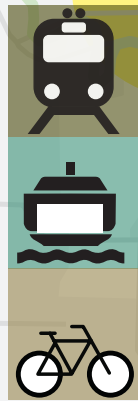


Transportation 2040



toward a sustainable transportation system

Appendix E: Regional Air Quality Conformity Analysis



MAY 20, 2010

Puget Sound Regional Council

Appendix E: Air Quality Conformity

Air Quality Conformity Analysis

Transportation 2040
The Long-Range Metropolitan Transportation Plan
of the Central Puget Sound Region

Adopted May 20, 2010

Puget Sound Regional Council


Air Quality Conformity Analysis for Transportation 2040

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Introduction

This paper documents the positive air quality findings of Transportation 2040 for conformity with the State Implementation Plan (SIP). Required under the federal Clean Air Act, a SIP provides a blueprint of how maintenance and nonattainment areas will meet the National Ambient Air Quality Standards (NAAQS). Positive findings of conformity are required by the federal Clean Air Act (CAA), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and the Clean Air Washington Act. A positive conformity finding will allow the region to proceed with implementation of transportation projects in a timely manner.

Transportation conformity is a mechanism for ensuring that transportation activities -- plans, programs and projects -- are reviewed and evaluated for their impacts on air quality prior to funding or approval. The intent of transportation conformity is to ensure that new projects, programs and plans do not impede an area from meeting and maintaining air quality standards. Specifically, regional transportation plans, improvement programs and projects may not cause or contribute to new violations, exacerbate existing violations, or interfere with the timely attainment of air quality standards or the required interim emissions reductions towards attainment. Meeting conformity requirements takes the collective participation of all jurisdictions and agencies that implement transportation projects and programs within the central Puget Sound region.

Air Quality Status

In 1978, the central Puget Sound region was classified as a nonattainment area by the U.S. Environmental Protection Agency (EPA) for carbon monoxide (CO) and ground-level ozone (O₃). In 1987, the industrial areas of the Seattle Duwamish River, Kent Valley and Tacoma Tideflats were classified as nonattainment areas for particulate matter less than 10 microns in diameter (PM₁₀). The Seattle and Tacoma industrial areas include the ports of both those cities. Areas designated as nonattainment have exceeded the National Ambient Air Quality Standards (NAAQS) for those pollutants. In 1996, having met the federal standards for several years, the region was redesignated by the EPA as a maintenance area for CO and O₃. The three PM₁₀ areas have also met the federal standards for the past several years, and were redesignated as maintenance areas effective May 14, 2001.

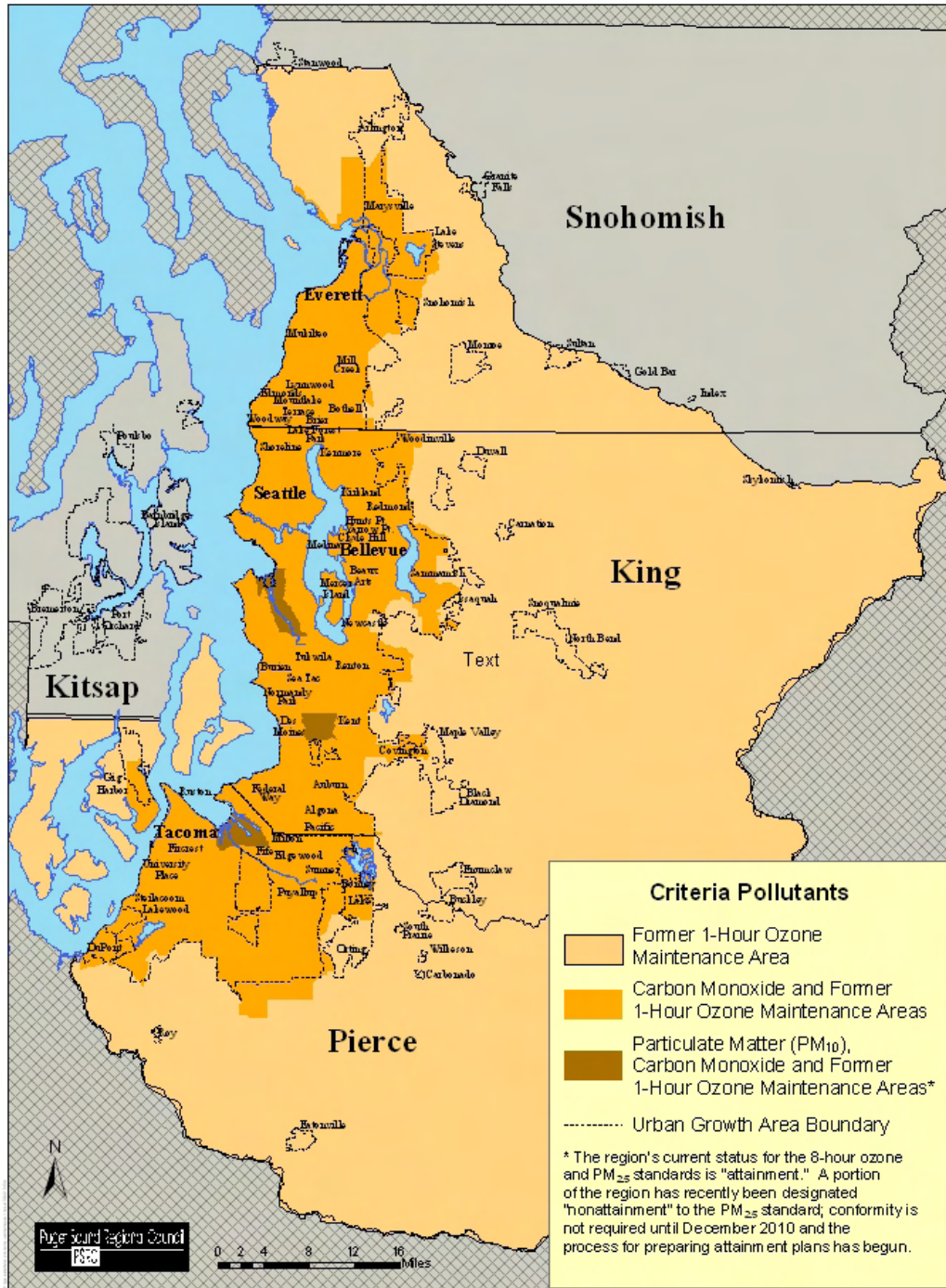
As required by the CAA, the Puget Sound region has a maintenance plan for each of the areas described above. Approval of the CO maintenance plan occurred on October 11, 1996, and approval of the O₃ maintenance plan occurred on November 25, 1996. Both of these plans were updated and approved by the EPA on September 7, 2004¹. Approval of the PM₁₀ maintenance plan occurred in December 2000, with the plan becoming effective May 14, 2001. Figure 1 shows the location of the maintenance area boundaries.

