AIR QUALITY CONFORMITY ASSESSMENT:
2011 CONSTRAINED LONG RANGE PLAN AMENDMENTS

SCOPE OF WORK

I. INTRODUCTION

Projects solicited for the 2011 Constrained Long Range Plan (CLRP) are scheduled to be finalized at the March 16, 2011 TPB meeting. This scope of work reflects the tasks and schedule designed for the air quality conformity assessment leading to adoption of the plan on November 16, 2011. This work effort addresses requirements associated with attainment of the ozone standards (volatile organic compounds (VOC) and nitrogen oxides (NOx) as ozone precursor pollutants), and fine particles ($PM_{2.5}$) standards (direct particles and precursor NOx), as well as maintenance of the wintertime carbon monoxide (CO) standard.

The plan 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 24, 2010, 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 $PM_{2.5}$ are discussed below.

Ozone season pollutants will be assessed by comparing the “action” scenarios to the 8-hour ozone area 2008 Reasonable Further Progress (RFP) VOC and NOx emissions budgets which were deemed adequate for use in conformity by EPA in September 2009.

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.

$PM_{2.5}$ pollutants will be assessed both by comparing the “action” scenarios to a 2002 base and by comparing the pollutant levels to the budgets submitted by the MWAQC to EPA in April, 2008. $PM_{2.5}$ 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 has several changes since the last conformity assessment. A new version of the travel demand model, Version 2.3, will be released for use in February. A finer-grain zone system (3722 instead of 2191 TAZs), with a more detailed street base, was developed for use with the new model. Ozone season pollutants will no longer be assessed against the 1-hour ozone budgets. Round 8.0 Cooperative Forecasting was updated to Round 8.0a to reflect the inclusion of new land activity data in the Baltimore Region. A new definition of what classifies a project as "regionally significant" was designated (Attachment B).

In addition to the 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 March 16, 2011 TPB meeting.

TABLE 1 – Summary of Technical Approach

	Ozone	Wintertime CO	$PM_{2.5}$
Pollutant:	VOC, NOx	CO	Direct particles, Precursor NOx
Emissions Assessment Criteria:	8-hour 2008 Reasonable Further Progress (RFP) ozone budgets	Approved wintertime CO emissions budget	Reductions from base 2002 inventory & comparison to budgets
Emissions Analysis Time-frame:	Daily	Daily	Annual
Geography:	8-hour ozone non-attainment area	DC, Arl., Alex., Mont., Pr. Geo.	8-hr. area less Calvert County
Network Inputs:	Regionally significant projects		
Land Activity:	NEW! Round 8.0a		
Modeled Area:	NEW! 3722 TAZ SYSTEM		
Travel Demand Model:	NEW! Version 2.3		
Mobile Model:	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, consistent with procedures used to establish the budget
Emissions Factor Refinements:	Use of 2008 vehicle registration data for all jurisdictions		

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 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 March 16, 2011)

- Project type, limits, NEPA approval, etc.
- Phasing with respect to forecast years
- Transit operating parameters, e.g. schedules, service, fares
- Action scenarios

2. Review and Update Land Activity files to reflect Round 8.0 Cooperative Forecasts

- Households by auto ownership, population and employment
- Zonal data files

3. Prepare forecast year highway, HOV, and transit networks

- Develop 2002, 2016, 2020, 2030, & 2040 highway networks
- Prepare 2002, 2016, 2020, 2030, & 2040 transit network input files
- Update transit fares and highway tolls, as necessary

4. Prepare 2002 travel and emissions estimates

- Execute travel demand modeling
- Calculate emissions (daily for ozone season VOC and NOx for ozone standard requirements; daily for winter CO; yearly for $PM_{2.5}$ direct particles and precursor NOx)

5. Prepare 2016 travel and emissions estimates

- Execute travel demand modeling
- Develop Mobile6.2 emission factors
- Calculate emissions (daily for ozone season VOC and NOx for ozone standard requirements; daily for winter CO; yearly for $PM_{2.5}$ direct particles and precursor NOx)

6. Prepare 2020 travel and emissions estimates

- Tasks as in year 2016 analysis

7. Prepare 2030 travel and emissions estimates

- Tasks as in year 2020 analysis
- Apply "transit constraint" using 2020 levels

8. Prepare 2040 travel and emissions estimates

   - Tasks as in year 2030 analysis, including transit constraint

9. Identify extent to which plan provides for expeditious implementation of TCMs contained in ozone state implementation plans and emissions mitigation requirements of previous CLRP commitments (TERMs)

   - In the CLRP 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 November 17, 2010 air quality conformity report
   - The status reports and the updated TERM tracking sheet will be included in the air quality conformity report.

10. 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
    - Summarize annual direct $PM_{2.5}$ and precursor NOx $PM_{2.5}$ 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

11. Analyze results of above technical analysis

    - Reductions from 1990 (ozone season VOC and NOx and winter CO) and 2002 base ($PM_{2.5}$)
    - 8-hour ozone season 2008 RFP VOC and NOx budgets, direct $PM_{2.5}$ 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

12. 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 shown 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 November 16, 2011.

Exhibit 1

Conformity Criteria

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	Emissions budget and /or Interim
Sec. 93.119	emissions.

