

**AIR QUALITY CONFORMITY ASSESSMENT:  
2008 CONSTRAINED LONG RANGE PLAN AMENDMENTS AND  
FY2009-2014 TRANSPORTATION IMPROVEMENT PROGRAM**

**SCOPE OF WORK**

**I. INTRODUCTION**

Projects solicited for the 2008 Constrained Long Range Plan (CLRP) and the FY2009-2014 Transportation Improvement Program (TIP) are scheduled to be finalized at the February 20, 2008 TPB meeting. This scope of work reflects the tasks and schedule designed for the air quality conformity assessment leading to adoption of the plan and program on July 16, 2008. This work effort addresses requirements associated with attainment of the 8-hour ozone standard (volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) as ozone precursor pollutants), and fine particles (PM<sub>2.5</sub>) standards (direct particles and precursor NO<sub>x</sub>), as well as maintenance of the wintertime carbon monoxide (CO) standard.

The plan and program must meet air quality conformity regulations: (1) as originally published by the Environmental Protection Agency (EPA) in the November 24, 1993 Federal Register, and (2) as subsequently amended, most recently on March 10, 2006, and (3) as detailed in periodic FHWA / FTA and EPA guidance. These regulations specify both technical criteria and consultation procedures to follow in performing the assessment.

This scope of work provides a context in which to perform the conformity analyses and presents an outline of the work tasks required to address all regulations currently applicable.

**II. REQUIREMENTS AND APPROACH**

**A. Criteria** (See Exhibit 1)

As described in the 1990 Clean Air Act Amendments, conformity is demonstrated if transportation plans and programs:

1. Are consistent with most recent estimates of mobile source emissions,
2. Provide expeditious implementation of TCMs, and
3. Contribute to annual emissions reductions.

Assessment criteria for ozone, CO, and PM<sub>2.5</sub> are discussed below.

The 8-hour ozone SIP budgets are expected to be approved by EPA at the beginning of 2008. These new budgets will provide additional basis for the ozone season emissions budget comparison element of the conformity assessment.

The region is in maintenance for mobile source wintertime CO and, as in prior conformity assessments, is required to show that pollutant levels do not exceed the approved budget.

DC, Maryland, and Virginia state air agencies, working through the Metropolitan Washington Air Quality Committee (MWAQC), are scheduled to submit the PM<sub>2.5</sub> SIP with budgets to EPA by April 5<sup>th</sup>, 2008. Because the timing of EPA's adequacy determination is uncertain, the PM<sub>2.5</sub> pollutants will be assessed both by comparing the "action" scenarios to a 2002 base, as has been done in the past two conformity

assessments, and by comparing the pollutant levels to the submitted budgets, which will be the required methodology once the budgets are approved. PM2.5 emissions will be inventoried for yearly totals (instead of on a daily basis as performed for Ozone and CO).

**B. Approach** (See Table 1 – Summary of Technical Approach)

The analytical approach is similar to that applied and documented in the air quality conformity assessment of the 2007 CLRP and the FY2008-2013 TIP. The exception is the use of the forthcoming PM2.5 budgets, as mentioned above. In addition to the highlighted elements below, explicit inputs include: a summary list of major policy and technical input assumptions, shown as Attachment A; and all transportation network elements which will be finalized at the February 20, 2008 TPB meeting.