In June 2004 the EPA officially designated areas to a new ground-level ozone standard, and in April 2005 to a new particulate matter standard. The original ground-level ozone standard for which the Central Puget Sound region was in maintenance was based on a 1-hour

¹ Refer to the Final Notice published in the August 5, 2004 Federal Register, entitled "Approval and Promulgation of State Implementation Plans: State of Washington; Central Puget Sound Carbon Monoxide and Ozone Second 10-Year Maintenance Plans."

Figure 1

Central Puget Sound Region Designated Maintenance Areas



concentration; the newer standard is based on an 8-hour average concentration and replaced the 1-hour standard as of June 15, 2005. The new particulate matter standard is based on particulate matter less than 2.5 microns in diameter (PM_{2.5}); this standard is in addition to, and does not replace, the PM₁₀ standard. Subsequently, EPA further revised the PM_{2.5} standard in 2006.

The region is currently designated as Unclassifiable/Attainment for the new 8-hour ground-level ozone standard, and therefore demonstrations of conformity to this standard are not required. EPA proposed a revision to the 8-hour ozone standard in January 2010; the rule is expected to be finalized in August 2010 with new area designations one year later.

A portion of the region in South Tacoma, the Wapato Hills/Puyallup River Valley area, was designated nonattainment to the new PM_{2.5} standard in December 2008. This designation became effective with the October 2009 federal register notice published by EPA. Ecology, in coordination with PSCAA, must develop an attainment plan within three years of this designation to demonstrate how the area will come back into compliance with the standard. The primary source of PM_{2.5} emissions in this newly designated area is wood burning activities, but mobile sources represent approximately 27% of the emissions. The final source apportionments will be completed as part of the attainment plan process. Conformity to PM_{2.5}, based on the newly designated nonattainment area in Pierce County, is required to be demonstrated by December 14, 2010. PSRC is working with the region's air quality consultation partners on the procedures and parameters for conducting this analysis, which will be concluded after Transportation 2040 is adopted.

Consultation Process

Federal Clean Air Act regulations, as identified in the federal conformity rule (40 CFR Part 93), and Clean Air Washington Act regulations defined in the state conformity rule (WAC 173-420-070), require formal consultation procedures for conducting conformity analyses. The consultation procedures for the conformity analysis of Transportation 2040 are consistent with PSRC's Public Participation Plan, which is in compliance with the federal Statewide and Metropolitan Planning regulations (23 CFR Part 450) as well as the above conformity regulations. The Public Participation Plan may be obtained by contacting PSRC's Information Center ((206) 464-7532), or through PSRC's web site (www.psrc.org).

A major task identified under the consultation procedures requirements is the presentation of key staff assumptions on the process for conducting conformity analyses. Consistent with past practice, PSRC held a scoping meeting with federal, state and local agencies to present the staff interpretation of conformity tests that are required and key analytical assumptions involved in the conformity analysis of Transportation 2040. This scoping meeting met the formal consultation requirements of the federal and state clean air acts.

