Conformity Determination is adopted by Metro.

2. That TPAC has met its obligation under the DEQ rule to conduct interagency consultation as part of the current conformity determination.

3. That the 1995 Interim Federal RTP conforms with the SIP.

4. That all currently programmed transportation projects declared to Metro, whether they will rely on local, state or federal funds, including non-exempt projects approved by Metro since January 1994, conform with the SIP and are to be

consolidated into an FY 1996 MTIP to the extent required by applicable regulations.

5. That the Region 1 element of the STIP conforms with the SIP insofar as its urban area programming is comprised of the MTIP without change, as specified by federal regulations, and that its rural area programming reflects the scope and design of those projects declared by ODOT to Metro.

6. That staff are directed to forward this conformity determination to ODOT Headquarters staff for approval and to request that ODOT submit the determination for federal review and approval.

ADOPTED by the Metro Council this 28 day of Sept., 1995.

J. Ruth McFarland, Presiding Officer

Approved as to Form:

Daniel B. Cooper, General Counsel

95-2196.RES
8-23-95/TW:lmk

EXHIBIT A

Interim Conformity Determination (Phase II) for the Portland Metropolitan Area 1995 Regional Transportation Plan and FY 1996 Through Post-1999 Transportation Improvement Program

I. INTRODUCTION

A. Basis of Conformity Requirement

The following Conformity Determination is for the Portland Area FY 1996 through Post-1999 Transportation Improvement Program (TIP) and the updated 1995 Regional Transportation Plan (RTP). It has been prepared pursuant to the newly adopted State requirements governing Phase II Interim Period conformity determinations.[1]

The Clean Air Act Amendments of 1990 (the Act) required EPA to promulgate a rule containing criteria and procedures for determining conformity of regional transportation plans (RTP) and transportation improvement programs (TIP) with State Implementation Plans (SIP) for attainment and maintenance of federal air quality standards. This rule was adopted by EPA on November 24, 1993. Among other things, the rule required Oregon's Department of Environmental Quality (DEQ) to submit a revision of Oregon's SIP detailing new criteria and procedures for assuring conformity of transportation projects and plans with the SIP. DEQ adopted these revisions, which closely mirror the federal rule, as OAR 340-20-710 through 340-20-1080. Both the DEQ and EPA rules require that qualitative and quantitative analyses support Metro's Conformity Determinations.

B. RTP/TIP Relationship

The region's current RTP was adopted in May 1995. It is the "umbrella document" which integrates the various aspects of regional transportation planning into a consistent coordinated process. It identifies the long-range (20-year) regional transportation improvement strategy and 10-year project priorities established by Metro. It defines regional policies, goals, objectives and projects needed to maintain mobility and economic and environmental health of the region through 2015. The Plan must be "constrained" to (i.e., can only rely on) federal, state, local and private revenue sources that are considered "reasonably available" within the 20-year timeframe of the Plan. The Plan must demonstrate dedication of adequate

[1]The "interim" refers to the period prior to submission to EPA by DEQ of a SIP revision documenting proposed strategies to maintain air quality standards.

resources to preserve and maintain the system before allocating resources for its expansion.

All projects are retained in the RTP until implemented or until a "no-build" decision is reached, thereby providing a permanent record of proposed improvements. Projects may also be eliminated from the RTP in the course of overall amendment or update of the document. The 1992 RTP was last conformed with the SIP in August 1993 and its conforming status lapsed in May 1995, largely because the prior Plan was not yet fiscally constrained, per ISTEA requirements.

It is from proposed improvements found to be consistent with the RTP that projects appearing in the TIP and its three-year Approved Program are drawn. The TIP relates to the RTP as an implementing document, identifying improvement projects consistent with the RTP that are authorized to spend federal and state funds within a three-year time frame. Projects are allocated funding in the TIP at Metro's initiative and at the request of local jurisdictions, Tri-Met and ODOT. Metro must approve all project additions to the TIP. Among other things, Metro must find that proposed capital improvements are consistent with RTP policies, system element plans and identified criteria in order to be eligible for inclusion in the TIP for funding.

The DEQ Rule also specifies that local projects must be assessed for conformity with the SIP consistent with the Clean Air Act requirement that no transportation project -- not simply federally funded ones -- may interfere with achieving national air quality goals. Locally funded projects are not included in the TIP. However, local system enhancement projects -- including many far smaller in scale than that needed to significantly affect the regional transportation system -- are identified in the RTP. Moreover, the Metro's regional transportation model routinely includes projects that fall far below the threshold of those able to significantly affect regional air quality. Therefore, the full model -- not a "regionally significant" project subset -- is used to analyze transportation system effects on air quality in the Portland region. This breadth of analysis assures conformity of both regional and local project air quality effects with the SIP, even though local projects are not included in the TIP. It also assures that Metro's regional travel demand model is routinely scrutinized by all local jurisdictions for accuracy of both the project list and facility characteristics.

The TIP was last assessed for conformity with the SIP in August 1993 and its conforming status has also since lapsed. Additionally, the TIP has been amended to both include and to delay regionally significant projects scheduled within the Three Year Approved Program period (FY 96 through FY 98) and must therefore be reassessed for conformity with the SIP.

II. QUALITATIVE ANALYSIS

A. Background

The State Conformity Regulations specify that a *qualitative* analysis be prepared showing that both the Region's Plan and TIP address four broad planning and technical requirements, including a fiscally constrained basis, reliance on the latest planning assumptions, use of the latest emissions models and estimates and that both the RTP and TIP generally enhance or expedite implementation of transportation control measures (TCMs) identified in the SIP. It must also be documented that preparation of these documents conformed with interagency consultation procedures described in the Rule. The Qualitative Analysis portion of the Determination is provided, below.

B. Analysis

1. Consistency with the Latest Planning Assumptions (OAR 340-20-810).

   a. Requirement: *The State Rule requires that Conformity Determinations be based "on the most recent planning assumptions" derived from Metro's approved "estimates of current and future population, employment, travel and congestion."*

   Finding: In the *quantitative* analysis (see Section E, below), analysis year projections for population and employment are forecast by Metro, the region's designated Metropolitan Planning Organization (MPO), from a 1990 base that reflects population and employment estimates calibrated to 1990 Census data. Travel and congestion forecasts in the analysis years of 1995, 2005 and 2015 are derived from this base using Metro's regional travel demand model and the EMME/2 transportation planning software.

   Within subroutines of the model, Metro calculates the bike/walk mode split for calculated travel demand based on variables of trip distance, car per worker relationship, total employment within one mile and a Pedestrian Environmental Factors (PEF) calculated for each of the 1,260 Transportation Analysis Zones (TAZ). The PEFs reflect variables of each TAZ including topography, parcel size, intersection density, employment density and other similar objective variables. The 1995 analysis year uses 1990 PEF conditions in each TAZ. The 2005 and 2015 analysis years assume identical PEF conditions. Transit trip making is also affected by the PEFs, though only slightly. Both the population and

employment estimates and the methodology employed by the EMME/2 model have been the subject of extensive interagency consultation and agreement (discussed further in Section C, below).

The resulting estimates of future year travel and congestion are then used with the outputs of the EPA approved MOBILE 5a emissions model to determine regional emissions. In all respects, the model outputs reflect input of the latest approved planning assumptions and estimates of population, employment, travel and congestion.

b. Requirement: *The State Rule requires that changes in transit policies and ridership estimates assumed in the previous conformity determination must be discussed.*

Finding: The current Determination assumes significant new *transit capacity* provided by the South/North LRT line and associated feeder bus service starting in 2005. By this time, LRT service is assumed from the Convention Center south to the Clackamas Town Center. By 2015, it is assumed that LRT service will be extended north from the Convention Center to 99th Avenue in Clark County, Washington.

Modelling conducted for FTA as part of the South/North Major Investment Study (MIS) projects approximately 30,000 new riders *in the corridor by 2015* due to full project implementation (an approximate one percent increase of total regional transit ridership). The MIS does not project *2005 ridership*. The Quantitative Analysis portion of this Determination independently generates a 2005 ridership assumption as part of the regional travel demand and distribution calculations, based on the service assumptions discussed below in item "c." Ridership is less than that calculated in the MIS because: 1) the north half of the LRT line is not assumed to be complete in 2005; and 2) less population and employment is allocated to the corridor in 2005 than in 2015. The Determination's projection of 2015 ridership is also discounted from that developed by the South/North MIS to reflect the RTP's more highly constrained transit system operating revenue assumptions. The MIS assumes a constant

The *transit policies* which guide modeled implementation of the new South/North service are consistent with previous Conformity modelling of the Westside and Hillsboro LRT service starts: bus resources providing downtown radial service are replaced with LRT service and previous short-haul service between former radial trunk routes is reconfigured to support new LRT stations and surrounding neighborhoods. This represents continuation of *existing transit policy* and its extension to the expanded LRT system.

c. Requirement: *The State Conformity Regulations require that reasonable assumptions be used regarding transit service and increases in fares and road and bridge tolls over time.*

Finding: There are no road or bridge tolls in place in the metropolitan area and none are assumed in either the TIP, the RTP, or consequently, in the conformity determination, over time. Auto operating costs are factored into the mode choice subroutines of the regional travel model. These costs are held constant to 1985 dollars. Parking costs are assumed to increase one percent above inflation in the Central Business and Lloyd Districts as a reflection of parking control strategies; costs are held to inflation in all other districts. The three zone transit fare structure adopted in 1992 is held constant through 2015. User costs (for both automobile and transit) are assumed to keep pace with inflation and are calculated in 1985 dollars.

Service assumptions (i.e., transit vehicle headways) also affect trip assignment to transit. South/North LRT service increase, and the distribution of supporting bus service, is discussed above. An annual 1.5 percent "usual and customary" service hour increase is assumed for regional bus service until start-up of Phase 1 South/North LRT service. At 2005, this increment of new bus service is slightly reallocated throughout the region and feeder service within the LRT Corridor is reinforced. Thereafter, non-LRT service hours remain flat through 2015, and the Convention Center to Clark County LRT service is added. This increase of transit service levels is consistent with the RTP's constrained revenue assumptions.

d. Requirement: *The State Conformity Regulations require that the latest existing information be used regarding the effectiveness of TCMs that have already been implemented.*

Finding: As is discussed further below, all TCMs identified in the SIP have been implemented. The quantitative analysis discussed below does not assume effectiveness of any of the TCMs as a factor in its computation of non-SOV travel. (See also the last full paragraph on page18).

2. Latest Emissions Model (OAR 340-20-820)

a. Requirement: *The State Conformity Regulations require that the conformity determination must be based on the most current emission estimation model available.*

Finding: As discussed in greater detail in item 5(d) of this Section and in Section III of this Determination, Metro employed EPA's recommended Mobile 5a emission estimation model in preparation of this conformity determination. Additionally, Metro uses EPA's recommended EMME/2 transportation planning software to estimate vehicle flows of individual roadway segments. These model elements are fully consistent with the methodologies specified in OAR 340-20-1010.

3. Consultation (OAR 340-20-830

a. Requirement: *The State Conformity Regulations require the MPO to consult with the state air quality agency, local transportation agencies, DOT and EPA regarding enumerated items. TPAC is specifically identified as the standing consultative body.* (OAR 340-20-760(2)(b).

Finding: Fifteen specific topics are identified in the Regulations which require consultation. TPAC is identified as the Standing Committee for Interagency Consultation. TPAC, as allowed by the Rule, has deferred administration of the consultation requirements to a subcommittee, specifically, the TIP Subcommittee. This committee has met on several occasions since adoption of the Rule and has consulted as required on the enumerated topics. The subcommittee recommendations are reflected within this Determination qualitative analysis -- ***which has been submitted for full TPAC review and approval*** -- and address the following issues.

i. Determination of which Minor Arterial and other transportation projects should be deemed "regionally significant."