**TABLE 1 – Summary of Technical Approach**

	<b>Ozone</b>	<b>Wintertime CO</b>	<b>PM2.5</b>
<b>Pollutant:</b>	VOC, NOx	CO	Direct particles, Precursor NOx
<b>Budget:</b>	Existing 1-hour ozone budgets & new 8-hour ozone budgets	Approved wintertime CO emissions budget	Reductions from base 2002 inventory & comparison to new budgets
<b>Emissions Analysis Time-frame:</b>	Daily	Daily	Annual
<b>Geography:</b>	1-hour ozone non-attainment area 8-hour ozone non-attainment area (1-hr. area less Stafford)	DC, Arl., Alex., Mont., Pr. Geo.	1-hr. area less Stafford and Calvert counties
<b>Network Inputs:</b>	Regionally significant projects		
<b>Land Activity:</b>	Round 7.1 (including minor amendments, if any)		
<b>Modeled Area:</b>	Expanded Cordon (2191 zone)		
<b>Travel Demand Model:</b>	Version 2.2		
<b>Mobile Model:</b>	MOBILE6.2 emissions factors, consistent with the procedures utilized to establish the VOC and NOx mobile source emissions budgets	MOBILE6.2 Consistent with procedures used to establish the budget	MOBILE6.2 'Seasonal' approach
<b>Emissions Factor Refinements:</b>	Refinements developed as part of the recent SIP development and conformity assessments include: use of 2005 vehicle registration data for all jurisdictions; use of hourly temperatures, relative humidity, barometric pressure and NOx rebuild effects.		

**III. CONSULTATION**

1. Execute TPB consultation procedures (as outlined in the consultation procedures report adopted by the TPB on May 20, 1998).
2. Participate in meetings of MWAQC, its Technical Advisory Committee and its Conformity Subcommittee to discuss the scope of work activities, TERM development process, and other elements as needed; discuss at TPB meetings or forums, as needed, the following milestones:

- CLRP / TIP Call for Projects

- Scope of work
- TERM proposals
- Project submissions: documentation and comments
- Analysis of TERMS, list of mitigation measures
- Conformity assessment: documentation and comments
- Process: comments and responses

#### **IV. WORK TASKS**

1. Receive project inputs from programming agencies and organize into conformity documentation listings (endorsement of financially constrained project submissions scheduled for February 20, 2008)
  - Project type, limits, NEPA approval, etc.
  - Phasing with respect to forecast years
  - Transit operating parameters, e.g. schedules, service, fares
  - Action scenarios
  
2. Utilize Round 7.1 Cooperative Forecasts
  - Households by auto ownership, population and employment
  - Zonal data files
  
3. Prepare forecast year highway, HOV, and transit networks
  - Update GIS highway database
  - Filter database to create 2009, 2010, 2020, and 2030 highway networks
  - Rebuild networks for modeling
  - Update / edit transit files
  - Update fares, as necessary
  
4. Prepare 2002 travel, emissions factors and emissions estimates, if necessary
  - Execute travel demand modeling
  - Develop Mobile6.2 emission factors (ozone)
  - Calculate emissions (daily for ozone season VOC and NO<sub>x</sub>; yearly for PM<sub>2.5</sub> direct particles and precursor NO<sub>x</sub>)
  
5. Prepare 2009 travel and emissions estimates
  - Execute travel demand modeling presumably
  - Develop and apply Mobile6.2 emission factors (ozone)
  - Calculate emissions (daily for ozone season VOC and NO<sub>x</sub> for ozone standard requirements)
  
6. Prepare 2010 travel and emissions estimates
  - Execute travel demand modeling
  - Develop Mobile6.2 emission factors (ozone)
  - Calculate emissions (daily for ozone season VOC and NO<sub>x</sub> for ozone standard requirements; daily for winter CO; yearly for PM<sub>2.5</sub> direct particles and precursor NO<sub>x</sub>)