The scoping meeting was held on August 5, 2009. Notification of the meeting was made through a public announcement in *The Seattle Times*, PSRC Board and Committee meetings, and PSRC's web site (www.psrc.org). Those invited to the meeting included representatives from the following agencies (referred to as PSRC's air quality partner agencies): the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), EPA, the Washington State Department of Transportation (WSDOT), the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). A summary of the August 5, 2009 Scoping Meeting is contained in Appendix A.

Status of Transportation Control Measures

According to the federal conformity rule, transportation plans must provide for the timely implementation of Transportation Control Measures (TCMs) from an applicable maintenance plan (§93.113). TCMs are projects, programs or actions that will aid in the elimination or reduction of the severity or number of violations of the NAAQS, and help expeditiously attain and maintain those standards. TCMs can be strategies to increase the efficiency of existing transportation facilities, reduce travel demand, or lower the amount of emissions in vehicles leading to measurable vehicle emissions reductions. Expected emissions reductions, or credits, from these TCMs are included in maintenance plan inventories and attainment/maintenance demonstrations.

Control measures identified in the CO maintenance plan relating to on-road mobile sources include the continuation of the existing vehicle Inspection and Maintenance (I/M) program administered by Ecology, and the development and implementation of a program sponsored by PSCAA to prevent exceedances of the NAAQS for CO through congestion management activities in locations with high measured CO values. Both of these programs have been implemented and are still in place, however no emissions reduction credit from the congestion management program was included in the maintenance plan inventory. Control measures identified in the O₃ maintenance plan relating to on-road mobile sources include a public smog awareness program which is triggered by weather conditions which could result in elevated ozone levels, and which is designed to encourage voluntary changes in behavior which would reduce emissions. This program has also been implemented and is still currently in place, however no emissions reduction credits from the program were included in the maintenance plan inventory. There are no control measures in the PM₁₀ maintenance plan relating to on-road mobile sources.

Conformity Analysis Requirements

Section 93.109 of the federal conformity rule identifies the applicable criteria and procedures for determining conformity of transportation plans. The following paragraphs summarize the sections of the final conformity rule containing the criteria and procedures required for conformity tests for each maintenance area.

Plan Conformity Criteria - All Pollutants and Periods

Section 93.110: The conformity determination must be based on the latest planning assumptions.²

Section 93.111: The conformity determination must be based on the latest emissions estimation model available.

Section 93.112: The MPO must make the conformity determination according to consultation procedures identified in the conformity rule.

Section 93.113: The Plan must provide for the timely implementation of Transportation Control Measures (TCMs) from the applicable SIP.

Section 93.118: The Plan must be consistent with the motor vehicle emissions budget in

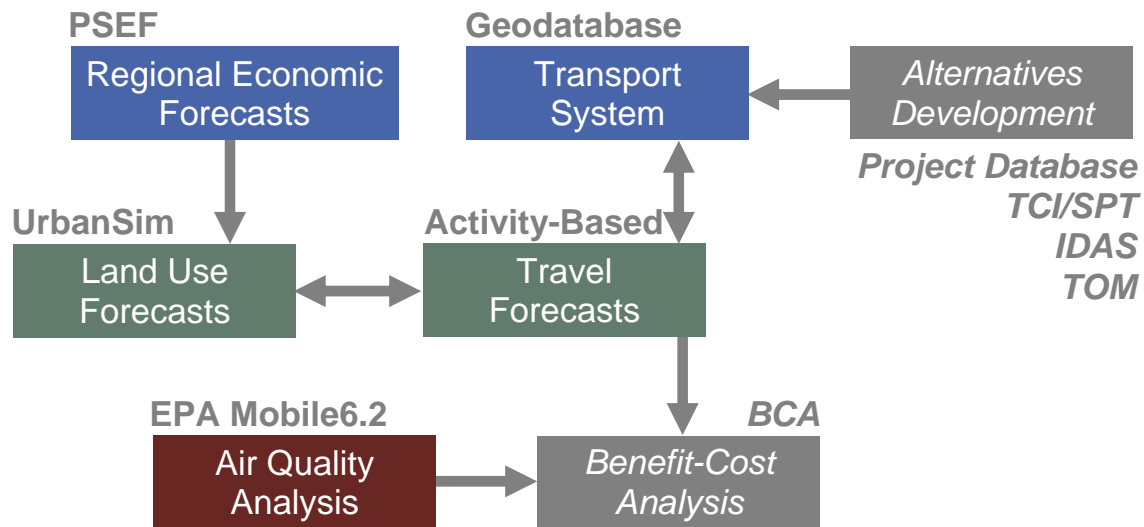
² This requirement is further clarified in the joint FHWA/EPA Memorandum, "Use of Latest Planning Assumptions in Conformity Determinations," dated January 18, 2001.

the applicable SIP or submitted SIP revision.

Technical Analysis Procedures

The federal conformity rule includes procedures for estimating regional emissions for transportation plan conformity analyses (§93.122). The process for estimating regional emissions for the conformity analysis of Transportation 2040 involves the integration of PSRC's land use and travel demand modeling with EPA's emissions factor model. Figure 2 provides an overview of the models used in PSRC's transportation and air quality analysis process.