Metro models virtually all proposed enhancements of the regional transportation network proposed in the TIP, the RTP and by local and state transportation agencies. This level of detail far exceeds the minimum criteria specified in both the State Rule and the Metropolitan Planning Regulations for determination of a regionally significant facility. This detail is provided to ensure the greatest possible accuracy of the region's transportation system predictive capability. The model captures improvements to all principal, major and minor arterial and most major collectors. Left turn pocket and continuous protection projects are also represented. Professional judgement is used to identify and exclude from the model those proposed intersection and signal modifications, and other miscellaneous proposed system modifications, (including bicycle system improvements) whose effects cannot be meaningfully represented in the model.

To ensure accuracy of the model used in preparation of this Conformity Determination, a Project Atlas was compiled of all proposed projects used by Metro to configure modeled networks. Over a period of three months, Metro modelling staff conferred again with ODOT and County and local transportation agency staff for comment and correction. The results of this consultation were used to construct the analysis year networks identified in Appendix A of this Determination. (The final Project Atlas will be prepared in October, 1995. Appendix A of this Determination summarizes the analysis year network assumptions more graphically depicted in the Project Atlas.)

ii. Determine which projects have undergone significant changes in design concept and scope since the regional emissions analysis was performed.

Metro's modelling staff have refined all model links at this time so that all project representations reflect current design concept and scope. ODOT has modified an element of the US 26 improvements currently under construction relating to the Sylvan Interchange off-ramp and associated collector-distributor road system. These changes were reviewed by the Conformity Consultation subcommittee of TPAC and were found to cause an insignificant deviation from the project scope previously conformed as part of the FY 94 TIP, thus clearing the way for advancement of this project prior to completion of the current Determination.

iii. Analysis of projects otherwise exempt from regional analysis.

All projects capable of being modeled have been included in the Conformity Analysis quantitative networks.

iv. Advancement of TCMs.

There are no TCMs identified in the SIP which are not already implemented. (See also, item 4 below.)

v. PM_{10} Issues.

The region is in attainment status for PM_{10} pollutants.

vi. forecasting vehicle miles traveled and any amendments thereto.

Metro has developed the currently approved forecasts of current and future regional VMT in close consultation with DEQ as part of DEQs Ozone Maintenance Plan development process.

vii. determining whether projects not strictly "included" in the TIP have been included in the regional emission analysis and that their design concept and scope remain unchanged.

As described in item "i" above, Metro's modelling staff have conferred with all the region's jurisdictions to ascertain the design concept and scope of all locally funded projects not included in the TIP and to ensure their inclusion within the current Conformity Determination quantitative analysis. During the prescribed quarterly consultation meetings, local jurisdictions are charged with declaration of changes to such projects and the consultation committee will consider the effects thereof on project conformity. It is anticipated that the "regional significance" of such changes, and of any new projects introduced between revisions of the conformity determination, will be determined by the consultation committee on the basis of project changes to existing system volume, capacity and/or emissions thresholds that are yet to be determined by the committee.

viii. project sponsor satisfaction of CO and PM10 "hot-spot" analyses.

The consultation subcommittee noted the absence of MPO expertise concerning project-level quantitative conformity analysis. The committee recommends that TPAC formally approve deference to ODOT staff expertise regarding project-level compliance with localized CO conformity requirements and potential mitigation measures.

ix. evaluation of events that will trigger new conformity determinations other than those specifically enumerated in the rule.

The committee shall review regional activity on a quarterly basis and evaluate whether individual project proposals or revision of planning assumptions and/or methodologies warrant recommendation to TPAC of a revision of the regional emissions analysis for reasons other than those prescribed in the Rule.

x. evaluation of emissions analysis for transportation activities which cross borders of MPOs or nonattainment or maintenance areas or basins.

The Portland-Vancouver Interstate Maintenance Area (ozone) boundaries are geographically isolated from all other MPO and nonattainment and maintenance areas and basins. Emissions assumed to originate within the Portland-area (versus the Washington State) component of the Maintenance Area are independently calculated by Metro. The Clark

County Regional Transportation Commission (RTC) is the designated MPO for the Washington State portion of the Maintenance area. Metro and RTC coordinate in development of the population, employment and VMT assumptions prepared by Metro for the entire Maintenance Area. RTC then performs an independent Conformity Determination for projects originating in the Washington State portion of the Maintenance Area.

Conformity of projects occurring outside the Metro boundary but within the Portland-area portion of the Interstate Maintenance Area are assessed by Metro under terms of a Memorandum of Understanding between Metro and all potentially affected state and local agencies. No projects affecting state facilities nor any local projects in the area's subject to the MOU were declared to the MPO for this determination. The MOU expires at the end of September, 1995 and will require renewal for subsequent Determinations.

xi. *disclosure to the MPO of regionally significant projects, or changes to design scope and concept of such projects that are not FHWA/FTA projects.*

See item "i" above. Declaration of new projects not identified during update of the Project Atlas for this Conformity Determination shall be made on a quarterly basis to the consultation committee.

xii. *the design schedule, and funding of research and data collection efforts and regional transportation model development by the MPO.*

This consultation occurs in the course of MPO development and adoption of the Unified Planning Work Program.

xiii. *development of the TIP.*

TIP development is routinely undertaken and approved by TPAC.

xiv. *development of RTPs.*

RTP development is routinely undertaken and approved by TPAC.

xv. *establishing appropriate public participation opportunities for project level conformity determinations.*

The subcommittee has not yet discussed this issue either with respect to current practices, or desirable alternatives, if any. However, Metro and DEQ staff have discussed the issue. Metro staff will raise the topic at the

next subcommittee to ascertain whether any such procedures currently in practice and to define the context, if any, under which such measures would be warranted. In line with other project-level aspects of conformity determinations, it would appear most appropriate that project management staff of the state and local operating agencies be responsible for any public involvement activities that may be deemed necessary in making project-level conformity determinations.

4. Timely Implementation of TCMs (OAR 340-20-840).

a. Requirement: *The State Conformity Regulations require MPO assurance that "the transportation plan, [and] TIP... must provide for the timely implementation of TCMs from the applicable implementation plan."*

Finding: Metro and ODOT have reviewed the list of TCMs (listed below) and have determined that all TCMs identified in the SIP have been implemented and that neither the RTP nor TIP will interfere with the TCMs.

Relevant SIP Section: Section 3.4 of the Oregon SIP relates to the Oregon portion of the Portland-Vancouver Interstate Ozone Maintenance Area. Section 4.2 of the Oregon SIP relates to control of Carbon Monoxide. These sections list implemented and committed TCMs and describe their current status.

Metro and ODOT, in consultation and concurrence with DEQ, have reviewed the status of all committed TCMs in the Ozone and CO components of the SIP and have determined all to have been implemented. It should be noted that certain TCMs included in Section 4.3 (Ozone) were included despite being determined at the time not to be required to achieve the National Ambient Air Quality Standards (NAAQS). For Carbon Monoxide (Section 4.2), only the Downtown Portland Air Quality Plan, among the identified additional TCMs, was determined to be necessary for attainment. The status of all required and non-required committed TCMs are described Table 1, below:

TABLE 1

State Implementation Plan TCMs:
Section 4.3.3.4 (Ozone) and Section 4.2.4.2 (CO)

Required Commitments

a. Inspection/Maintenance

b. Improved Public Transit
- Downtown Transit Mall
- Bus Purchases
- Bus Shelters
- Fareless Square

c. Exclusive Bus and Carpool Lanes

d. Areawide Carpool Programs

e. Long-Range Transit Improvements (Banfield LRT)

f. Park-and-Ride Lots

g. Employer Programs to Encourage Carpooling and Vanpooling

h. Traffic Flow Improvements

i. Bicycle Program

j. I-5 North Rideshare Program

k. Emission Standards for Industrial Sources

All of these required committed TCMs have been implemented.

Section 4.3.3.5 (Ozone) Non-Required Commitments:

a. Transit Improvements

b. Bus Purchases

c. Transit Fare Incentives

d. Ramp Metering

e. Traffic Flow Improvements

f. McLoughlin Corridor Rideshare Program

g. Employee Bicycle Planning Project

h. State Legislation to Encourage Ridesharing

i. Shop-and-Ride Program

j. City of Portland Bicycle Parking Program

k. Employee Flexible Working Hours Program

l. Traffic Signal System Project

m. Downtown Portland Air Quality Program

n. City of Portland Employee Travel

All of these additional TCMs have been implemented.

Section 4.2.4.3 (Carbon Monoxide) Additional Commitments:

a. McLoughlin Corridor Rideshare Program

b. Employee Bicycle Planning Project

c. State Legislation to Encourage Ridesharing

d. Shop-and-Ride Program

e. City of Portland Bicycle Parking Program

f. Employee Flexible Working Hours Program

g. Traffic Signal System Project

h. Downtown Portland Air Quality Plan

i. City of Portland Employee Travel

All of these additional TCMs have been implemented.

Note: Metro, in conjunction with Oregon DEQ began revision of the SIP in FY 94. A formal amendment will be submitted as a Declaration of Attainment and will include a required Long-term Maintenance Plan. That plan will include additional TCM's, or other air quality control measures, as necessary.

5. Other Qualitative Conformity Determinations and Major Assumptions

a. Findings: The Regional Transportation Plan (RTP) is prepared by Metro. SIP provisions are integrated into the RTP as described below, and by extension into subsequent TIPs which implement the RTP.

The scope of the RTP requires that it possess a guiding vision which recognizes the inter-relationship among (a) encouraging and facilitating economic growth through improved accessibility to services and markets; (b) ensuring that the allocation of increasingly limited fiscal resources is driven by both land use and transportation benefits; and (c) protecting the region's natural environment in all aspects of transportation planning process. As such, the RTP sets forth three major goals:

No. 1 - Provide adequate levels of accessibility within the region;

No. 2 - Provide accessibility at a reasonable cost; and

No. 3 - Provide adequate accessibility with minimal environmental impact and energy consumption.

Three objectives of Goal No. 3 directly support achievement of National Ambient Air Quality Standards (NAAQS):

1. To ensure consideration of applicable environmental impact analyses and practicable mitigation measures in the federal RTP decision-making process.

2. To minimize, as much as practical, the region's transportation-related energy consumption through improved auto efficiencies resulting from aggressive implementation of Transportation System Management (TSM) measures (including freeway ramp metering, incident response and arterial signal optimization programs) and increased use of transit, carpools, vanpools, bicycles, walking and TDM [Transportation Demand Management] programs such as telecommuting and flexible working hours.

3. To maintain the region's air quality.

Performance Criteria: Emissions of hydrocarbon and oxides of nitrogen by transportation-related sources, in combination with stationary and area source emissions, may not result in the federal ozone standard of .12 ppm being exceeded. Emissions of Carbon Monoxide from transportation-

related sources may not, in combination with other sources, contribute to violation of the federal standard of 9 ppm. The three-year Approved Program Element of the region's Transportation Improvement Program (TIP) should be consistent with the SIP for air quality.

These objectives are achieved through a variety of measures affecting transportation system design and operation. The plan sets forth objectives and performance criteria for the highway and transit systems and for transportation demand management (TDM).

The highway system is functionally classified to ensure a consistent, integrated, regional highway system of principal routes, arterial and collectors. Acceptable level-of-service standards are set for maintaining an efficient flow of traffic. The RTP also identifies regional bicycle and pedestrian systems for accommodation and encouragement of non-vehicular travel. System performance is emphasized in the RTP and priority is established for implementation of transportation system management (TSM) measures.

The transit system is similarly designed in a hierarchical form of regional transitways, radial trunk routes and feeder bus lines. Standards for service accessibility and system performance are set. Park-and-ride lots are emphasized to increase transit use in suburban areas. The RTP also sets forth an aggressive demand management program to reduce the number of automobile and person trips being made during peak travel periods and to help achieve the region's goals of reducing air pollution and conserving energy.