7. Prepare 2020 travel and emissions estimates
  - Tasks as in year 2010 analysis
  - Apply “transit constraint” using 2010 levels (unless additional funding is identified to enable removal of peak period capacity constraints in the core part of the Metrorail system)
8. Prepare 2030 travel and emissions estimates
  - Tasks as in year 2020 analysis
9. Identify extent to which TIP and plan provide for expeditious implementation of TCMs contained in ozone state implementation plans and emissions mitigation requirements of previous TIP and CLRP commitments (TERMs)
  - In the CLRP / TIP Call for Projects document staff identified previous TCM and TERM commitments and requested a status report from the implementing agencies
  - Staff will review these reports as they are received and update the TERM tracking sheet that was included in the January 16, 2008 air quality conformity report
  - The status reports and the updated TERM tracking sheet will be included in the air quality conformity report.
11. Coordinate / analyze emissions reductions associated with CMAQ and similar projects
  - Obtain project-specific emissions reductions from programming agencies
  - Summarize daily ozone season VOC and NOx reductions for each milestone year
  - Analyze current TERMS for yearly direct PM2.5 and precursor NOx PM2.5 pollutant reductions; explore additional TERMS
  - With oversight from the Travel Management Subcommittee, as needed, propose and analyze additional measures for their emissions benefits, costs, cost effectiveness, and other evaluation criteria
12. Analyze results of above technical analysis
  - Reductions from 1990 (ozone season VOC and NOx and winter CO) and 2002 base (ozone season VOC and NOx, winter CO, and PM2.5)
  - 1-hour and 8-hour ozone season VOC and NOx budgets, direct PM2.5 and precursor NOx budgets, and winter CO emissions budgets
  - With oversight from the Travel Management Subcommittee, the Technical Committee and the TPB, identify and recommend additional measures should the plan or program fail any test and incorporate measures into the plan
13. Assess conformity and document results in a report
  - Document methods
  - Draft conformity report
  - Forward to technical committees, policy committees
  - Make available for public and interagency consultation
  - Receive comments
  - Address comments and present to TPB for action
  - Finalize report and forward to FHWA, FTA and EPA

## V. SCHEDULE

The schedule for the execution of these work activities is contained within the air quality conformity schedule in Exhibit 2. The time line shows completion of the analytical tasks, preparation of a draft report, public and interagency review, response to comments and action by the TPB on July 16, 2008.

### Exhibit 1

#### Conformity Criteria

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All Actions at all times:

Sec. 93.110	Latest planning assumptions.
Sec. 93.111	Latest emissions model.
Sec. 93.112	Consultation.

Transportation Plan:

Sec. 93.113(b)	TCMs.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and /or Interim emissions.

TIP:

Sec. 93.113(c)	TCMs.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and /or Interim emissions.

Project (From a Conforming Plan and TIP):

Sec. 93.114	Currently conforming plan and TIP.
Sec. 93.115	Project from a conforming plan and TIP.
Sec. 93.116	CO, PM10, and PM2.5 hot spots.
Sec. 93.117	PM10 and PM2.5 control measures.

Project (Not From a Conforming Plan and TIP):

Sec. 93.113(d)	TCMs.
Sec. 93.114	Currently conforming plan and TIP.
Sec. 93.116	CO, PM10, and PM2.5 hot spots.
Sec. 93.117	PM10 and PM2.5 control measures.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and/or Interim emissions

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#### **Sec. 93.110 Criteria and procedures: Latest planning assumptions.**

The conformity determination must be based upon the most recent planning assumptions in force at the time of the conformity determination.

#### **Sec. 93.111 Criteria and procedures: Latest emissions model.**

The conformity determination must be based on the latest emission estimation model available.

**Sec. 93.112 Criteria and procedures: Consultation.**

Conformity must be determined according to the consultation procedures in this subpart and in the applicable implementation plan, and according to the public involvement procedures established in compliance with 23 CFR part 450.

**Sec. 93.113 Criteria and procedures: Timely implementation of TCMs.**

The transportation plan, TIP, or any FHWA/FTA project which is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan.

**Sec. 93.114 Criteria and procedures: Currently conforming transportation plan and TIP.**

There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval.

**Sec. 93.115 Criteria and procedures: Projects from a plan and TIP.**

The project must come from a conforming plan and program.

**Sec. 93.116 Criteria and procedures: Localized CO, PM10, and PM2.5 violations (hot spots).**

The FHWA/FTA project must not cause or contribute to any new localized CO, PM10, and/or PM2.5 violations or increase the frequency or severity of any existing CO, PM10, and /or PM2.5 violations in CO, PM10, and PM2.5 nonattainment and maintenance areas.

**Sec. 93.117 Criteria and procedures: Compliance with PM10 and PM2.5 control measures.**

The FHWA/FTA project must comply with PM10 and PM2.5 control measures in the applicable implementation plan.

**Sec. 93.118 Criteria and procedures: Motor vehicle emissions budget**

The transportation plan, TIP, and projects must be consistent with the motor vehicle emissions budget(s).