FIGURE 2: Overview of Models Used in PSRC's Transportation Planning to Prepare Mobile Source Emissions



Note: The *Alternatives Development* and *Benefit-Cost Analysis* features of the integrated modeling suite are not used as part of the conformity analyses.

The conformity analysis must include modeling of all regionally significant projects. As defined by the conformity rule, a regionally significant project is:

"a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel."

The conformity analysis includes all modelable projects and programs contained in Transportation 2040. These refinements and updates include new projects or changes to existing projects submitted as part of the outreach for Transportation 2040, as well as changes to existing projects submitted through the Regional Transportation Improvement Program. Projects are coded into PSRC's travel demand model networks for their respective years of implementation.

Modeling Assumptions

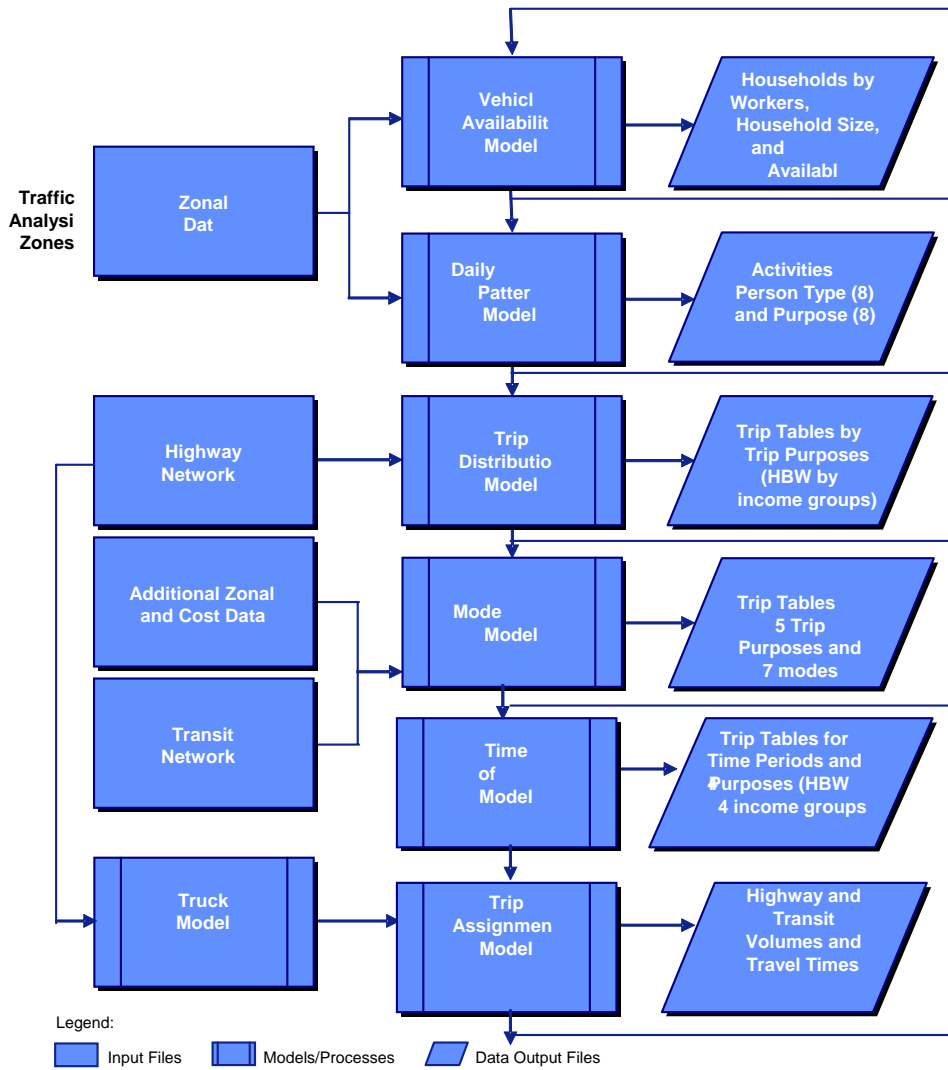
The conformity analysis of Transportation 2040 is based on the most current socioeconomic, travel and emissions information (as required under Section 93.110 of the federal conformity rule and further detailed in the January 2001 FHWA/EPA Memorandum, “Use of Latest Planning Assumptions in Conformity Determinations”).

PSRC’s new land use model, UrbanSim, uses future year land use plans as an implicit input. Given the adoption of Vision 2040 in 2008, modeling inputs for Transportation 2040 were developed to correspond with the goals and objectives of the Regional Growth Strategy component of Vision 2040³. Staff developed a representation of the region’s collective future year land use plans as a starting point, and then modified existing comprehensive plan constraints in areas designated in Vision 2040 as locations likely to see more intensive growth. These changes allowed the integrated models to accommodate the full amount of growth from the regional economic model while providing enough development capacity for land use patterns to be affected by variations in the transportation alternatives. The region is forecast to grow by an additional 1.5 million persons between 2006 and 2040, increasing 42% to reach a population of nearly 5 million by 2040. Current forecasts of regional employment show the region adding another 1.2 million jobs between 2000 and 2040, bringing the regional jobs base to over 3.1 million, an increase of 64% during the period at an average rate of 1.2% per year. Further information on the regional forecasts is available through PSRC’s web site (www.psrc.org) or by calling the Information Center ((206)464-7532).