In conclusion; review by Metro and the Oregon Department of Transportation of the 1995 Interim Federal RTP and the ozone and carbon monoxide portions of the SIP, has determined that the RTP is in conformance with the SIP in its support for achieving the NAAQS. Moreover, the RTP provides adequate statements of guiding policies and goals with which to determine whether projects not specifically included in the RTP at this time may be found consistent with the RTP in the future. Conformity of such projects with the SIP would require interagency consultation.

b. Finding: The FY 1994 Conformity Determination estimate of 1990 Baseline summer CO emissions was based on use of a "Reid Vapor Pressure" variable as input to the Mobile 5a emission analysis. Upon further review by DEQ staff, this variable was revised. The effect of the revision is a dramatically lower prediction of expected 1990 summer HC in the FY 96 emission analysis than was reported in the 1994 Determination. No other values were affected by revision of the value.

c. Another change to the FY 1996 modeling methodology is use of EMME/2 to determine the proportion of motor vehicle starts occurring within each of the model's approximately 1,260 zones that are "hot" versus "cold" starts. "Cold" start conditions generate dramatically greater amounts of pollutants, principally within the first 30-40 seconds. Previous practice manually assigned a percentage value for hot versus cold starts to each zone. This revision presumably provides a more precise estimate of actual total regional vehicular emissions.

d. The model used to prepare the emissions forecast for the FY 96 TIP and 1995 RTP differed substantially from that used to forecast emissions for the FY 94 TIP and 1992 RTP. Metro discontinued use of its zone-based travel forecast model and adopted a link-based travel forecast model, as preferred by EPA.

III. QUANTITATIVE ANALYSIS

A. Background

A finding of TIP and RTP conformity under the State Conformity Regulations requires that a quantitative analysis be conducted. The quantitative analysis requires development of baseline and action-year, link-based travel networks in each of three analysis years (1995, 2005 and 2015); calculation of resulting region-wide travel demand and distribution of region-wide travel flows on each of the analysis-year networks; and a subsequent emissions analysis using MOBILE 5a (OAR 340-20-930). The Portland metropolitan area has the capability to perform such a quantitative analysis.

To determine conformity, Metro must show that both the RTP and TIP contribute to annual emissions reductions. During the Phase II Interim period for the proposed TIP, "contributes" means that implementation of those projects derived from the TIP/RTP modeled in the "action" network in each analysis year, will decrease emissions in the analysis years relative to emissions that would result if only those project contained in the "baseline" networks were to be built. All other factors must be held constant in each analysis year including annual predicted increases of population and employment. Predicted travel demand varies on the basis of the differing infrastruture investments that are assumed in each scenario. Emissions under each "action" scenario must also be less than in the 1990 base-year.

B. Analysis

1. Determine Analysis Years.

a. Requirement: *The State Conformity Regulations require the first analysis year to be no later than 1995 for CO and 1996 for Ozone. The second analysis year must be at least five years beyond the first analysis year, i.e., 2000 or later. The last year of the region's long-range plan (RTP) must also be an analysis year. The 1995 RTP horizon is 2015. Analysis years may not be greater than 10 years apart.*

Finding: Pursuant to OAR 340-20-930(2) and after consultation with DEQ and the federal EPA, Metro has adopted analysis years of 1995, 2005 and 2015 for this Conformity Determination. The year 2005 was selected as the second analysis year: it is 10 years after the first analysis year and is not greater than ten years before the final analysis year of 2015, which is the RTP horizon year.

2. Define the Baseline Travel Network

a. Requirement: *The State Conformity Regulations define the Baseline scenario for each analysis year to be the future transportation system that would result from current programs, comprised of:*

1) all in-place regionally significant highway and transit facilities, services and activities;

2) all ongoing travel demand management or transportation system management activities; and

3) completion of regionally significant projects (regardless of funding source) which are currently under construction or are undergoing right-of-way acquisition (except for hardship acquisition and protective buying); come from the first three years of the previously conforming transportation plan and/or TIP [FY 94 TIP]; or have completed the NEPA process.

Finding: Three baseline networks were identified for each of the three analysis years based on the criteria stated above. In essence, these networks are comprised of transportation projects whose implementation is already so well advanced as to be virtually assured of full implementation. It should be noted that the 2005 and 2015 baseline networks are identical, as no projects expected to be operational in the 2006 to 2015 timeframe meet the baseline criteria (i.e., none is "virtually assured" of implementation at this time).

Note: Technically the Farmington Road Widening project (Murray to 172nd) in Washington County did qualify for inclusion in the Baseline network as the full project scope had been conformed in the FY 94 TIP with assumed construction by 2000. Thereafter, funding for the last

project phase slipped and implementation is assumed to occur after 2005. To be conservative, this latter phase was only modeled as part of the Action scenario.

3. Define the TIP and RTP "Action" Scenarios.

a. Requirement: *The State Conformity Regulations define that the action networks in each analysis year "shall be the transportation system that will result in each year from implementation of the proposed transportation plan, TIPs adopted under it, and other expected regionally significant projects," including:*

1) all projects from the Baseline scenario (e.g., the 2005 action network must include all projects contained in both the 1995 and 2005 baseline networks, etc.); and

2) all regionally significant projects, including highway and transit projects, and TCM, TDM and TSM activities known to the MPO whether federally or non-federally funded, whether "in" the TIP/RTP or not, and that have clear funding sources or commitments and completion dates consistent with the analysis years. The design concept and scope of all projects must be described in sufficient detail to estimate emissions.

Finding: "Action" networks were developed for each analysis year (1995, 2005 and 2015.)[2] The composition of each network is indicated in Appendix A. The 1995 *Action* network is nearly identical to the 1995 *Baseline* network (see footnote 2, as well as Appendix B, below). The 2005 Action network includes: 1) all the 1995 and 2005 Baseline projects; 2) all the 1995 Action network projects; and 3) all other federal, state and locally funded projects with clear funding commitments and that are expected to be operational by the analysis year, but which are not otherwise well advanced. The 2015 Action network represents full buildout of the 1995 RTP Fiscally Constrained system.

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[2] The 1995 action network differs only slightly from the 1995 baseline network. Because the 1995 fiscal year was nearly over at the time of this Determination, most projects were so well advanced as to warrant inclusion in the baseline network. However, five bike projects were only recently identified for construction as part of the Willamette River Bridges Crossing *Program* previously approved in the 1994 TIP (CMAQ program). While funding for the *projects* was secured with adoption of the Bridge *Program* in 1994, the identification of and commitment to proceed with the four projects was only recently made. For this reason the projects warrant inclusion in the action network.

The beneficial effects of the projects though, cannot be represented within the EMME/2 model. Thus the air quality benefit attributable to these five bike projects has been credited as a post-model decrease of action network emissions. The methodology used for this post-model reduction of 1995 Action network emissions is described in Appendix B.

The intent of the action networks is to identify the incremental air quality effect that would result from projects and programs whose implementation -- while probable with respect to availability of reasonably anticipated revenues -- are not at this time well advanced and whose emissions are thus "discretionary" with respect to unavoidable effects on the regional airshed. In short, should emissions modeled from the action network be greater than those from the baseline, action network projects can theoretically be cancelled or modified as needed to achieve emission reductions. In this way they differ from baseline projects whose design -- and consequent emissions -- are assumed to be fixed.

Note: Numerous projects comprising both the action and baseline networks in all analysis years are incapable of representation within the EMME/2 model. The vast majority of these projects are bicycle and pedestrian projects/programs and other TSM activities. (This class of projects is identified in Appendix A with "no" entered in the "Can Be Modeled" column.) Virtually all of these projects would be expected to decrease emissions as they support non-auto and/or non-SOV travel modes, or otherwise *marginally* enhance the efficiency of the highway network, reducing emissions of CO and Ozone precursor compounds).

Historically, the region has not taken credit for benefits theoretically attributable to this class of projects. This has been mostly because the region's past quantitative analyses have not needed emission reductions in excess of those provided by projects capable of representation within the model. Given the lack of need, and because the ad hoc methodologies for calculating such off-model benefits are very labor intensive, are in most cases not well established and/or accepted and thus are subject to controversy when employed to demonstrate reductions of automotive emissions, Metro has chosen not to seek emission reduction credit for these types of projects. However, in future years, as nation-wide monitoring of CMAQ projects provides more reliable data about benefits of such projects, or should this year's analysis require supplemental emission reductions, the region may take credit for these activities.

3. Perform the Emissions Impact Analysis.

Note: The following *qualitative* discussion was prepared assuming positive outcome of the *quantitative* analysis. In the event Action scenario emissions exceed Baseline levels, or 1990 emissions, the networks will require revision and/or post-model analysis of projects incapable of representation in the EMME/2. The results of the quantitative analysis will be available prior to TPAC, JPACT and Metro Council consideration of this Determination. All elements of the quantitative analysis which generate the "final numbers" are discussed in this Determination. Metro believes that sufficient

information is presented within the qualitative analysis portion of this analysis to meaningfully comment regarding those elements of the analysis which may merit modification pertinent to outcome of the actual network simulations. In short, it is not the "final numbers" that count so much as the assumptions which go into their production and these assumptions and methodologies are fully accessible for public consideration at this time.

a. Requirement: *The State Conformity Regulations defines the analysis as estimating the difference between the TIP and RTP Baseline and Action scenarios in areawide emissions. Analysis is conducted for emissions of Carbon Monoxide (CO) and Ozone (measured as emission of precursor compounds of Oxides of Nitrogen, or NOx and Volatile Organic Compounds, or VOC, which are measured as Hydrocarbons, or HC). For each pollutant, emissions are to be calculated for a 1990 Base and comparative emissions are to be calculated for each analysis year (i.e., 1995, 2005, and 2015) for both the Baseline and Action scenarios.*

Finding: Calculations were prepared, pursuant to the methods specified at OAR 340-20-1010, of CO and Ozone precursor pollutant emissions assuming travel in each analysis year on both the baseline and action networks and on the 1990 network, and were compared against each other. A technical summary of the regional travel demand model, the EMME/2 planning software and the Mobile 5a methodologies is available from Metro upon request. The methodologies were reviewed by the consultation subcommittee and are recommended to TPAC for adoption.

During the subcommittee's review, several questions were raised concerning the forecast of regional VMT, allocation of population and employment and assigned Pedestrian Environment Factors. Documentation was distributed to the membership and several PEF factors were amended based on revised data supplied by local jurisdictions.

4. Determine Conformity.

a. Requirement: *The State Conformity Regulations state that conformity of the TIP and RTP with the SIP will be established if Action scenario emissions in each analysis year are less than emissions from the Baseline scenario in each analysis year. There also must be a logical basis for expecting less emissions in each intervening year. Finally, it must be shown that both the TIP and RTP do not increase the frequency or severity of existing violations to satisfy requirements of the Act (essentially, both the TIP and RTP must be found to contribute to emission*

reductions). This requirement is met if all analysis year Action scenario emissions are less than emissions from the 1990 Baseline network.

Finding: Emissions under the Action scenario in all three analysis-years were less than in 1990 and were less than the same year Baseline emissions. Table 2 provides a summary of these emissions (see also Exhibits 1 through 4). Therefore, with respect to predicted emissions, the Table 2 shows that both the TIP and RTP are in conformity with the SIP.

It is logical to assume that these reductions will be consistent between analysis years because the vast bulk of anticipated reductions is attributable to fleet turnover (i.e., older "dirtier" cars are gradually replaced by newer "cleaner" vehicles). No reversal of such trends is realistic. It is therefore reasonable to assume action network emissions will trend downward in all interim years.

