Appendix E: Regional Air Quality Conformity Analysis

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 Moving Ahead for Progress in the 21st Century Act (MAP-21), 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

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for seven criteria air pollutants: fine particulate matter (PM$_{2.5}$), coarse particulate matter (PM$_{10}$), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides (NO$_X$), and lead. Areas of the country where there have been exceedances of the NAAQS may be designated by the U.S. Environmental Protection Agency (EPA) as "nonattainment" for a particular pollutant. A maintenance area is an area that was designated nonattainment for one of the NAAQS, but later met the standard and was redesignated to attainment. The Clean Air Act (CAA) requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for any pollutant. These plans, known as State Implementation Plans or SIPs, are developed by state and local air quality management agencies and submitted to EPA for approval.

Within the Puget Sound region, there is a PM$_{2.5}$ nonattainment area, CO maintenance area, and three PM$_{10}$ maintenance areas. Figure 1 shows the location of the maintenance area boundaries. The region is in attainment of all other criteria pollutants.

In 2008, a portion of Pierce County was designated as nonattainment for PM$_{2.5}$. This area is located in Wapato Hills-Puyallup River Valley area near Tacoma. Sources of indirect PM$_{2.5}$ emissions must be considered because they can result in formation of PM$_{2.5}$ emissions. NO$_X$ is considered a PM$_{2.5}$ precursor; therefore NO$_X$ emissions are addressed as part of the PM$_{2.5}$ conformity demonstration. Other pollutants can be considered PM$_{2.5}$ precursors but were not identified as having a significant contribution to PM$_{2.5}$ emissions in the nonattainment area.

In 1978, the central Puget Sound region was classified as a nonattainment area by EPA for
carbon monoxide (CO). In 1996, having met the federal standards for several years, the region was redesignated by the EPA as a maintenance area for CO\textsuperscript{1}.

\textsuperscript{1} The region was previously a maintenance area for the original 1-hour ground-level ozone standard; a newer standard based on an 8-hour average concentration replaced the 1-hour standard as of June 15, 2005. The region is currently designated as Unclassifiable/Attainment for the 8-hour ground-level ozone standard, and therefore demonstrations of conformity to this standard are not required.
Figure 1

Current Central Puget Sound Region
Designated Maintenance and Nonattainment Areas
January 2011
In 1987, the industrial areas of the Seattle Duwamish River, Kent Valley and Tacoma Tideflats were classified as nonattainment areas for PM$_{10}$. The three PM$_{10}$ areas were redesignated as maintenance areas effective May 14, 2001, after years of meeting the NAAQS. In December 2013, EPA proposed the approval a limited maintenance plan for the three PM$_{10}$ areas. A limited maintenance plan is used to meet Clean Air Act requirements for formerly designated nonattainment areas with little risk of violating the PM$_{10}$ NAAQS again. All three areas currently have monitored PM$_{10}$ levels that are roughly one-third of the PM$_{10}$ NAAQS, with steady declines in PM$_{10}$ levels since the areas were first identified as potentially violating the PM$_{10}$ NAAQS in 1987. As a result, the three PM$_{10}$ areas will no longer be required to compare regional motor vehicle emissions to a motor vehicle emissions budget as part of the conformity process. EPA released the approval of the limited maintenance plan for public comment on December 26, 2013; comments were received through January 27, 2014 and the plan was subsequently finalized by EPA before adoption of the Transportation 2040 Update.

Conformity Analysis Requirements

Transportation conformity is required by the Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federal funding and approval are given to highway and transit projects that are consistent with ("conform to") the air quality goals established by a SIP. Conformity, to the purpose of the SIP, means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

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.

**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 the applicable SIP or submitted SIP revision.

---

2 Additional requirements still apply under a Limited Maintenance Plan, including consultation, the implementation of any outstanding TCMs, and project level analyses.

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

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. The land use and travel demand modeling must be based on the latest planning assumptions.

Land Use Modeling
For the Transportation 2040 Update technical analysis, PSRC utilized a spreadsheet allocation model to develop a tailored land use forecast product called the Transportation 2040 Update Land Use (or TULU) dataset. The TULU dataset was purposefully crafted to meet the following technical specifications and policy requirements:

- The TULU dataset is consistent with the region’s most current long-range regional forecast of households, population and employment from the 2012 Regional Macroeconomic Forecast;
- The TULU dataset reflects the regional long-range strategic growth assumptions as detailed by the VISION 2040 regional growth strategy; and
- The TULU dataset is reflective of locally adopted growth targets developed to begin implementing the VISION 2040 regional growth strategy.