PSRC’s new activity-based travel demand model was used for this analysis. The new model represents activities, rather than travel, which is important to the ability to link choice of mode, destination, timing and the number of trips. These activity-based models track individuals rather than groups of people, making them more behaviorally correct than trip-based models. PSRC has completed Phase I of the activity-based model and incorporated the trip-making component into our current regional forecasting process. This allows for a determination of the number of trips and stops by trip purpose. Figure 3 further illustrates the activity-based model. Additional information on PSRC’s travel demand modeling procedures is available through PSRC’s web site (www.psrc.org) or by calling the Information Center ((206)464-7532).

³ PSRC received concurrence from the region’s air quality consultation partners in October 2008 to use the VISION 2040 Growth Strategy as the appropriate forecast land use for purposes of conformity. This concurrence was reiterated during the August 2009 Scoping Meeting.

FIGURE 3: PSRC's Activity-Based Travel Demand Model



The emissions for each of the analyses – CO and PM₁₀ – were generated by output from PSRC's travel demand model and EPA's MOBILE6.2 vehicle emissions modeling software. The model settings were coordinated with PSRC's air quality partner agencies, using the same procedures used by PSCAA to develop the emissions inventories in each of the respective maintenance plans. The most current vehicle registrations and I/M settings were used for each analysis. The PM₁₀ analyses also include estimates of future heavy truck volumes serving the ports of Seattle and Tacoma, derived from forecasts of total port activity. Appendix B contains the MOBILE6.2 input files used in the analysis.

The use of MOBILE6.2 was required by EPA for any new conformity analyses begun after January 29, 2004. The MOBILE6.2 modeling software produces significantly different emissions estimations than the previous version, MOBILE5. The procedures and methodologies used for this analysis, however, are consistent with all previous conformity analyses conducted by PSRC, and have been discussed and approved by PSRC's air quality partner agencies.

Results

The conformity analysis must show that the total regional emissions produced by projects in Transportation 2040, plus activity on the existing travel network, do not exceed the motor vehicle emissions budget identified in the maintenance plan for each respective criteria pollutant. The emissions budget is a ceiling of total emissions that cannot be exceeded. Emissions are calculated on an individual link basis, based on the vehicle miles traveled (VMT) and speed of each link. This calculation is performed separately for each of five time periods (a.m. peak, midday, p.m. peak, evening and nighttime). Emissions are calculated for both intrazonal and interzonal trips. The calculated emissions of individual links are then summed for each of the five time periods, which in turn are summed for the total daily emissions in each maintenance area.

Tables 1 and 2 identify the motor vehicle emissions budget for each criteria pollutant, and display the analysis results. Pursuant to Section 93.118(b) of the federal conformity rule, analyses were conducted for each year for which a motor vehicle emissions budget has been established, the horizon year of Transportation 2040 and intermediary years such that the analyses are no more than 10 years apart. The CO maintenance plan identifies a motor vehicle emissions budget for the horizon year of 2016; the PM₁₀ maintenance plan identifies motor vehicle emissions budgets out to a horizon year of 2010⁴. Under consultation with PSRC's air quality partner agencies and consistent with standard practices (Section 93.118(b)(2)(ii) of the federal conformity rule), these budgets were carried forward in this analysis as the budgets for 2020, 2030 and 2040, which is the horizon year of Transportation 2040.

⁴ Under consultation, since Transportation 2040 will be adopted in May 2010, only the forecast years were analyzed for conformity.

TABLE 1 –CO Analysis Results

	Maintenance Area VMT (miles per day)	CO (tons per day)
Emissions Budget (all years)*	n/a	2,512.00
2016	n/a^	1033.17
2020	78,064,304	943.66
2030	81,851,288	1135.26
2040	85,280,704	1188.45

*Central Puget Sound Region Maintenance Plan for the National Ambient Carbon Monoxide Standard, 2004

^ The updated CO maintenance plan, effective September 7, 2004, extended the horizon year from 2010 to 2016; the 2016 emissions estimation, therefore, was derived from an interpolation between the base year (2006) and 2020 modeled analyses, per consultation with PSRC's air quality partner agencies and consistent with Section 93.118(d)(2) of the federal conformity rule.