TABLE 2

1995 RTP/TIP Air Quality Conformity Results Summary

Total Mobile Emissions in kilograms per day

	Winter CO Metro Boundary	Summer CO Metro Boundary	Summer HC* AQMA Boundary	Summer NOx AQMA Boundary
1990	889,758	434,511	80,602	56,516
1995 Action	596,536	371,149	51,994	53,237
1995 Baseline	596,547	371,156	51,998	53,242
2005 Action	506,816	314,835	39,362	45,064
2005 Baseline	537,827	317,837	39,711	45,318
2015 Action	549,608	341,135	40,548	46,962
2015 Baseline	560,953	348,134	41,297	47,478

* - includes hot soaks, but not diurnals

08-23-95

APPENDIX A: BASE AND ACTION YEAR NETWORKS

SPONSOR	RTP NO.	PROJECT NAME	PROJECT DESCRIPTION	In Model	EXISTING LANES		PROPOSED LANES		Start Date	Funds	BASE YEAR	ACTION YEAR
					No.	Capacity	No.	Capacity				
Clack Co	0	Reg. Facilities Preservation	throughout Clack. Co	no								
Clack Co	1	Beavercreek Road	Beavercreek/Molalla Intrsect'n	yes	0/3	0/900	3/5	900/1800	1996	TIP	05	
Clack Co	2	Highway 212	SPRR to135th frontage	no	n/a		n/a			RTP		
Clack Co	3	I-205 Frontage Road	Sunnyside to 92nd east of I-205	yes	0	0	3/5	900/1800	1998	RTP		05
Clack Co	4	Monterey overpass	Over I-205 to frontage road	yes	0	0	5	1800	1998	RTP		05
Clack Co	5	Johnson Creek Boulevard	Johnson Creek/Linwood Intrsect'n	yes	2	900	3	1000	1996	TIP	05	
Clack Co	6	Sunnybrook extension	93rd (I-205) to Sunnyside@108th	yes	0	0	5	1800	1998	TIP	05	
Clack Co	7	Road Rehab Program	County-wide	no	n/a		n/a	ongoing		RTP		
Clack Co	8	Signal Rehab Program	County-wide	no	n/a		n/a	ongoing		RTP		
Clack Co	9	92nd Avenue	Idleman to Multnomah Co. line	yes	2	700	3	900	2000	TIP	05	
Clack Co	10	122nd Avenue	Sunnyside to Hubbard	yes	2	700	3	900	2000	RTP		05
Clack Co	11	Stafford Road	Stafford/Borland Road Intrsect'n	yes	2	1000	4	1200	2000	RTP		05
Clack Co	12	Johnson Creek Blvd	45th to 82nd Avenue	yes	2	900	3	1000	2000	RTP		05
Clack Co	14	Sunnyside Road	122nd to 152nd	yes	3	900	5	1800	2005	TIP		05
Clack Co	14	Sunnyside Road	108th to 122nd	yes	3	900	5	1800	2000	TIP		05
Clack Co	39	122nd/129th Avenue	Sunnyside to King Road	yes	2	700	3	900	2005	RTP		05
Clack Co	50	Linwood Ave. Bike Lanes	King Road to County Line	no	n/a		n/a		2000	RTP		
Clack Co	53	CTC Connector	Clack. Reg. Park to Mather Road	no	n/a		n/a		2005	RTP		
Clack Co	55	82nd Drive Bikeway	Hwy 212/224 to Jennifer St.	no						RTP		
Clack Co	58	SE Johnson Creek Blvd	SE 36th to 45th	no	n/a		n/a	900	1996	RTP		
Clack Co	59	Kruse Way Intrsect'n Imp.	Westlake	yes		1600		1800	2005	RTP		05
Clack Co	61	Boones Ferry Sig. Interconct	I-5 to Country Club	yes				+ 50	2000	RTP		05
Clack Co	62	Hwy 43 Signal Interconnect	Terwilliger to McVey	yes				+ 50	2000	RTP		05
Clack Co	64	McVey Intrsect'n Imp	South Shore	yes		1000/180		1200/2000	2005	RTP		05
ODOT/Clack	83	Hwy 43 Intrsect'n	Terwilliger Intrsect'n - 50%	yes	2	1200	3	1300	2000	RTP		05
ODOT/Clack	84	Hwy 43 Intrsect'n	A' Avenue Intrsect'n - 50%	no	n/a		n/a		2000	RTP		
ODOT/Clack	85	Hwy 43 Intrsect'n	McVey/Green St Intrsect'n - 50%	yes	NB/SB	1200/180	NB/SB	1300/1850	2000	RTP		05
ODOT/Clack	86	Hwy 43 Realignment	West 'A' Street Realign - 50%	yes	n/a		n/a		2000	RTP		05
ODOT/Clack	87	Hwy 43	Willamette Falls Drive - 50%	no					2000	RTP		
ODOT/Clack	88	Hwy 43	Failing Street - 50%	yes				+ 50	2000	RTP		05
ODOT/Clack	89	Hwy 43	Pimlico Street - 50%	no	n/a		n/a		2000	RTP		
ODOT/Clack	90	Hwy 43 Signal Imp.	Jolie Point Traffic Signal - 50%	yes		1200		1250	1995	TIP	95	
Clack Co	*	Boones Ferry Road	Jean to Madrona	yes		1400/180		1800			95	
Clack Co	*	Evelyn Overpass	82nd to Evelyn/Jennifer St	yes		0		900			95	
Clack Co	*	King Rd/Linwood Ave	add turn lanes, reduce from 4 to 3	yes		1400		1200			95	
Clack Co	*	Sunnyside Rd./132nd Ave	signalize, add turn lanes	yes		900		1100			95	
Clack Co	*	Sunnyside Rd	Stevens to I-205 NB ramp	yes		2400		2400			95	
Clack Co	*	82nd Drive	Gladstone Intrchg - Evelyn/Jennifer	yes	2	900	3	1200	1995	TIP	95	

* TIP funded projects not in RTP; ** Part of larger Program; *** Not in RTP - insignificant to regional system

APPENDIX A: BASE AND ACTION YEAR NETWORKS

SPONSOR	RTP NO.	PROJECT NAME	PROJECT DESCRIPTION	In Model	EXISTING LANES		PROPOSED LANES		Start Date	Funds	BASE YEAR	ACTION YEAR
					No.	Capacity	No.	Capacity				
Clack Co	*	82nd Drive	Evelyn/Jennifer to Hwy 212	yes	2	900	3	1200	2000	TIP		05
Clack Co	*	I-205/Sunnybrook	Split diamond Intrchng	yes	-	-	-	-	1998	TIP	05	
Clack Co	*	Webster/Thelseen	add turn lane to Webster Street	yes	2	900	3	1100	1995	RTP	95	

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					No.	Capacity	No.	Capacity				
Mult Co	0	Reg. Facilities Preservation	Throghout Mult. Co	no								
Mult Co	1	NE Halsey St	207th Ave to 223rd Ave	yes	2	900	3/5	1100/1800	1995	RTP	95	
Mult Co	2	Stark St	257th Ave. to Troutdale Rd	yes	2	900	5	1800	1995	RTP	95	
Mult Co	3	207th Ave Connector	Halsey St to Glisan St/223rd Ave	yes	0	0	5	1800	1996	TIP	05	
Mult Co	4	NE Halsey St	190th Ave to 207th Ave	yes	2	900	5	1800	1996	RTP	05	
Mult Co	6	223rd Ave	Glisan St to Halsey St	yes	3	900	5	1800	1996	RTP	05	
Mult Co	7	Road Rehab Program	County-wide	no	n/a		n/a			RTP		
Mult Co	8	Signal Rehab Program	County-wide	no	n/a		n/a			RTP		
Mult Co	11	Jenne Rd	2050' N of Foster/800' S of Powell	yes	2	700	2	750	1997	RTP		05
Mult Co	13	Cherry Park Rd	242nd Dr. to 257th Ave	yes	3	1000	5	1800			05	
Mult Co	32	Division Street	198th Avenue to Wallula Avenue	no	n/a		n/a			RTP		
Gresham	38	Civic N'hd Central Collector	Burnside to Division	yes	0	0	2	500		RTP		05
Gresham	39	Civic N'hd Station Plaza	By Gresh City Hall LRT Station	no	n/a		n/a			RTP		
Mult Co	47	181st/I-84 Intrchng Imprvmnts	Improve ramps	yes	0	0	1	1200				05
Mult Co	48	181st Widening	I-84 EB ramp to Halsey Street	yes	2	1800	3	2400				05
Mult Co	52	181st Intrsect'n Imprvmnt	San Rafael Street	no								
Mult Co	53	181st Intrsect'n Imprvmnt	Halsey Street: add turn lanes	yes			add 100 capacity					05
Mult Co	54	181st Intrsect'n Imprvmnt	Glisan Street: add turn lanes	yes			add 200 capacity					05
Mult Co	55	181st Intrsect'n Imprvmnt	Burnside Street: trn lns/sig upgrade	yes			add 150 capacity					05
Mult Co	56	181st Intrsect'n Imprvmnt	Stark Street: add turn lanes	yes			add 100 capacity					05
Mult Co	57	182nd Intrsect'n Imprvmnt	Division Street: add turn lanes	yes			add 100 capacity					05
Mult Co	58	185th Intrsect'n Imprvmnt	Sandy Boulevard:realign/RR OXing	yes			add 100 capacity					05
Mult Co	59	202nd/Birdsdale Intrsect'n Imp	Powell Boulevard: add left turn lanes	yes			add 100 capacity					05
Mult Co	60	223rd/Fairview Intrsect'n Imp	Glisan Street: add turn lanes	yes			add 300 capacity				05	
Mult Co	61	Regner Road Intrsect'n Imp	Roberts Avenue: add turn lanes	yes			add 100 capacity					05
Mult Co	62	Burnside Street Intrsect'n Imp	Division Street: add right turn lanes	yes			add 100 capacity					05
Mult Co	63	242nd/Hogan Intrsect'n Imp	Stark Street: add turn lanes	yes			add 100 capacity					05
Mult Co	64	242nd/Hogan Intrsect'n Imp	Palmquist Road: signal interconnect	yes			add 50 capacity					05
Mult Co	65	257th Ave/Kane Intrsect'n Imp	Stark Street: add turn lanes	yes			add 100 capacity					05
Mult Co	66	257th Ave/Kane Intrsect'n Imp	Powell Valley Rd: signal intercon'ct	yes			add 50 capacity					05
Mult Co	67	262nd Ave/Barnes Intrsect'n Imp	Orient Drive	yes								05
Mult Co	68	Halsey St Intrsect'n Imprvmnt	238th Ave: trn lns on all approaches	yes		900/1400		1200/1600	1997			05
Mult Co	**	Traffic signal optimization	181st: I-84 to Glisan	yes			add 50 capacity					05
Mult Co	**	Traffic signal optimization	Burnside: Eastman Pkwy/Powell	yes			add 50 capacity					05
Mult Co	**	Traffic signal optimization	Division: 60th to 174th	yes			add 50 capacity			RTP		05
Mult Co	**	Traffic signal optimization	Sandy: Burnside to 82nd	yes			add 50 capacity			RTP		05
Mult Co	**	Traffic signal optimization	Powell: 11th to 98th	yes			add 50 capacity			RTP		05
Mult Co	**	Traffic signal optimization	Division: 182nd to 257th	yes			add 50 capacity			RTP		05

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APPENDIX A: BASE AND ACTION YEAR NETWORKS