Travel Demand Modeling
PSRC has developed a customized set of computer programs and mathematical procedures to simulate current and future travel patterns and conditions within the four counties (King, Kitsap, Pierce, and Snohomish) of the central Puget Sound region. These programs and procedures are collectively referred to as the “regional travel demand forecasting model” or simply as the “travel model.” The travel model produces detailed spatial and network data that are used to analyze how the region’s transportation infrastructure and environment are likely to be impacted by future population growth and development.

For the travel demand analysis used to support the Transportation 2040 Update, the previously mentioned TULU dataset comprises the key land use assumption, while the set of transportation projects and policies enumerated within Transportation 2040 form the basis for the key transportation network assumptions for analysis. 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).

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. Projects are coded into PSRC’s travel demand model networks for their respective years of implementation. The travel demand model analyses performed for the Transportation 2040 Update include 2006, 2010, 2025, and 2040.

Latest Emissions Model

The use of MOVES (Motor Vehicle Emission Simulator) is required by EPA for any new regional conformity analyses begun after March 2, 2013. The MOVES2010b model represents EPA’s most up-to-date assessment of on-road mobile source emissions and produces significantly different emissions estimations than the MOBILE6.2 model. Key changes between MOVES2010b and MOBILE6.2 include the following:

- Volatile organic compound (VOC) emissions are lower, most noticeably for Tier 1 and newer vehicles
- Nitrogen oxide (NOx) emissions from both light- and heavy-duty trucks are higher than previously estimated
- Emissions of fine particulates (PM2.5) are significantly higher for both light- and heavy-duty vehicles, based on extensive research conducted over the last several years
- MOVES2010b incorporates new fuel economy and greenhouse gas standards adopted through September 2010, which were not included in either Mobile6.2 or MOVES Demo, which was the tool used to estimate greenhouse gas emissions for the adopted plan in 2010

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.

Emissions were calculated for CO, PM_{2.5}, and NOx. The emissions for each of the analyses were generated by output from PSRC’s travel demand model and MOVES version 2010b. Emission estimates for PM_{2.5} and NO_x were created using model settings consistent with the procedures used by Ecology to develop the motor vehicle emissions budgets provided in conjunction with the PM_{2.5} Clean Data Determination. The model settings for the CO analysis were based on the inputs and procedures used in the emissions inventories in the CO maintenance plan. All model options and assumptions were coordinated with PSRC’s air quality partner agencies.

MOVES inputs include the most current vehicle registrations, vehicle inspection and maintenance (I/M) settings, fuel supply data, and local meteorology at the county level. Ecology provided county-specific input files that were used in the most recent statewide emissions inventory. These files were used to create input files for future analysis years, assuming the fleet mix and age distribution remains constant. MOVES utilizes a database-centered design that does not create an input file that could be provided as part of this documentation. Appendix A contains more details about MOVES methodology and assumptions.
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 November 18, 2013. Notification of the meeting was made through a public announcement in 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 November 18, 2013, Scoping Meeting is contained in Appendix B. The group discussed MOVES inputs and assumptions, as well as required analysis years. A key outcome of the meeting was agreement by the partners that emissions would be calculated for the years corresponding to the travel model analysis, and interim year emissions calculations would be interpolated from those results.

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 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. There are no control measures in the PM$_{10}$ maintenance plan.
relating to on-road mobile sources.

**Motor Vehicle Emissions Budget**

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.

Table 1 identifies the motor vehicle emissions budget for each criteria pollutant and presents 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. 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. In addition, CO was analyzed for 2016 because the CO maintenance plan identifies a motor vehicle emissions budget for the horizon year of 2016.

Emissions of CO, PM$_{2.5}$, and NO$_{X}$ were calculated for 2010, 2025, and 2040, corresponding to the available travel modeling analysis years. The emissions for 2016, 2020, and 2030 were therefore interpolated, per consultation with PSRC’s air quality partner agencies and consistent with Section 93.118(d)(2) of the federal conformity rule.