TABLE 2 –PM₁₀ Analysis Results

	Kent		Duwamish		Tacoma	
	VMT (miles/day)	PM ₁₀ (lbs./day)	VMT (miles/day)	PM ₁₀ (lbs./day)	VMT (miles/day)	PM ₁₀ (lbs./day)
Emissions Budget*	n/a	231.5	n/a	844.4	n/a	460.8
2020	539,408	77.9	2,367,343	274.9	1,766,844	209.4
2030	552,960	80.8	2,403,185	276.8	1,844,154	221.0
2040	561,228	84.4	2,457,091	287.8	1,933,141	240.1

*Central Puget Sound Region Maintenance Plan for the National Particulate Matter (PM₁₀) Standard (Seattle, Kent and Tacoma), 2001

Note: The highlighted values represent the motor vehicle emissions budget for each pollutant, as identified in the appropriate maintenance plan. All other values represent modeled emissions.

As shown in the above tables, the emissions levels from the projects and programs in Transportation 2040 for each of the analysis years are below the established daily motor vehicle emissions budgets for the criteria pollutants of CO and PM₁₀, as identified in their respective maintenance plans. The analysis for both CO and PM₁₀ indicates a gradual increase in emissions out to 2040. A large decrease in emissions from motor vehicles is expected between 2010 and 2020, due to new regulations and technologies taking effect. After 2020, emissions from motor vehicles will continue to decrease but at a less dramatic rate; coupled with the growth in VMT during this time period, overall emissions will gradually increase.

Conclusions

This analysis provides sufficient basis for PSRC to determine that Transportation 2040 conforms to the CO and PM₁₀ maintenance plans as required by the federal Clean Air Act and the state Clean Air Washington Act.

In addition, since this analysis includes all modelable projects and programs identified in the Regional Transportation Improvement Program (TIP), this analysis reconfirms the conformity finding of the 2010-2013 Regional TIP.

**Scoping Meeting Summary
Air Quality Conformity Analysis for Transportation 2040
August 5, 2009**

Meeting Summary

The meeting was convened by Puget Sound PSRC staff to clarify with the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Environmental Protection Agency (EPA), the Washington State Department of Ecology, the Washington State Department of Transportation (WSDOT) and the Puget Sound Clean Air Agency (PSCAA) the assumptions and methodologies to be used for the air quality conformity analysis of Transportation 2040. Additionally, the meeting was intended to allow other interested representatives of the public to provide input. This consultation prior to entering into a plan or program conformity analysis meets the requirements of the State (WAC 173-420-070) and Federal (40 CFR Part 93) Conformity Rules.

Attendance: Cliff Hall, Jim Laughlin, Karin Landsberg, Tim Sexton-WSDOT; Paul Carr-PSCAA; Sidney Stecker-FHWA; Ned Conroy-FTA; Claudia Vaupel-EPA; Sally Otterson-Ecology; Kelly McGourty-PSRC.

1. CALL TO ORDER

Kelly McGourty called the meeting to order and the attendees introduced themselves. Kelly began the meeting by stating that the purpose of the scoping meeting was to discuss and clarify the assumptions and procedures for the conformity analysis of Transportation 2040 as required by state and federal laws.

2. PUBLIC COMMENT

An opportunity was provided for public comment; none was received.

3. INTRODUCTION TO Transportation 2040

Kelly gave an overview of Transportation 2040 and the conformity requirements. This is a major update to the previous version of the plan, *Destination 2030*, and will include an updated project list and a new financial strategy. Kelly explained that transportation conformity ensures that plans, programs and projects are evaluated for their impacts on air quality prior to funding or approval. Specifically, they may not cause or contribute to new violations, exacerbate existing violations, or interfere with the timely attainment of air quality standards. The conformity legislation includes:

- federal Clean Air Act (CAA)
- federal final transportation conformity rule and amendments (40 CFR Part 93)
- Clean Air Washington Act
- state conformity rule (WAC Chapter 173-420)
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

Kelly then explained that the Central Puget Sound region contains maintenance areas for

carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM₁₀) in the industrial areas of the Duwamish River in Seattle, the Kent Valley and the Tacoma Tidelands. A map was presented showing the locations and boundaries of each of the maintenance areas. The group also discussed the fact that the region is designated “Unclassifiable/Attainment” for the new 8-hour ozone and PM_{2.5} standards, and since the 1-hour ozone standard was revoked as of June 15, 2005, conformity to that standard is no longer required.

4. SUMMARY OF ASSUMPTIONS FOR ANALYSIS

Kelly outlined four key requirements of conformity analyses, based on the federal and state conformity rules:

- A. Latest Planning Assumptions
- B. Latest Emissions Estimation Model Available
- C. Consultation
- D. Consistency with the Motor Vehicle Emissions Budget

A. Latest Planning Assumptions

Transportation Model Assumptions

The transportation modeling will include the latest planning assumptions, such as the most recent population and employment forecasts and future operating conditions and transit service levels. Per the October 2008 consultation agreement, the VISION 2040 land use assumptions are to be used for Transportation 2040. PSRC’s travel demand modeling procedures are outlined in Land Use and Travel Demand Forecasting Models, which can be found on the Regional Council’s website at www.psrc.org, or by calling the Regional Council’s Information Center at (206)464-7532.