SPONSOR	RTP NO.	PROJECT NAME	PROJECT DESCRIPTION	In Model	EXISTING LANES		PROPOSED LANES		Start Date	Funds	BASE YEAR	ACTION YEAR
					No.	Capacity	No.	Capacity				
ODOT/Mult	2	US 26	Palmquist/Orient Intrsect'n realign	yes			no cap change		1997	RTP		
Mult Co	***	Orient Drive & 282nd	turn lanes on approaches	yes	2	700	3	900	1995	TIP	95	
Mult Co	***	257th/1st (Bull Run) Intrsect'n	lft turn lanes on 3 approaches	yes	2	700	3	900	1996	CIP	05	
Mult Co	***	Cherry Park Road	242nd to 257th	yes	2	900	3	1000	1995	CIP	95	
Mult Co	***	Columbia Hwy	Halsey to east of Kibling	yes	2	700	3	900	1995	CIP	95	
Gresham	***	1st (Bull Run)	Burnside to 257th	yes	2	700	3	900	1996	CIP	05	
Mult Co	***	Halsey/223rd Intrsect'n	left turn lanes on approaches	yes	2	900	3	1000	1995	CIP	95	
Mult Co	***	Orient/Kane (257th) Intrsect'n	add SB left turn lane on Kane	yes	2	700	3	800	1997	CIP		05
Mult Co	1	Sellwood Bridge	Sellwood to Highway 43	no						RTP		
Mult Co	2	Mult Co Bridges - Seismic	Central City	no						RTP		
Mult Co	3	Mult Co Bridges - Preservation	Central City	no						RTP		
Mult Co	5	Hawthorne Bridge Sidewalks & Phase		no						RTP		
Mult Co	4	Willamette River Bridges Accessibility										
Mult Co		St. John's Bridge	Syracuse/Philadelphia Intrsect'n	no						RTP		
Mult Co		St. John's Bridge	St Helens/Bridge Ave Intrsect'n	no						RTP		
Mult Co		Broadway Bridge	Brdway/Flint/Wheeler Intrsect'n	no						RTP		
Mult Co		Broadway Bridge	Lift Span Sidewalks	no						RTP		
Mult Co		Broadway Bridge	Ped Xing at Lovejoy/Broadway	no						RTP		
Mult Co		Broadway Bridge	Broadway Viaduct Bikelanes	yes	2	1400	1	700	1995	RTP		95
Mult Co		Broadway Bridge	Broadway/Hoyt Intrsect'n	no						RTP		
Mult Co		Broadway Bridge	10th Avenue Viaduct Bikelanes	yes	2	1400	1	700	1995	RTP		95
Mult Co		Broadway Bridge	Ped Xing at Lovejoy/10th Ave	no						RTP		
Mult Co		Broadway Bridge	Lovejoy Viaduct Bikelanes	yes	2	1400	1	700	1995	RTP		95
Mult Co		Burnside Bridge	Bikelanes from MLK to 6th Ave	yes	2/3	2100/270	1/2	1400/1800	1995	RTP		95
Mult Co		Burnside Bridge	Burnside/MLK Intrsect'n	no						RTP		
Mult Co		Burnside Bridge	WB Bikelane West of MLK	no						RTP		
Mult Co		Burnside Bridge	EB Bikelane East of 2nd Avenue	no						RTP		
Mult Co		Burnside Bridge	Burnside/2nd Avenue Intrsect'n	no						RTP		
Mult Co		Morrison Bridge	Water Avenue/Yamhill Intrsect'n	no						RTP		
Mult Co		Morrison Bridge	Front Avenue Ramp Sidewalk	no						RTP		
Mult Co		Morrison Bridge	2nd Avenue Crosswalks	no						RTP		
Mult Co		Hawthorne Bridge	Hawthorne Viaduct	yes	3	2100	2	1400	1995	RTP		95
Mult Co		Hawthorne Bridge	Clay Ramp Sidewalk	no						RTP		
Mult Co		Hawthorne Bridge	Westside Improvements	yes	1		0		1998	RTP		05
Mult Co		Hawthorne Bridge	Madison Viaduct Sidewalk	no						RTP		
Mult Co		Ross Island Bridge	Kelly Ramp Modification	no						RTP		
Mult Co		Ross Island Bridge	Ped. Xing at Front Ave Ramp	no						RTP		
Mult Co		Sellwood Bridge	Greenway Trail Crossing	no						RTP		

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					No.	Capacity	No.	Capacity				
ODOT	0	Preserve Existing Reg. Facilities	Reg. Facilities Thruout Region	no								
ODOT/Mult	2	US 26 (realign/remove near Orient)	Palmquist/Orient Intrsect'n	yes			1997 as per Mult. Co		2005	RTP		
ODOT	4	I-5 Ramp Metering	Metro area	yes					2005	RTP		05
ODOT	7	I-5 Intrchng Recon.	Wilsonville Intrchng (Unit 2)	yes		900		1800/2200	2005	TIP		05
ODOT	8	I-5 Exit Imprvmnt	Northbound I-205 exit	yes	1 (1W)	2000	2 (1W)	3700	2005	RTP		05
ODOT	9	I-5 Ramp Reconstruction	At Hwy 217 (Unit 2)	yes	varies		varies	+ 1000	2005	TIP		05
ODOT	16	I-5 Widening & Recon.	Greeley to N. Banfield	yes		varies		varies	2005			05
ODOT	21	I-84 Ramp Metering	East Portland	yes					2005	RTP		05
ODOT	28	I-84 Widening	Troutdale Intchg-Jordan Intchg	yes	2 (1W)		2 + aux	+ 1000	2005	RTP		05
ODOT	29	I-205 Ramp Metering	East Portland	yes					2005	RTP		05
ODOT	37	I-205 / Hwy 224	Clackamas (Sunrise) Intrchng	yes	-	-	-	-	2005	RTP	05	
ODOT	38	I-205 Auxillary Lanes	Powell to Foster	yes	3	6600	3 + aux	7600		RTP		15
ODOT	40	Interstate 205	I-205 Trail (several crossings)	no					2005	RTP		
ODOT	41	I-405 Ramp Metering	Central City						2005			05
ODOT	43	Sunset Ramp Metering	Jefferson to Cornelius Pass Rd	yes					2005	RTP		05
ODOT	47	Sunset Interconnect	Cornell to Bethany	yes				+ 50	2005	RTP		05
ODOT	48	Sunset Widening/Ramps	Murray Road to Hwy 217	yes	2	4500/440	3 (1W)	6000/7000	2005	TIP	05	
ODOT	49	Sunset Widening/Recon.	Highway 217 to Camelot	yes	2 (EB)	4100	3(EB)	6600	2005	TIP	05	
ODOT	50	Sunset Reconstruction	Camelot to Sylvan (Phase 3)	yes	EB/WB	6600/600	EB/WB	6600+cd/4		TIP	05	
ODOT	58	US 30 Bypass Realign	NE 60th Avenue realignment	yes	0	0	4	1400	2005	RTP		05
ODOT	59	US 30 Bypass Widening	Killingsworth at Columbia	yes				+ 200	2005	RTP		05
ODOT	65	Canyon Road Bicycle Imp.	110th to Canyon Dr.	no					2015	RTP		
ODOT	69	TV Hwy Interconnect	209th to Brookwood	yes		2100		2150	2005	RTP		05
ODOT/Wash	71	TV Highway	209th/219th	yes	0	0	3	900	2015	RTP		15
ODOT	72	BH Hwy Bike/Ped Imp.	65th to Hwy 217	no					2005	RTP		
ODOT/Wash	77	BH Highway	Scholls Ferry/Oleson	yes		500		550	2015	RTP		15
ODOT/Wash	78	Farmington Road Widening	209th Ave to 172nd Ave	yes	2	900	3	1200	2015	RTP	15	
ODOT/Clack	82	Hwy 43 Interconnect	Cedar Oak to Hidden Spring	yes				+ 50		RTP		05
ODOT/Clack	83	Hwy 43 Intrsect'n	Terwilliger Intrsect'n	yes	2	1200	3	1300		RTP		05
ODOT/Clack	84	Hwy 43 Intrsect'n	'A' Avenue Intrsect'n	no						RTP		05
ODOT/Clack	85	Hwy 43 Intrsect'n	McVey/Green Street Intrsect'n	yes	NB/SB	1200/180	NB/SB	1300/1850		RTP		05
ODOT/Clack	86	Hwy 43 Realignment	West 'A' Street Realignment	yes	-	-	-	-		RTP		05
ODOT/Clack	87	Hwy 43	Willamette Falls Drive	no						RTP		05
ODOT/Clack	88	Hwy 43	Failing Street	yes				+ 50		RTP		05
ODOT/Clack	89	Hwy 43	Pimlico Street	no						RTP		05
ODOT/Clack	90	Hwy 43 Signal Imp.	Jolie Point Traffic Signal	yes		1200		1250	1995	TIP	95	
ODOT	94	McLoughlin Pedestrian Imp.	Harrison St. to Oregon City	no					2005	RTP		
ODOT	98	Barbur Bike/Ped Improv.	Front to Hamilton St.	no					2005	RTP		

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					No.	Capacity	No.	Capacity				
ODOT	102	Barbur Bike/Ped Improv.	Terwilliger to Multnomah St.	no					2005	RTP		
ODOT	113	Hwy 217 Widening, Ramps	Sunset to TV Hwy. NB (Canyon)	yes	3 (1W)	5500	3 + aux	7200	2005	TIP	05	
ODOT	114	Hwy 217 Widening, Aux.	TV Hwy to 72nd Ave Intrchng	yes	2 (1W)	4500	3 + aux	6000/7000	2015	RTP		15
ODOT	115	Hwy 217 Ramp Meter	Allen	yes					2005	RTP	05	
ODOT	116	Hwy 217 Ramp Improv.	Hwy 217 NB off-ramp at Scholls	yes	2 (1W)	1400	3	1600	2005	RTP		~~NA~~
ODOT	117	Hwy 217 Ramp Meter	Greenburg	yes					2005	RTP		~~NA~~
ODOT	121	Hall Bike/Ped Improv.	Oak St to Pacific Hwy West	no					2005	RTP		
ODOT	127	Hardware & Software	Traffic Mngt Ops Center	no					2005	RTP		
ODOT	128	Enhance	Traffic Mngt Ops Center	no					2005	RTP		
ODOT	129	TSO&TDM,170s, Surf.St.	Metro region	no					2005	RTP		
ODOT	131	CCTV	Metro region	no					2005	RTP		
ODOT	140	99W Signal Interconnect	I-5 to Durham Road	yes				+ 50	2005	RTP		05
ODOT	*	99E	Clatsop to Hwy 224	yes		1800		3600	1995	TIP	95	
ODOT	*	207th Connector	Halsey to Sandy	yes		0		1800	1997	TIP	05	
ODOT	*	Barnes Extension	Hwy 217 to Cedar Hills	yes		0	WB	2800	1994	TIP	95	
ODOT	*	Boones Ferry Connector	Boones Ferry to SW Ridder Rd	yes		0		900	1996	TIP	05	
ODOT	*	Canyon Road	110th to 117th	yes		1800		2400	1997	TIP	05	
ODOT	*	US 26	Cedar Hills/Sunset Intrchng	yes		-		-	1994	TIP	95	
ODOT		Farmington Road	172nd to Murray	yes		900		1800	2000	RTP	05	
ODOT	*	I-5	Multnomah to Terwilliger	yes		-		-	1995	TIP	95	
ODOT	*	I-5/Stafford Intrchng		yes		-		-	2000	TIP	05	
ODOT	*	I-84	181st to 223rd	yes		3700		6000	1996	TIP	05	
ODOT	*	Sunset Hwy	Zoo Intrchng/Vista Rdg Tunnel	no		-		-	1995	TIP		
ODOT	*	Sunset Hwy	Zoo to Scholls	yes		6000	WB	7000	1997	TIP	05	
ODOT	*	Sunset Hwy - braided ramps	Cedar Hills Intrchng to 76th	yes		-		-	1996	TIP	05	
ODOT	*	Tacoma St	17th to 32nd	yes		700		900	1995	TIP	95	
ODOT	*	TV Hwy	Shute Park to 21st (Hillsboro)	yes		2100		2200	1996	TIP	05	
ODOT	*	Forest Grove N. Arterial	Hwy 47 to Quince	yes		0		1200	2000	TIP		05
ODOT		Old Scholls	New Scholls to 175th	yes		700		1200	1996		05	

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APPENDIX A: BASE AND ACTION YEAR NETWORKS