<table>
<thead>
<tr>
<th>TABLE 1 – Emissions Analysis Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO</strong> (tons per day)</td>
</tr>
<tr>
<td>Emissions Budget</td>
</tr>
<tr>
<td>2016</td>
</tr>
<tr>
<td>2020</td>
</tr>
<tr>
<td>2030</td>
</tr>
<tr>
<td>2040</td>
</tr>
</tbody>
</table>

$^{a}$ CO motor vehicle emissions budget as identified in The updated CO maintenance plan, effective September 7, 2004

$^{b}$ PM$_{2.5}$ and NO$_{X}$ motor vehicle emissions budgets as identified in the revision to the Washington State Implementation Plan, effective October 21, 2013

As shown in the table above, 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, PM$_{2.5}$, and NO$_{X}$. A large decrease in emissions from motor vehicles is expected between current conditions and 2030, due to new regulations and technologies taking effect. After 2030, 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 may gradually increase, as demonstrated by the slight increase in CO emissions between 2030 and 2040.
Conclusions

This analysis provides sufficient basis for PSRC to determine that Transportation 2040 conforms to the Washington State Implementation Plan 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 2013-2016 Regional TIP.
Appendix A

Emissions Methodology

As part of the regional conformity analysis, onroad mobile emissions of CO, PM2.5, and NOX were estimated for required years within the respective maintenance and nonattainment areas. The PM2.5 and NOx conformity analyses are consistent with the methodology Ecology used to develop the PM2.5 and NOx motor vehicle emissions budgets (MVEB). The CO MVEB was developed using the MOBILE6 model, which has been replaced by MOVES. The PM2.5 MOVES methodology was applied to the CO emission analysis, and inputs specific to the CO SIP were considered as appropriate.

The budget calculation method developed by Ecology was designed to be as simple as possible, yet without sacrificing the accuracy of the emissions estimates. The basic calculation equation is shown below, followed by a more detailed description of the method and data sources.

**Basic Calculation**

\[ E = (M \times F_{gmi}) + (V \times F_{gpveh}) \]

where

- \( E \) = emissions in g
- \( M \) = VMT
- \( V \) = vehicle population
- \( F_{gmi} \) = emission factor in g/mi
- \( F_{gpveh} \) = emission factor in g/vehicle

**Vehicle Miles Traveled**

As part of the Transportation 2040 update, average daily weekday VMT for the Puget Sound region for the years 2006, 2010, 2025 and 2040 was modeled.

The travel demand model VMT is estimated for individual roadway links for 5 periods during the day: Morning = 6a - 9a, Midday = 9a - 3p, Afternoon = 3p - 6p, Evening = 6p - 10p, Nighttime = 10p - 6a.

Data for each link and time period includes:

- Length
- Facility type
- Functional class (for most links)
- County
- NAA flag (Yes/No flag for in the nonattainment area)
- Congested speed
- VMT

The VMT link data was combined with the MOVES emission factors. First, each link was assigned to its closest MOVES speed bin and classified as to its MOVES road type: Rural Restricted, Rural Unrestricted, Urban Restricted, or Urban Unrestricted. For PM2.5 and NOx calculations, the NAA link VMT data was
summed by time period, MOVES speed bin and MOVES road type to estimate emissions for an average winter day. For CO, the same procedure was followed for the links within the maintenance area by each county and then summed to estimate emissions for an average winter day.

**Vehicle Population**

WA Dept. of Licensing (DOL, 2011), Federal Transit Administration (FTA, 2010), and WA Office of the Superintendent of Public Instruction (OSPI, 2011) vehicle registration data was used to calculate the vehicle population in Pierce, King, and Snohomish Counties. The ratio of county VMT to nonattainment or maintenance area VMT was used to allocate the vehicle population to the appropriate area.

2040 and 2025 vehicle populations were estimated for each county using a combination of vehicle trips and households. The future vehicle population was then allocated to the nonattainment or maintenance area using the VMT ratio as described above.

**Emission Factors**

Ecology provided a series of MOVES input files that were used to create the 2011 statewide PM$_{2.5}$ emissions inventory. A set of files was created for each county and represented the current vehicle registration data, fuel supply data, and I/M programs specific to each county. These files were used to create MOVES input files for 2006, 2010, 2025, and 2040, assuming that the vehicle mix and age distributions remain constant in the future.

The PM$_{2.5}$ and NO$_X$ budgets were developed with MOVES using a meteorological input file that represented the temperature profile for peak PM$_{2.5}$ conditions. MOVES was run with this same meteorological file for this conformity analysis. The CO emissions were estimated using MOVES county default values for a January weekday. The temperature profiles in the MOVES county defaults were determined by the consultation partners to adequately represent the winter day minimum and maximum temperatures used in MOBILE for the CO emissions budget.

EPA's MOVES model was used to generate PM$_{2.5}$, NO$_X$, and CO emission factors in g/mi and g/vehicle. The g/mi factors were output by hour, road type, and speed bin. The g/vehicle factors were output by hour.