Transportation Networks

The transportation networks for the conformity modeling include the following:

- the existing transportation network
- projects and programs in Transportation 2040

Selecting Projects to be Modeled

Projects which are on, or affect, the Metropolitan Transportation System (MTS) are included in the transportation model. These include roadway projects that result in new links, capacity changes on an existing link or changes in average speed on existing links. Also included are non-roadway projects such as park and ride lots, increased transit service, etc. PSRC staff will determine the modelability of all projects.

B. Latest Emissions Estimation Model Available

Emissions Model Assumptions

For the CO analysis, EPA’s MOBILE6.2 model will be used, with the most current vehicle registrations and Inspection and Maintenance (I/M) settings obtained from Ecology. EPA’s

MOBILE6.2 model will also be used for the PM₁₀ analysis, using current vehicle registrations obtained from Ecology. Additional Port truck traffic in the Duwamish and Tacoma Tidelands Industrial Areas will be based on cargo forecasts. The analysis for both pollutants will follow the same procedures used in each of their respective maintenance plans.

C. Consultation

Both interagency consultation procedures to discuss methodologies and assumptions, and public consultation such as this scoping meeting, are required under federal and state conformity rules. PSRC's air quality consultation partners include representatives from the following agencies:

- Federal Highway Administration
- Federal Transit Administration
- Environmental Protection Agency
- Washington State Department of Ecology
- Washington State Department of Transportation
- Puget Sound Clean Air Agency

D. Consistency with the Motor Vehicle Emissions Budget

The emissions budget for the CO maintenance area is 2,512 tons per winter day for all years, and the horizon year of the CO maintenance plan is 2016. The emissions budgets for the PM₁₀ maintenance areas are 383 kilograms per day in the Duwamish River Industrial Area, 105 kilograms per day in the Kent Valley Industrial Area and 209 kilograms per day in the Tacoma Tidelands Industrial Area. The PM₁₀ maintenance plan has a horizon year of 2010.

Conformity Tests

Kelly next described the conformity tests that will be applied for the analysis of Transportation 2040:

- CO
 - 2020, 2030 and 2040 modeled daily emissions vs. motor vehicle emissions budget
 - 2016 interpolated daily emissions vs. motor vehicle emissions budget
- PM₁₀
 - 2020, 2030 and 2040 modeled daily emissions vs. motor vehicle emissions budgets

Since the maintenance plans for each pollutant will have a horizon year of either 2010 or 2016, under consultation and consistent with Section 93.118(b)(2)(ii) of the federal conformity rule, these emissions budgets will be carried forward as de facto 2020, 2030 and 2040 budgets. Also, consistent with Section 93.118(d)(2) of the federal conformity rule and under consultation, analyses for those years for which budgets are identified but for which a regional model does not exist shall be performed based on interpolation.

5. OVERVIEW OF SCHEDULE

The schedule for Transportation 2040 is as follows:

- Air Quality Conformity Scoping Meeting: August 5, 2009
- Final Transportation Policy Board Recommendation: March 2010
- Executive Board Action: March 2010
- General Assembly Adoption: May 2010

The air quality conformity documentation released for public review will include a summary of the August 5, 2009 scoping meeting, summaries of the methodology and analysis, and findings and conclusions. The documentation will be available on PSRC's web site, www.psrc.org, or by calling the Information Center at (206)464-7532.

DECEMBER 11, 2009 FOLLOW-UP CONSULTATION

Attendance: Cliff Hall, Tim Sexton-WSDOT; Ned Conroy-FTA; Claudia Vaupel, Gina Bonifacino, Krishna Viswanathan-EPA; Mike Boyer-Ecology; Kelly McGourty-PSRC.

At the December 11, 2009 meeting of the air quality consultation partners, Kelly explained that PSRC is using a new modeling framework for Transportation 2040 and all future analyses. This new framework is an integrated suite of models, with iterative interactions between the land use and travel demand modeling forecasts. Whereas in the past the model produced travel networks with fixed land use for 2010, 2020 and 2030, the new modeling framework is constructed in the following way:

Exhibit 2. Land Use/Travel Model Integration for Fully Integrated Runs

Model Inputs and Integration	Analysis Year				
	2006 (base)	2015	2025	2035	2040
Travel Model Networks and other Inputs created for these Years:	2006	2020	2020	2040	2040
Land Use Model Runs, using accessibilities from: *	a previous travel model run for land use model run 2006	2006 travel model for land use model runs 2007 through 2015	2015 travel model for land use model runs 2016 through 2025	2025 travel model for land use model runs 2026 through 2035	2035 for land use model runs 2036 through 2040
Travel Model Runs, using population and employment from:	2006 land use model run	2015 land use model run	2025 land use model run	2035 land use model run	2040 land use model run

This framework deviates from past practice in that we will no longer have modeled runs matching the motor vehicle emissions budgets for PM₁₀, and the conformity regulations state that “Consistency with the motor vehicle emissions budget(s) must be demonstrated for each year for which the applicable (and/or submitted) implementation plan specifically establishes motor vehicle emissions budget(s)...”