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					No.	Capacity	No.	Capacity				
Port	0	Preserve Exist. Reg Facilities	Reg. Facilities	no								
Port	1	North Marine Dr	North Rivergate Section	yes	3	1200	5	2400	2000			05
Port	3	North Marine Drive	T-6 Entrance	no	n/a		n/a		1998			
Port	4	Going Street	Going Street Rail Crossing	yes	4	1800	5	2100	2005			05
Port	5	Airport Way eastbound	PDX to I-205 Phase I	yes	2	2400	3	3000	1999			05
Port	6	Alderwood Street	Alderwood Street to Clark Road	yes	0	0	3	900	1999			05
Port	10	Hayden Is Bridge	Rivergate to Hayden Island	yes	0	0	4	1600	2004	prelim e		05
Port	27	Airport Way Westbound	PDX to I-205 Phase 2	yes	2	2400	3	3000	1999			05
Port	28	Industrial area TMAs	Swan Island	no	n/a		n/a		1996			
Port/Portland	29	Burgard/Columbia	Intrsect'n	no					1997			
Port/Portland	30	Columbia Blvd	Alderwood Dr Intrsect'n	no					1998			
Port/Portland	31	Columbia/Lombard	South Rivergate Rail O'Xing	yes		900		1000	1998			05
Port	45	PDX Enplaning Roadway	PDX Terminal	no								
Port/Portland	46	Columbia Blvd Signal Imprvmnts	South Rivergate to I-5 Intertie	yes				+ 50	1998			05
Portland	0	Reg. Facilities Preservation	Throughout City	no								
Portland	7	St Johns Business District	Burlington to	no	varies		varies		2010	RTP		
Portland	15	NE 148th	Marine Dr to Sandy	yes	2	700	3	900	1997	RTP	05	
Portland	19	SE Foster Bv	136th to City Limits	yes	2	900	3	1100	2010	RTP		15
Portland	20	SE Lents Business District	"90th to 96th, Foster/Woodstock	no	varies		varies		2000	RTP		
Portland	21	57th/Cully Bv	NE Sandy to Lombard	no	2		2		2000	RTP		
Portland	22	NE Sandy Bv	NE 39th to 82nd Ave	no	4		4		2015	RTP		
Portland	23	NE Sandy Bv	NE 12th to 39th Ave	no	4		4		2005	RTP		
Portland	24	Broadway/Weidler Corridor	I-5 to NE 28th	yes	varies		varies		2000	RTP		05
Portland	25	Lower Albina RR Xing	Interstate to Russell	under re	0		2		2000	RTP		05
Portland	26	River Dist/ Lovejoy Ramp	Broadway Br to NW 14th	yes	4	1400	5	1600	2005	RTP		05
Portland	28	SW Front Avenue	Steel Br to I-405	no	5		5		2000	RTP		
Portland	29	S. Portland Imprvmnts	SW Front I-405 to Barbur	no	varies		varies		2010	RTP		
Portland	32	Water Avenue Extension	SE Divison Place to OMSI	yes	0	0	2	700	1998	RTP		05
Portland	33	SE 11th/12th SP Rail Xing	SE Division to Milwaukie	no	4		4		2015	RTP		
Portland	34	Hillsdale Town Ctr Ped Dist	SW Capital Hwy Bertha/Sunset	no	5		5		2000	RTP		
Portland	35	SW Garden Home Rd	SW Multnomah to Capital Hwy	no	2		2		2010	RTP		
Portland	36	SW Garden Home Signal	Garden Home at Multnomah	yes	2	700	3	900	2004	RTP		05
Portland	37	Capital Hwy	SW Bertha bv to Barbur	no	2		2		2004	RTP		
Portland	42	17th-Milwaukie Connector	S. McLoughlin/17th-Milwaukie	yes	0	0	2	700	2010	RTP		15
Portland	43	Woodstock Business Dist	SE 39th to SE 50th	no	varies		varies		2010	RTP		
Portland	44	SE Tacoma	SE 28th to 32nd	no	2		2		2005	RTP		
Portland	46	Road Rehabilitation Program	City wide	no	varies		varies		ongoing	RTP		
Portland	47	Signal Rehabilitation Prog	City wide	no	n/a		n/a		ongoing	RTP		

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					No.	Capacity	No.	Capacity				
Portland	49	Burnside Bike Lanes	33rd St. to 74th Ave.	no	4		4		2000	RTP		
Portland	50	41st-42nd Bicycle Blvd.	Columbia Blvd./Springwater Trail	no	2		2		2000	RTP		
Portland	52	Greeley/Interstate Bikeway	Killingsworth to Broadway Bridge	no	n/a		n/a		2005	RTP		
Portland	53	Bertha Blvd. Bike Lanes	Vermont St. to Capital Hwy.	no	n/a		n/a		2005	RTP		
Portland	54	Cornell Road Bike Lanes	NW 30th Ave to NW 53rd Ave.	no	n/a		n/a		2005	RTP		
Portland	56	Division Corridor Bikeway	SE 39th Ave. to SE 92nd Ave.	no	n/a		n/a		2000	RTP		
Portland	57	Holgate Corridor Bikeway	SE 39th Ave. to SE 92nd Ave.	no	n/a		n/a		2000	RTP		
Portland	58	112th Corridor Bikeway	Springwater Trail to Sandy Blvd	no	n/a		n/a		2000	RTP		
Portland	59	Halsey Street Bike Lanes	Sandy Blvd. to 148th St.	no	5		5		2000	RTP		
Portland	64	Central City TMA	Central City employment dist.	no	n/a		n/a		1998	RTP		
Portland	66	Intelligent Transportation Systems	Not yet determined	no	n/a		n/a		ongoing	RTP		
Portland	67	Vancouver/Williams Bike Lanes	Broadway to MLK	no	n/a		n/a		2000	RTP		
Portland		Beaverton-Hillsdale Hwy	Barbur Blvd to Terwilliger	yes	WB	1400	WB	2100	2010			15
Portland		Lombard/Burgard	Philadelphia to Columbia Blvd	yes	3	900	3 or 5 **	900/1800	2010			15
Portland		River District Access	Northwest Triangle	yes		varies		varies	1999			05
Portland		South Waterfront Access	Harrison-Moody connect'n	yes		varies		varies	2005			05

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					No.	Capacity	No.	Capacity				
Wash Co	0	Reg. FacilitiesPreservation	Throughout Wash Co	no								
Wash Co	3	112th	Cedar Hills Intrchg to Cornell	yes	0	0	3	1200	1997	RTP	05	
Wash Co	4	143rd	West Union to Kaiser	yes	0	0	3	900	1996	RTP	05	
Wash Co	5	124th	99W to Tualatin-Sherwood	yes	0	0	3	900	2006	RTP/20		15
Wash Co	7	Old Scholls Ferry	Murray to Beef Bend	yes	2	900/1800	5	1800	2010	RTP		15
Wash Co	8	Cornell	179th to Bethany	yes	3	900	5	1800	2010	RTP		15
Wash Co	9	Cornelius Pass	Sunset Hwy. to West Union	yes	2	900/1200/	5	2400	2010	TIP		15
Wash Co	10	Murray	Millikan to Terman	yes	2	900	4	2400	1997	RTP		05
Wash Co	11	Cornell	Arrington to Baseline/Main	yes	2	1400	5	1800	2015	RTP		15
Wash Co	12	Cornell	185th to Shute	yes	5	2100	7	2900	2015	RTP		15
Wash Co	13	Barnes	Hwy. 217 to 117th	yes	2 (1w)	2800	5(2w)	1800	2010	TIP		15
Wash Co	15	Barnes	Miller to Mult. Co. Line	yes	2	900	5	1800	2015	RTP		15
Wash Co	16	216th	Baseline to Cornell	yes	2	900	5	2100	2010	RTP		15
Wash Co	17	Barnes	Saltzman @ Cornell/New 119th	yes			5	1800	2000	MSTIP		05
Wash Co	18	Brookwood	Airport to Baseline	yes	0/3	0/1200	3/5	900/1800	2005	MSTIP		05
Wash Co	19	Barnes	Miller to Leahy	yes	2	900	5	1800	2015	RTP		15
Wash Co	20	Cornell	Saltzman to Mult. Co. Line	yes	2	900	3	1200	2015	RTP		15
Wash Co	21	Jenkins	Murray to 158th	yes	3	700	5	1800	2006	RTP		15
Wash Co	22	Baseline	177th to 231st	yes	2	900	3	1200	2000	MSTIP		05
Wash Co	24	Baseline	Lisa to 216th	yes	2	900	5	1800	2015	RTP		15
Wash Co	25	Cornell	Hwy. 26 to Saltzman	yes	2	900	5	1800	2015	RTP		15
Wash Co	26	Murray	Science Park Drive to Cornell	yes	3	900	5	2100	1998	RTP	05	-
Wash Co	29	Beef Bend Ext	Scholls Ferry to 99W	yes	2	500/700/9	2	900	2005	MSTIP		05
Wash Co	30	219th	TV Highway to Baseline	yes	2	900	3	1200	2000	MSTIP		05
Wash Co	34	Bethany	Bronson to W. Union	yes	2		5	1800	2010	RTP		15
Wash Co	35	Walker	Murray to 185th	yes	2	800	5	1800	2010	RTP/20		15
Wash Co	37	Cornell	Murray to Saltzman	yes	2	900	3	1200	2000	MSTIP		05
Wash Co	38	158th	Jenkins to Baseline	yes	3	900	5	1800	2006	RTP		15
Wash Co	40	Allen	217 to Western	yes	4	1600	5	1800	2015	RTP		15
Wash Co	41	Greenway/Hall	Greenway/Hall Intrsect'n	yes	NB	900	NB	1000	2000	RTP	05	
Wash Co	46	Allen	Menlo to Main	yes	3	1400	5	1600	2006	RTP		15
Wash Co	47	Allen	Murray to Menlo	yes	3	1400	5	1600	2006	RTP		15
Wash Co	48	E/W Arterial	117th to 110th	yes	0	0	5	1800	2015	RTP		15
Wash Co	50	E/W Arterial	Hall to 117th	yes	0	0	5	1800	2015	RTP		15
Wash Co	51	Greenburg	Shady Lane to Locust	yes	3	900	5	1800	2000	RTP/20	05	
Wash Co	52	E/W Arterial	Hocken to Murray	yes	2	700	5	1800	2015	RTP		15
Wash Co	59	Hall Intrsect'n Imprvmnt	99W	no	n/a		n/a		2000	MSTIP		
Wash Co	60	E/W Arterial	Cedar Hills to Watson/Hall	yes	0	0	5	1800	2015	RTP		15

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					No.	Capacity	No.	Capacity				
Wash Co	62	Millikan Extension	Cedar Hills to Hocken	yes	0	0	3		2015	MSTIP		05
Wash Co	66	Jenkins	Cedar Hills to Murray	yes	2	700	3	900	2010	RTP		15
Wash Co	73	185th	T.V. Hwy. to Farmington	yes	2	900	3	1200	2015	RTP		15
Wash Co	75	170th Avenue	Rigert to Alexander	yes	2	700	3/5	900/1800	2000	MSTIP		05
Wash Co	78	Martin/Cornelius Schefflin	realignment	yes	2	700	2	800	2000	MSTIP		05
Wash Co	79	Evergreen	25th to Glencoe	yes	2	900	3	1200	2000	MSTIP		05
Wash Co	80	Glencoe	Lincoln to Evergreen	yes	2	900	3	1100	2010	RTP		15
Wash Co	83	170th	Alexander to Baseline	yes	2	700	3	900	2010	RTP		15
Wash Co	84	Wilsonville/Sunset Ext.	Hwy. 99w to Murdock	yes	0/2	0/900	3	1100	2015	RTP		15
Wash Co	85	Sunset Drive (Hwy 47)	University to Beal	yes	2	700	3	900	2005	MSTIP		05
Wash Co	88	Tualatin Rd.Bike Lanes	Hwy 99 to Boones Ferry Rd.	no	n/a		n/a			RTP		
Wash Co	89	Farmington Rd.. Bike Lanes	OR217 to Murray Blvd.	no	n/a		n/a			RTP		
Wash Co	90	Ground Level Retail space	Hillsboro Criminal Justice Fac.	no	n/a		n/a			2040		
Wash Co	91	Beaverton Creek TOD	"SW 153rd, Murray to Jenkins"	no	n/a		n/a			2040		
Wash Co	92	Evergreen	Shute to 25th	yes	2	900	3	1200	2015	RTP		15
Wash Co	95	Walker Road Bike/Ped Imp	173rd to 185th	no								
Wash Co	96	Oleson Road Bike/Ped Imp	Fanno Creek to Garden Home	no						MSTIP		
Wash Co	97	Oleson Road Bike/Ped Imp	Garden Home to Hall Blvd	no						MSTIP		
Wash Co	98	Tualatin	Teton to 115th	yes		700		900	2000	MSTIP		05
Wash Co	99	TV Hwy Signals	Locations in Cornelius	no						MSTIP		
Wash Co	100	Millikan Way	Purchase and Development	no						2040		
Wash Co	101	Signal Interconnections	Barnes, Cornell, Scholls Ferry	yes				+ 50	???	2040		05
Wash Co	102	Walker	Westfield to Murray	yes	2	800	3	900	2010	2040		15
Wash Co	103	BPA Easement Bike/Ped Imp	East of 158th, Division/Laidlaw	no						RTP		
Wash Co	104	Scholls Ferry Ped Imp	Hall to BH Hwy	no						RTP		
Wash Co	105	185th	West Union to Springville	yes	2	700	3	900	2010	RTP		15
ODOT/Wash	71	TV Highway	209th/219th						2015	RTP		15
ODOT/Wash	77	BH Highway	Scholls Ferry/Oleson						2015	RTP		15
ODOT/Wash	78	Farmington Road Widening	209th to 172nd						2015	RTP	15	
Wash Co	*	Barnes Road Extension	117th to Future 119th	yes		0	4	1200	1996	TIP	05	
Wash Co	23	Baseline	Brookwood to 231st	yes	2	900	3	1200	1996	MSTIP	05	
Wash Co	65	Durham	Hall to Boones Ferry	yes	2	700	3	900	1996	TIP		05
Wash Co	***	Lombard	Broadway to Farmington Rd	yes		700		900	2000	MSTIP		05
Wash Co	***	229th/231st	Evergreen to Cornell	yes		700/900		1200	1995	RTP		
Wash Co	***	Cornell Rd	158th to Bethany Blvd	yes		1200		2100	1995	RTP	95	
Wash Co	***	Davis Rd	Murray to 170th	yes		700		900	2000	MSTIP		05
Wash Co	***	Hart Rd	Murray to 165th	yes		700		900	2000	MSTIP		05
Wash Co	2	Lombard	Canyon to Center Street	yes	0	0	3	900	2000	CIP		05