The emission factors were prepared for combination with the VMT and vehicle population data. The g/mi factors were averaged over each of the 5 VMT time periods resulting in one factor per road type, time period, and speed bin. The g/vehicle factors were summed over each hour of the day resulting in one factor per day.
Appendix B

Scoping Meeting Summary

Air Quality Conformity Analysis for the 2014 Transportation 2040 Update
November 18, 2013

Meeting Summary

The meeting was convened by 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 the Transportation 2040 Update. 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: Sidney Stecker-FHWA; Karl Pepple-EPA; Andrew Green-PSCAA; Phil Swartzendruber-PSCAA; Nick Roach-Ecology; Kelly McGourty-PSRC; Rebecca Frohning-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 the 2014 Transportation 2040 Update 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

Rebecca Frohning gave an overview of the Transportation 2040 update and the conformity requirements. This is a minor update to the previous version of Transportation 2040, which was adopted in 2010, and will include an updated project list and a new financial strategy. Rebecca 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)
- Moving Ahead for Progress in the 21st Century Act (MAP-21)
Rebecca then explained that the Central Puget Sound region contains a fine particulate (PM$_{2.5}$) nonattainment area, and maintenance areas for carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM$_{10}$) in the industrial areas of the Duwamish River in Seattle, the Kent Valley and the Tacoma Tideflats. A map was presented showing the locations and boundaries of each of the maintenance areas.

4. SUMMARY OF ASSUMPTIONS FOR ANALYSIS

Rebecca 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. Since the current version of Transportation 2040 was adopted, PSRC implemented changes to both the land use model and the travel demand model. The Transportation 2040 Update Land Use (TULU) dataset reflects the VISION 2040 regional growth strategy by including long-range strategic growth assumptions and locally adopted growth targets. PSRC also updated the travel demand forecasting model. The updated travel model produces a more refined spatial and network data that are used to analyze how the region’s transportation infrastructure and environment are likely to be impacted by future population growth and development.

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
Since the adoption of Transportation 2040 in 2010, EPA has released the Motor Vehicle Emission Simulator (MOVES) emission factor model. Use of MOVES is currently required for all regional conformity analyses and will be used for all emissions estimates in the Transportation 2040 Update. The modeling analysis will utilize county-specific input files created by Ecology as part of their 2011 statewide emissions inventory. The PM$_{2.5}$ and NO$_X$ motor vehicle emissions budgets were developed with MOVES and the same methodology and inputs will be used for the conformity analyses. The CO analysis should be as consistent as possible with the MOBILE inputs used to develop the motor vehicle emission budget in the SIP. MOVES is a more refined emission factor model that requires more specific input parameters. The specific inputs used in MOBILE such as fuel RVP, minimum and maximum temperature, and inspection/maintenance programs are reflected in the more detailed MOVES inputs provided by Ecology.

Unlike MOBILE, MOVES is not designed so that a single output file can be exported to display all the input options. PSRC has a history of including the MOBILE input file as an appendix of the conformity analysis. The consensus was that in the absence of an input file, PSRC will include a more robust description of the modeling methodology. Aside from model run options such as analysis year or pollutant, all region-specific data is included in the set of files provided by Ecology. These files can easily be made available to interested parties and used to recreate the emissions factors used by PSRC.

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 PM$_{2.5}$ nonattainment area are 3,002 pounds of PM$_{2.5}$ per winter day and 71,598 pound of NO$_X$ per winter day for all years. No horizon year was identified as part of the PM$_{2.5}$ and NO$_X$ motor vehicle emissions budgets.

Conformity Tests

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

- CO
  - 2040 modeled daily emissions vs. motor vehicle emissions budget
• 2016, 2020, and 2030 interpolated daily emissions vs. motor vehicle emissions budget
• \( \text{PM}_{2.5} \)
• 2040 modeled daily emissions vs. motor vehicle emissions budget
• 2020 and 2030 interpolated daily emissions vs. motor vehicle emissions budget

• \( \text{NO}_x \)
• 2040 modeled daily emissions vs. motor vehicle emissions budget
• 2020 and 2030 interpolated daily emissions vs. motor vehicle emissions budget

• \( \text{PM}_{10} \)
• No budget test is required, assuming EPA approval of \( \text{PM}_{10} \) Limited Maintenance Plan

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. 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. 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. Emissions for analysis years 2016, 2020, and 2030 will be interpolated using emissions estimates from regional travel demand model output from 2010, 2025, and 2040.

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 the intermediate years.

5. OVERVIEW OF SCHEDULE

The schedule for Transportation 2040 is as follows:

• Air Quality Conformity Scoping Meeting: November 18, 2013
• Final Transportation Policy Board Recommendation: December 2013
• Draft Plan Released for 45-Day Public Comment Period: January 23, 2014
• General Assembly Adoption: May 29, 2014

The air quality conformity documentation released for public review will include a summary of the November 19, 2013 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.