**Sec. 93.119 Criteria and procedures: Interim emissions in areas without motor vehicle budgets**

The FHWA/FTA project must satisfy the interim emissions test(s).

**NOTE:** See EPA's conformity regulations for the full text associated with each section's requirements.



## Schedule for the 2008 Financially Constrained Long-Range Transportation Plan (CLRP) and FY 2009 – 2014 Transportation Improvement Program (TIP)

*October 17, 2007	TPB Releases Final Call for Projects-- Transportation Agencies Begin Submitting Project Information through On-Line Database
January 4, 2008	Transportation Agencies submit draft On-Line Project Submissions. Technical Committee reviews draft Plan and TIP Project Submissions and draft Scope of Work for the Air Quality Conformity Assessment
<b>January 11, 2008</b>	<b><u>DEADLINE: Plan and TIP Project Submissions and draft Scope of Work finalized for transmittal to TPB</u></b>
*January 16, 2008	Plan and TIP Project Submissions and draft Scope of Work Released for Public Comment
February 15, 2008	Public Comment Period Ends
*February 20, 2008	TPB Reviews Public Comments and is asked to Approve Project Submissions and draft Scope of Work
<b>April 25, 2008</b>	<b><u>DEADLINE: Transportation Agencies Complete TIP Project Submissions and finalize Congestion Management Documentation Forms (where needed) and CLRP Forms<sup>1</sup>. (Submissions must not impact conformity inputs; note that the deadline for conformity inputs was January 11, 2008).</u></b>
May 15, 2008	TPB Citizen Advisory Committee hosts a public meeting on the Draft TIP.
*May 21, 2008	TPB Receives Status Report on the Draft Plan, TIP and Conformity Assessment
June 12, 2008	Draft Plan, TIP and Conformity Assessment Released for Public Comment at Citizens Advisory Committee (CAC)
*June 18, 2008	TPB Briefed on the Draft Plan, TIP and Conformity Assessment
July 12, 2008	Public Comment Period Ends
*July 16, 2008	TPB Reviews Public Comments and Responses to Comments, and is Presented the Draft Plan, TIP and Conformity Assessment for Adoption

\*TPB Meeting

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<sup>1</sup> By this date, the CLRP forms must include information on the Planning Factors, Environmental Mitigation, Congestion Management Information, and Intelligent Transportation Systems; separate Congestion Management Documentation Forms (where needed) must also be finalized.

## **WORK SCOPE ATTACHMENT A**

### **POLICY AND TECHNICAL INPUT ASSUMPTIONS AIR QUALITY CONFORMITY ANALYSIS OF 2008 CLRP AND FY2009-2014 TIP**

#### 1. Land Activity

- Round 7.1 Cooperative Forecasts (including minor amendments, if any)

#### 2. Policy and Project Inputs

- Highway, HOV and transit projects and operating parameters
- Financially constrained project submissions to be advanced by the TPB on 2/20/2008

#### 3. Travel Demand Modeling Methods

- Version 2.2 Travel Model
- All HOV facilities at HOV-3 in 2010
- Transit “capacity constraint” procedures (2010 constrains later years)

#### 4. Emissions Factors

- Use emissions factors methods originally developed and applied in the 2007 CLRP conformity process: MOBILE6.2, 2005 registration data, VMT mix specific to each analysis year
- Refinements based upon new methods developed for SIP analysis
- Seasonal PM2.5 factors for total directly emitted particles and precursor NOx
- No oxygenated fuels assumed for wintertime carbon monoxide conditions

#### 5. Emissions Modeling Methods / Credits

- Updated post-processor methods to reflect EPA guidance associated with Mobile6.2 model release updates for local road speed profiles in rural areas
- Yearly PM2.5 emissions (total PM2.5 and precursor NOx) using seasonal traffic adjustments and above emissions factors
- Offline emissions analyses

#### 6. Conformity Assessment Criteria

- Emissions budgets for ozone precursors, PM2.5 pollutants, and wintertime CO
- Analysis years: 2009, 2010, 2020, and 2030