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					No.	Capacity	No.	Capacity				
Wash Co	***	Nora	155th to Weir	yes		500		700	2010	RTP		15
Wash Co	***	Taylors Ferry	Oleson to Washington Drive	yes		0		900	2010	RTP		05
Wash Co	***	170th/173rd	Baseline to Walker Rd	yes		500/700		900	2000	MSTIP		05
Wash Co	***	Amberglen Pkwy	Quatama/206th to Stucki	yes		0		900	2000	MSTIP		05
Wash Co	***	Beef Bend Road	131st to 150th	yes		500		900	2015	MSTIP		15
Wash Co	***	Beef Bend Road	King Arthur to 131st	yes		500		900	2000	MSTIP		05
Wash Co	31	Bethany	West Union to Kaiser	yes	0	0	3	900	1996	MSTIP	05	
Wash Co	14	East Main	10th to Brookwood	yes	2	700	3	1200	1997	MSTIP	05	
Wash Co	42	Evergreen Pky Ext.	Cornelius Pass to Shute Road	yes	0	0	5	1800	1996	MSTIP	05	
Wash Co	1	Laidlaw Rd Extension	west from Kaiser Rd to 168th	yes		0		900	2000	MSTIP		05
Wash Co	***	Sexton Mountain Drive	155th to Murray	yes		0		900	1995		95	
Wash Co	***	Springville Rd	185th to PCC access	yes		500		700	1995	MSTIP	95	
Wash Co	***	Tualatin Rd	Boones Ferry to 115th	yes		500/700		900	2000	MSTIP		05
Wash Co	***	Millikan Extension	Cedar Hills to Hocken	yes		0		900	2005	MSTIP		05
Wash Co	***	Nyberg Road Extension	65th to 50th	yes		0		700	1997	CIP	05	
Wash Co	***	Ibach	Boones Ferry/Graham Ferry Rds	yes	2	700	3	900	1999			05
Wash Co	***	Boones Ferry Rd	at Alsea/Blake	yes	2	900	3	1100	1997			05
Wash Co	***	Davies Extension	Scholls to Old Scholls	yes	0	0	3	700	2015	CIP		15
Wash Co	***	Lombard	Broadway to Canyon	yes	0	0	3	700	1997	CIP	95	
Wash Co	***	Oregon Street	Tualatin Sherwood to Murdock	yes	2	900	3	1000	2005	CIP		05
Wash Co	***	Walnut	121st to 135th	yes	2	500	3	700	2005	CIP		05
Wash Co	**	Cornelius Pass Rd. Bike Lanes	West Union Rd. to Sunset Hwy.	no	n/a		n/a					
Wash Co	**	185th Ave. Bike Lanes	TV Hwy. to Farmington Rd.	no	n/a		n/a					
Wash Co	**	Oleson Rd.Bike Lanes	Vermont St. to Hall St.	no	n/a		n/a					
Wash Co	**	Garden Home Rd.Bike Lanes	Scholls Ferry Rd. to MCL	no	n/a		n/a					
Wash Co	**	Barnes Rd.Bike Lanes	Miller Rd. to U.S. 26	no	n/a		n/a					
Wash Co	**	158th Ave. Bike Lanes	U.S. 26 to West Union Rd.	no	n/a		n/a					
Wash Co	**	Cornell Rd.Bike Lanes	158th Ave. to 185th Ave.	no	n/a		n/a					
Wash Co	**	Scholls Fy. Interconnect	Nimbus to Highway 217	yes				+ 50				05
Wash Co	**	Barnes Rd Interconnect	Suntek to Miller	yes				+ 50				05
Wash Co	**	Murray Blvd Signal Interconnect	Hwy 26 to Cornell	yes				+ 50				05
Wash Co	**	Murray Blvd Signal Interconnect	Farmington to Millikan	yes				+ 50				05
Wash Co	**	Traffic signal optimization	TV Hwy: BV W Limit/Baseline	yes			add 50 capacity			RTP		

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					No.	Capacity	No.	Capacity				
Tri-Met	0	Added Bus/LRT Srvce (1.5% to 2005	Throughout Tri-Met service area	tr yes	n/a		n/a			RTP		≈
Tri-Met	1a	Added Bus/LRT Srvce (.5% 05 to 15)	Throughout Tri-Met service area	tr yes	n/a		n/a			RTP		
Tri-Met	1b	South/North LRT capital costs	Clack Co. to Clark Co., WA	no	n/a		n/a			RTP		
Tri-Met	31	Civic N'hd MAX Station	New LRT Station @ Civic N'hd	yes	n/a		n/a			RTP		05
Tri-Met	***	Baseline	170th to 177th	yes	2	900	3	1200	1996		05	≈
Tri-Met	*	Westside LRT		tr yes							05	
Metro	5	TOD Fund Program	Purchase TOD devel. sites	no	n/a		n/a			RTP		
Various	6	Major Ped Upgrade (39 mi)	Central City/Regional Centers	no	n/a		n/a			RTP		
Various	7	Major Ped Upgrade (13 mi)	Town Centers	no	n/a		n/a			RTP		
Various	8	Major Ped Upgrade (53 mi)	Corridors & Stat'n Communities	no	n/a		n/a			RTP		
Shared	9	Major Ped Upgrade (9 mi)	Main Streets	no	n/a		n/a			RTP		
Shared	10	TDM Education/Promotion	Metro region	no	n/a		n/a			RTP		
Shared	11	Regional Center TMAs	Gresham/Hills/Milw/O.C.	no	n/a		n/a			RTP		
ODOE	1	RegionalTelecommute Proj	Employers in region	no	n/a		n/a			RTP		

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APPENDIX B
OF EXHIBIT A

OFF-MODEL METHODOLOGY FOR COMPUTATION OF 1995 ANALYSIS YEAR BICYCLE PROJECT EMISSIONS EFFECTS

INTRODUCTION SUMMARY

Four projects were identified for implementation as part of the Willamette River Bridge Crossing Program approved in the 1994 TIP. The *project* declarations to Metro occurred late in local FY 95 – i.e., after the July 1 "cut date" for project completion "by 1995" but within the 1995 calendar year. Therefore, the projects qualify for inclusion in only the 1995 Action scenario. Emission reductions attributable to implementation of these projects generate a positive difference between the 1995 Baseline and Action scenarios (i.e., the Action scenario emissions will be less than that of the Baseline scenario as required by the State Conformity Rule). The projects yield a net reduction of 3.59 kg/day of Hydrocarbon emissions; 17.85 kg/day of Carbon Monoxide emissions; and 4.83 kg/day of Oxides of Nitrogen emissions. The projects include:

1. *Lovejoy Viaduct.* Reduce from three travel lanes to two lanes and provide bike lane from Broadway to 14th.

2. *10th Avenue Viaduct.* Remove two travel lanes and provide bike lanes.

3. *E. Burnside.* Remove westbound travel lane from 6th to MLK and provide bike lane.

4. *Hawthorne Viaduct.* Remove eastbound lane and provide bike lane and buffer.

Each of the four projects entail conversion of existing vehicle travel lanes to bicycle lanes. The calculation of emission effects of the projects therefore entailed a two step process. First, it was necessary to determine whether elimination of the vehicle lanes resulted in an increase of automotive emissions due to changes in travel time and speed on the affected links. The second step was to calculate emissions reductions attributable to project conversion of auto trips to bike trips.

CALCULATE PROJECT EFFECTS ON AUTOMOTIVE EMISSIONS

The Bridge project selection process was supported by traffic engineering analysis of potential delay and volume/capacity impacts (CH2M Hill/Kittleson Associates, Inc., August 1994). This project-scale analysis of local transportation system impacts was reviewed by Metro's modelling staff. It was determined that the analytic results were superior to what could be generated using Metro's regional demand and distribution model. In each case, the modeled effects of the lane conversions was insignificant, as

shown below.

1. *Lovejoy Viaduct.* Level of Service (LOS) at intersection of Lovejoy and 14th remains B (delay per vehicle increases from eight seconds before project to 10 seconds after implementation, despite a V/C ratio increase from 0.47 to 0.76.)

2. *10th Avenue Viaduct.* A.M. link LOS remains A (V/C ratio increases from 0.51 to 0.56; Delay remains at four seconds per vehicle). P.M. link LOS moves from A to B (V/C ratio increases from .43 before project to 0.56 after project; Delay increases from 4 seconds per vehicle to 6 seconds after implementation).

3. *E. Burnside.* Westbound LOS remains C (V/C moves from 0.84 to 0.89). The third lane is used by only six percent of westbound vehicles.

4. *Hawthorne Viaduct.* No calculated change of either V/C ratio or delay per vehicle (LOS A).

These system effects would generate only insignificant differences in average link speeds and trip durations and would cause no meaningful increase of automotive emissions of either Carbon Monoxide, Hydrocarbons, or Oxides of Nitrogen. Therefore, no post-model, upward adjustment of regional automotive emissions is warranted as a consequence of implementing these projects.

CALCULATE EMISSION BENEFIT OF BIKE/WALK MODE ENHANCEMENTS

The second step of the analysis required computation of emission reductions attributable to provision of the new bike facilities. This first required determination of the number of trips that would divert from automobiles to a bike mode due to provision of the bridge crossing improvement of downtown access and egress. Metro adopted elements of the Stuart Goldsmith methodology employed to calculate travel mode diversion in Seattle (Goldsmith, 1994). The principle assumption drawn from the methodology is that *baseline* bicycle mode share will increase 26 percent -- on average -- with provision of enhanced bicycle travel lanes.

All day counts were obtained of auto travel across the three bridges affected by the projects:

1) Broadway Bridge = 29,241 (average weekday)
2) Burnside Bridge = 39,346 (average weekday)
3) Hawthorne Bridge = 27,588 (average weekday)

Also, Metro has developed calibrated mode share information for travel to and from the downtown from modelling conducted for the 2040 planning process: approximately 3.3

percent of trips in the Inner Portland neighborhoods (inner eastside and downtown districts) are made by bike; 14.6 percent by walking; 6.2 percent by transit and 75.9 percent by auto. Factoring the vehicle counts (weekday count/75.9 percent) to reflect the auto mode share of total travel yields the number of trips crossing the bridge by all modes. This number multiplied by the bike mode percentage (3.3 percent) yields the number of daily bike mode trips. This baseline number of existing bike trips was then multiplied by 0.26 to yield the net increase of daily bike trips across each of the three bridges that could be expected by implementation of the project facility enhancements.