TIP:

Sec. 93.113(c)	TCMs.
Sec. 93.118 and/or	Emissions budget and /or Interim
Sec. 93.119	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, PM_{10}, and $PM_{2.5}$ hot spots.
Sec. 93.117	PM_{10} and $PM_{2.5}$ 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, PM_{10}, and $PM_{2.5}$ hot spots.
Sec. 93.117	PM_{10} and $PM_{2.5}$ control measures.
Sec. 93.118 and/or	Emissions budget and/or Interim
Sec. 93.119	emissions

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, PM_{10}, and $PM_{2.5}$ violations (hot spots).

The FHWA/FTA project must not cause or contribute to any new localized CO, PM_{10}, and/or $PM_{2.5}$ violations or increase the frequency or severity of any existing CO, PM_{10}, and /or $PM_{2.5}$ violations in CO, PM_{10}, and $PM_{2.5}$ nonattainment and maintenance areas.

Sec. 93.117 Criteria and procedures: Compliance with PM_{10} and $PM_{2.5}$ control measures.

The FHWA/FTA project must comply with PM_{10} and $PM_{2.5}$ 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 2011 Financially Constrained Long-Range Transportation Plan (CLRP)

*October 20, 2010	TPB is Briefed on Draft Call for Projects
*November 17, 2010	TPB Releases Final Call for Projects - Transportation Agencies Begin Submitting Project Information through On-Line Database
January 21, 2011	**DEADLINE:** Transportation Agencies Complete On-Line Submission of Draft Project Inputs.
February 4, 2011	Technical Committee Reviews Draft CLRP Project Submissions and Draft Scope of Work for the Air Quality Conformity Assessment
February 10, 2011	CLRP Project Submissions and Draft Scope of Work Released for Public Comment
*February 16, 2011	TPB is Briefed on Project Submissions and Draft Scope of Work
March 12, 2011	Public Comment Period Ends
*March 16, 2011	TPB Reviews Public Comments and is asked to Approve Project Submissions and Draft Scope of Work
July 1, 2011	DEADLINE: Transportation Agencies Finalize Congestion Management Documentation Forms (where needed) and CLRP Forms[1]. (Submissions must not impact conformity inputs; note that the deadline for conformity inputs was March 1, 2010).
*September 21, 2011	TPB Receives Status Report on the Draft CLRP and Conformity Assessment
October 13, 2011	Draft CLRP and Conformity Assessment Released for Public Comment at Citizens Advisory Committee (CAC)
*October 19, 2011	TPB Briefed on the Draft CLRP and Conformity Assessment
November 13, 2011	Public Comment Period Ends
*November 16, 2011	TPB Reviews Public Comments and Responses to Comments, and is Presented the Draft CLRP and Conformity Assessment for Adoption

*TPB Meeting

[1] 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 2011 CLRP

1. Land Activity

- Round 8.0a Cooperative Forecasts

2. Policy and Project Inputs

- Highway, HOV, and transit projects and operating parameters
- Financially constrained project submissions to be advanced by the TPB on 3/16/2011

3. Travel Demand Modeling Methods

- Version 2.3 Travel Model
- All HOV facilities at HOV-3 in 2020 & beyond
- Transit "capacity constraint" procedures (2020 constrains later years)

4. Emissions Factors

- Use MOBILE6.2 emissions factors incorporating 2008 vehicle registration data
- Seasonal $PM_{2.5}$ factors for total directly emitted particles and precursor NOx

5. Emissions Modeling Methods / Credits

- Yearly $PM_{2.5}$ emissions (total $PM_{2.5}$ and precursor NOx) using seasonal traffic adjustments and above emissions factors
- Offline emissions analyses

6. Conformity Assessment Criteria

- Emissions budgets for ozone precursors, $PM_{2.5}$ pollutants, and wintertime CO
- Analysis years: 2002, 2016, 2020, 2030, & 2040

ATTACHMENT B

National Capital Region Transportation Planning Board

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January 28, 2011
MEMORANDUM

TO: TPB Technical Committee

FROM: Jane A. Posey
Transportation Engineer

SUBJECT: Defining Regional Significance for Conformity

Transportation projects that are defined as "regionally significant" must be included in an air quality conformity analysis before they may be included in the Constrained Long Range Plan (CLRP) or Transportation Improvement Program (TIP). Currently, any project that changes a link in the regional highway or transit network is considered "regionally significant". With the recent development of a finer-grain zone system, including a more detailed street base and splitting of links to add new connectors to zone centroids, it is necessary to redefine "regionally significant" in order to maintain the same threshold for "regionally significant" as in the past conformity procedures. The conformity regulations define regional significance as follows:

> ***Regionally significant project*** **means 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 following proposed new definition of a "regionally significant" project has been developed to meet the requirements of the conformity regulations while maintaining the same threshold for "regional significance" as in past conformity procedures:

1) Any project on a facility that is included in the coded regional network that adds or removes at least one continuous vehicular lane from one major road to the next, or adds a new access/egress location or capacity; or
2) Any transit project that adds or modifies fixed-guideway transit facilities (heavy rail, light rail, streetcar, bus rapid transit)

The new definition will be used for all future air quality conformity analysis, starting with the conformity analysis of the 2011 CLRP.