As such, Kelly asked if PSRC would have to modify our modeling framework and prepare the additional network years of 2020 and 2030. Also, she asked for verification that since Transportation 2040 is to be adopted in May 2010, a 2010 analysis would not be required.

The consensus of the consultation partners was that PSRC need not expend additional resources for this modeling issue, particularly since modeled emissions continue to be well below the MVEB for both pollutants. Since PSRC is currently allowed to interpolate for the 2016 CO MVEB test, EPA concluded that interpolation between model years would also be an appropriate substitute for each of the PM₁₀ MVEB years.

Appendix B

MOBILE6.2 Input Parameters

The following files are included in this appendix:

MOBILE6.2 input file for CO analysis

MOBILE6.2 input file for PM₁₀ analysis

Current vehicle registrations and current I/M program settings were provided by Ecology.

MOBILE6.2 Input File for CO

***** Header Section *****
MOBILE6 INPUT FILE

SPREADSHEET :
POLLUTANTS : CO

PARTICULATES : SO4 OCARBON ECARBON GASPM LEAD BRAKE TIRE
RUN DATA

***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt
FUEL PROGRAM : 1
NO REFUELING :
***** Scenario Section *****

SCENARIO RECORD : PS_winter,no_IM,Freeway
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Freeway 92.0 0.0 0.0 8.0
(3.0 to 65.0 mph)

END OF RUN
***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt
FUEL PROGRAM : 1
NO REFUELING :
***** Scenario Section *****

SCENARIO RECORD : PS_winter,no_IM,Arterial
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Arterial
(3.0 to 65.0 mph)

END OF RUN
***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt
FUEL PROGRAM : 1
NO REFUELING :
I/M DESC FILE : c:\mobile62\mobile6\run\im2006.ps1
***** Scenario Section *****

SCENARIO RECORD : PS_winter,IM1,Freeway
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Freeway 92.0 0.0 0.0 8.0
(3.0 to 65.0 mph)

(MOBILE6 Input File for CO cont.)

END OF RUN
***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt

FUEL PROGRAM : 1
NO REFUELING :
I/M DESC FILE : c:\mobile62\mobile6\run\im2006.ps1
***** Scenario Section *****

SCENARIO RECORD : PS_winter,IM1,Arterial
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Arterial
(3.0 to 65.0 mph)

END OF RUN
***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt
FUEL PROGRAM : 1
NO REFUELING :
I/M DESC FILE : c:\mobile62\mobile6\run\im2006.ps2
***** Scenario Section *****

SCENARIO RECORD : PS_winter,IM2,Freeway
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Freeway 92.0 0.0 0.0 8.0
(3.0 to 65.0 mph)

END OF RUN
***** Run Section *****
REG DIST : c:\mobile62\mobile6\run\reg2008.txt
FUEL PROGRAM : 1
NO REFUELING :
I/M DESC FILE : c:\mobile62\mobile6\run\im2006.ps2
***** Scenario Section *****

SCENARIO RECORD : PS_winter,IM2,Arterial
CALENDAR YEAR : 2020 (2030, 2040)
EVALUATION MONTH : 1
MIN/MAX TEMP : 34.0 50.0
ABSOLUTE HUMIDITY : 20.0
FUEL RVP : 14.3
PARTICLE SIZE : 10.0
DIESEL SULFUR : 15
PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
AVERAGE SPEED : 3.0 Arterial
(3.0 to 65.0 mph)

MOBILE6.2 Input File for PM₁₀

***** Header Section *****

MOBILE6 INPUT FILE

SPREADSHEET :
 POLLUTANTS :

PARTICULATES : SO4 OCARBON ECARBON GASPM LEAD BRAKE TIRE
 RUN DATA

***** Run Section *****

REG DIST : c:\mobile62\mobile6\run\reg2008.txt
 FUEL PROGRAM : 1
 NO REFUELING :

***** Scenario Section *****

SCENARIO RECORD : PS_winter,no_IM,Areawide
 CALENDAR YEAR : 2020 (2030, 2040)
 EVALUATION MONTH : 1
 MIN/MAX TEMP : 34.0 50.0
 ABSOLUTE HUMIDITY : 20.0
 FUEL RVP : 14.3
 PARTICLE SIZE : 10.0
 DIESEL SULFUR : 15
 PARTICULATE EF : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV

END OF RUN

Additional Inputs for PM₁₀ Emissions Calculations

2020 Port VMT:

Kent	Duwam	Tacoma
0	27364	16837

Road Dust Emission Factors

0.004
 0.059
 0.143
 0.206

2030 Port VMT:

Kent	Duwam	Tacoma
0	35544	24097

2040 Port VMT:

Kent	Duwam	Tacoma
0	46170	28408

VMT Adjustment Factors:

FT	Kent	Duwam	Tac
1	0.716	0.876	0.889
2	0.716	0.876	0.889
3	0.710	0.829	0.940
4	0.710	0.829	0.940
5	0.492	1.311	1.472
6	0.710	0.829	0.940
7	2.441	2.731	2.787