Next, the total of new bike trips was multiplied by the auto mode share factor of 75.9 percent (i.e., new bike trips are assumed to divert from auto travel in proportion to the auto mode share of all trips. This implies that some new bike trips will represent diversion from transit and walk modes). The resulting figure represents the total assumed diversion of auto trips to the bicycle mode.

The Regional CMAQ Program methodology was then used to calculated emissions reductions attributable to this increased bicycle mode share. This methodology has been previously approved by FHWA/FTA and EPA. The results of these calculations are shown in Table Be, below. It shows that the four projects represent a credit of 17.85 kilograms per day (kg/day) of CO; 3.59 kg/day of Hydrocarbon; and 4.83 kg/day of NOx. This indicates that the 1995 Action scenario reduces emission below the Baseline condition.

Bike Projects
Technical Analysis

DEFAULT PARAMETERS	
No. of work days per year=	250
No. of bikeable days per year=	250
Average regionwide bike trip length (miles)=	2.9
Average regionwide auto trip length (miles)=	5.1
Average auto occupancy (AO)=	1.08
Emission factor (HC) (g/mile)=	1.341
Emission factor (CO) (g/mile)=	6.66
Emission factor (NOx) (g/mile)=	1.803
Nat'l Ambient Air Quality Std: Ozone (mg/m^3)=	0.235
Nat'l Ambient Air Quality Std: CO (mg/m^3)=	10

Project Name	Broadway Bridge	Burnside Bridge	Hawthorne Bridge	TOTAL
PROJECT DATA				
Length of facility (miles)				
Number of users per day	250	337	236	823
VMT CALCULATIONS				
New bike trips per day =users per day x 2	500	674	472	1,646
Bike trips per year =bike trips per day x no. bikeable days/yr	125,000	168,500	118,000	411,500
Equiv. auto VMT per year (miles) =bike trips x auto to bike trip length ratio / AO	203,544	274,377	192,146	670,067
EMISSIONS/COST CALCULATIONS				
HC reduced (kg/day)	1.09	1.47	1.03	3.59
CO reduced (kg/day)	5.42	7.31	5.12	17.85
NOx reduced (kg/day)	1.47	1.98	1.39	4.83
Weighted annual cost factor ($/kg of pollutant reduced)				

Transportation Planning Committee Report

Resolution No. 95-2196, For the Purpose of Adopting the Portland Area Air Quality Conformity Determination for the FY 96 Transportation Improvement Program and 1995 Interim Federal Regional Transportation Plan

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Date: September 21, 1995 Presented by: Councilor Monroe

COMMITTEE RECOMMENDATION: At its September 19, 1995 meeting, the Committee voted 2/0 to recommend Council adoption of Resolution No. 95-2196. Councilors Kvistad and Monroe voted aye. Councilor Washington was absent.

COMMITTEE DISCUSSION/ISSUES: The resolution approves the regional air quality conformity determination for the 1995 Interim Federal Regional Transportation Plan (RTP) and amendments to the Transportation Improvement Plan (TIP). The determination confirms that transportation projects within the region will not reduce attainment and/or maintenance of the National Ambient Air Quality Standards (NAAQS). The determination will be forwarded prior to release of Federal funds to the region. The Department of Environmental Quality participated in the technical analysis to ensure the data was properly analyzed and that all projects were included in the modeling.

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 95-2196 FOR THE PURPOSE OF ADOPTING THE PORTLAND AREA AIR QUALITY CONFORMITY DETERMINATION FOR THE FY 96 TRANSPORTATION IMPROVEMENT PROGRAM AND 1995 INTERIM FEDERAL REGIONAL TRANSPORTATION PLAN

Date: August 23, 1995 Presented by: Andrew Cotugno

PROPOSED ACTION

Adoption of this resolution will approve a regional air quality conformity determination for the recently adopted 1995 Interim Federal Regional Transportation Plan (RTP) and for those amendments to the current Metro Transportation Improvement Program (MTIP) that are to be consolidated into an FY 96 MTIP update. The final Conformity Determination is included as Exhibit A of the Resolution. The Determination is required under both federal and state regulations and provides assurance that transportation projects planned within the region will not hinder attainment nor maintenance of the National Ambient Air Quality Standards (NAAQS).

BACKGROUND

The federal Clean Air Act Amendments of 1990 stipulate that no transportation project may cause or contribute to violation of the NAAQS. This includes projects that will use federal, state, local and private funds. The Oregon Department of Environmental Quality (DEQ) is lead agency for development and implementation of the Oregon State (Air Quality) Implementation Plan (SIP). The SIP is the state's collection of strategies for attainment and maintenance of the NAAQS. To assure that no project hinders meeting the air quality goals, DEQ recently adopted regulations (DEQ rule) for assuring conformity of planned transportation projects with the SIP.

Metro is the Portland area's designated Metropolitan Planning Organization (MPO). Whenever Metro approves significant amendments of either the Regional Transportation Plan (RTP) or the Metro Transportation Improvement Program (MTIP), the DEQ rule requires the MPO to prepare and approve both a qualitative and quantitative analysis of the effects of the projects on regional air quality. Together, these analyses comprise a Conformity Determination. Also, under federal regulations, the MTIP must be incorporated into the State TIP (STIP) without change. Therefore, the MTIP acts as the Portland area element of the STIP. The conformity determination is therefore applicable to the RTP, as well as to both the MTIP and STIP.

Metro has both recently adopted an updated 1995 Interim Federal RTP and has amended the FY 95 MTIP to allocate $27 million of funds to new transportation projects; has programmed significant new transit projects and programs including a Major Investment Study for the South/North LRT project; and has approved other

miscellaneous transportation projects since January of 1994. Local governments also propose to approve numerous locally funded transportation projects of potential significance to regional air quality. These programmed projects may not proceed without first being shown to conform with the SIP.

Finally, Metro and all potential affected local jurisdictions have approved a Memorandum of Understanding which expires on September 30, 1995. The MOU specifies that Metro shall demonstrate conformity for transportation projects which lie outside Metro's boundaries but within the Oregon portion of the Portland-Vancouver Interstate AQMA. These projects partly comprise the rural area program of the Region 1 element of the STIP. The conformity determination also permits these projects to advance (although this year, no such projects were declared by ODOT to Metro).

Most of this activity is identical to the previous Conformity Determinations that have been prepared by Metro. A significant difference with this Determination though is that the DEQ rule required Metro to engage in an interagency consultation process as part of its preparation. Pursuant to the Rule, Metro designated the Transportation Policy Alternatives Committee (TPAC) as the standing body responsible for interagency consultation. Thereafter, TPAC charged its TIP Subcommittee to prepare a recommendation for TPAC adoption. The TIP subcommittee met on several occasions. It consulted on items specified in the DEQ rule, including the adequacy of the methodology proposed by Metro to conduct the *quantitative* analysis of regional conformity. At its last meeting, the subcommittee was provided with a draft of the *qualitative* portion of the conformity determination. The subcommittee moved recommendation of the Determination at that time contingent on incorporation into the draft of appropriate responses to any subsequent comments. Subsequent comments were received from DEQ and these have been responded to and are incorporated in the final Determination. Internal staff review also generated some revision of the document. (The comments are summarized and individual responses are provided in Attachment 1 of this staff report.)

The draft qualitative conformity determination has been available for public review for 30 days and no comments have been received.

At the time of the subcommittee's review of the draft Determination, the quantitative analysis was not yet complete. The committee's recommendation to TPAC to approve the Determination was therefore also contingent on positive outcome of the analysis. Metro staff have since concluded the quantitative analysis and its results demonstrate conformity of the region's planned transportation projects with the SIP. This data is included as Attachment 2 of this staff report (which is also to be included as Table 2 of the Conformity Determination).

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends adoption of Resolution No. 95-2196.

ATTACHMENT 1

SUMMARY OF COMMENTS AND RESPONSES
DRAFT CONFORMITY DETERMINATION
1995 INTERIM FEDERAL RTP
FY 1996 MTIP

The DEQ rule requires that Metro provide written response to substantive comments received on draft versions of Conformity Determinations. A draft of the current Determination was submitted for review in July to members of the public and to the TIP Subcommittee designated by TPAC to formulate a recommendation for approval. During this interagency review, several agencies made verbal comments regarding minor corrections of the Network Table. The Table has been corrected in response to their observations, with one exception. Several projects listed in the Table duplicate one another. This is because several projects enumerated in the Constrained Network of the RTP represent local versus state costs for the same project (i.e., the single project is listed twice to reflect cost sharing agreements.) The Determination Network Table has replicated this duplication of project listings to aid federal reviewers identify the fiscally constrained basis of the networks that have been modelled for air quality purposes.

The Oregon Department of Environmental Quality (DEQ) provided written comments. These are summarized below.

- The term "interim" conformity regulations should be changed to "state conformity rule". *Agreed and done.*

- The draft references DEQ provision of "background [air pollution] concentrations" for Mobile 5a model inputs. The Mobile 5a model does not require these inputs and DEQ does not provide them. *Agreed and deleted.*

- The draft references local agency responsibility to analyze PM10 project impacts. The region is in attainment for PM10 and there is no local responsibility for such analysis. *Agreed and deleted.*

- DEQ requested that a comment be made in the Determination that the interagency consultation subcommittee has committed to meet periodically to address "off-cycle" projects which arise and make to make determinations regarding their regional significance. It is expected that a "screen" for significance can be developed that would likely include a quantifiable impact on capacity, volume and/or emissions. *Agreed and amended. See item vii, page 8.*

- The draft failed to mention the procedures for addressing projects located in the Washington State portion of the Portland-Vancouver AQMA and for projects

outside of Metro's boundary but within the AQMA. *Agreed and amended. See item x, page 8.*

- The draft indicates interagency agreement that "project management staff of the state and local operating agencies should be responsible for project-level public involvement activities." No agreement was reached on this question. *Agreed. See item xv, page 9.*

- The draft's quotation of the 1995 RTP Goal 3, Objective 3, Performance Criteria, indicates a need to revise the RTP language. As stated, it implies that only areas which experience high levels of carbon monoxide emissions from transportation-related sources should seek to avoid violation of the federal CO standard. No areas should exceed that standard as a result of any source of emissions. *Agreed. The Determination's "quotation" of this Criteria has been amended in anticipation of the RTP being revised in similar fashion (see page 13).*

- DEQ requested that the off-model methodology for calculation of bicycle project emissions reductions be provided at the earliest opportunity for review by the agency. No comment on the methodology had been received prior to preparation of this response document. Any comments the agency may have will be heard at TPAC and will be available as an amendment to the Resolution staff report forwarded for consideration by JPACT and Metro Council.

Metro's modelling staff also reviewed the draft Determination and made several comments. The bulk of their comments were aimed at improving the Determination's lay interpretation of the methods used by Metro to calculate transportation demand, distribution, system effects and air pollutant emissions. These refinements have been included throughout the document.

The most significant change resulting from these amendments is retraction of the statement that this year's Determination independently calculates heavy truck distribution. This methodology was employed in the prior year's analysis (which was never approved). However, DEQ and Metro staff concurred that the slight increase of precision afforded by the method was not worth the rather dramatic increase in processing and staff time needed to achieve the separate calculation. Therefore, the practice was not used in this year's quantitative analysis as stated in the draft Determination.

One request for the draft Determination was made by persons other than agency personnel. No comments were received by members of the public. A complete record of written comments received by Metro is available at Metro Headquarters.

1995 RTP/TIP Air Quality Conformity Results Summary

Total Mobile Emissions in kilograms per day

	Winter CO Metro Boundary	Summer CO Metro Boundary	Summer HC* AQMA Boundary	Summer NOx AQMA Boundary
1990	889,758	434,511	80,602	56,516
1995 Action	596,536	371,149	51,994	53,237
1995 Baseline	596,547	371,156	51,998	53,242
2005 Action	506,816	314,835	39,362	45,064
2005 Baseline	537,827	317,837	39,711	45,318
2015 Action	549,608	341,135	40,548	46,962
2015 Baseline	560,953	348,134	41,297	47,478

* - includes hot soaks, but not diurnals
08-23-95

ATTACHMENT 2