



# NATIONAL CAPITAL REGION

---

## TRANSPORTATION PLANNING BOARD

MEMORANDUM

**\*\*\*\*DRAFT\*\*\*\***  
(3/26/15)

**April 15, 2015**

**To: Transportation Planning Board**

**From: Jane A. Posey**  
**Transportation Engineer**

**Subject: Revision to the Scope of Work to Perform the Air Quality Conformity Analysis of the 2015 CLRP and FY2015-2020 TIP – Using MOVES2014 Model Instead of MOVES2010a**

The Environmental Protection Agency (EPA) released a new version of their mobile emissions model, MOVES2014, in July 2014, for use in transportation conformity and State Implementation Plan activities. The EPA encourages use of the latest model as expeditiously as possible, but also provided a two year grace period before the MOVES2014 model is required for use in regional conformity analyses. Transportation Planning Board (TPB) staff began working with the EPA and the region's state transportation and air agencies starting in July of 2014 to prepare the model for use in transportation conformity analyses. The TPB staff just successfully completed the model preparation and testing and reviewed the results for reasonableness and errors. TPB staff is satisfied with the model's preparatory work and believes it is ready for use in the region's upcoming air quality conformity analysis of the 2015 Constrained Long Range Plan (CLRP) and FY2015-2020 Transportation Improvement Program (TIP).

As part of the Interagency Consultation, staff shared the latest test results with the state air and transportation agencies in February and March. The group concurred that the test results were reasonable and acceptable, and that MOVES2014 is ready to be used in the air quality conformity analysis of the 2015 CLRP. Staff subsequently provided the same information to the TPB Technical Committee on March 3<sup>rd</sup>, and will brief the Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) at its April 15 meeting.

Using MOVES2014 in the upcoming conformity analysis represents the use of the latest planning assumptions, as is required in the federal conformity regulations. It also provides the results of the conformity analysis for use in upcoming State Implementation Plan (SIP) and Maintenance Plan revisions. The TPB agreed to work with MWAQC and the state transportation agencies to revise the mobile emissions budgets contained in the Fine Particles (PM<sub>2.5</sub>) Maintenance Plan using the MOVES2014 model this fall.

In February, the TPB approved the Scope of Work for the air quality conformity analysis of the 2015 CLRP and FY2015-2020 TIP. The Scope indicates the use of the MOVES2010a model. In order to use the new emissions model, TPB will need to approve the attached revised Scope of Work reflecting the use of the MOVES2014 model in the upcoming conformity analysis.

**AIR QUALITY CONFORMITY ASSESSMENT:  
2015 CONSTRAINED LONG RANGE PLAN AND  
FY2015-2020 TRANSPORTATION IMPROVEMENT PROGRAM**

**SCOPE OF WORK**

**I. INTRODUCTION**

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

Projects solicited for the 2015 Constrained Long Range Plan (CLRP) and FY2015-2020 Transportation Improvement Program (TIP) were finalized at the February 18, 2015 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 October 21, 2015. This work effort addresses requirements associated with attainment of the ozone standards (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 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 14, 2012, 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.

**II. FEDERAL REQUIREMENTS**

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
3. Contribute to annual emissions reductions.

The federal requirements governing air quality conformity compliance are contained in §93.110 through §93.119 of the Transportation Conformity Regulations (April 2012), as follows:

<b>CONFORMITY CRITERIA &amp; PROCEDURES</b>	
All Actions at all times	
§93.110	Latest Planning Assumptions
§93.111	Latest Emissions Model
§93.112	Consultation
§93.113	TCMs
§93.114	Currently conforming Plan and TIP
§93.115	Project from a conforming Plan and TIP
§93.116	CO, PM10 and PM2.5 hot spots
§93.117	PM10 and PM2.5 Control Measures
§93.118 and/or §93.119	Emissions Budget and/or Interim Emissions

**§ 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.

**§ 93.111 Criteria and procedures: Latest emissions model** - The conformity determination must be based on the latest emission estimation model available.

**§ 93.112 Criteria and procedures: Consultation** – The 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.

**§ 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.

**§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.

**§93.115 Criteria and procedures: Projects from a plan and TIP** - The project must come from a conforming plan and program.

**§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.

**§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.

**§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).

**§93.119 Criteria and procedures: Interim emissions in areas without motor vehicle budgets** - The FHWA/FTA project must satisfy the interim emissions test(s).

**Assessment Criteria:**

- Ozone season pollutants will be assessed by comparing the forecast year pollutant levels to the most recently approved 8-hour ozone area VOC and NOx mobile emissions budgets. The 2009 Attainment and 2010 Contingency budgets were deemed adequate for use in conformity by EPA in February 2013. These budgets were submitted to EPA by the Metropolitan Washington Air Quality Committee (MWAQC) in 2007 as part of the 8-hour ozone State Implementation Plan (SIP).
  
- PM2.5 pollutants will be assessed by comparing the forecast year pollutant levels to the mobile budgets in the PM2.5 Maintenance Plan. The Maintenance Plan was approved by EPA effective November 5, 2014.
  
- Wintertime CO will be assessed by comparing the forecast year pollutant levels to the budgets in the CO Maintenance Plan. The Maintenance Plan was approved by EPA effective June 3, 2005.

**III. TECHNICAL APPROACH**

The table below summarizes the key elements of the Technical Approach:

	<b>Ozone</b>	<b>Wintertime CO</b>	<b>Fine Particles</b>
Pollutant	VOC, NOx	CO	Direct PM2.5, Precursor NOx
Emissions Model	<b>MOVES2014</b> MOVES2010a		
Conformity Test	<u>Budget Test:</u> Using mobile budgets most recently approved by EPA. 2009 attainment and 2010 contingency budgets found adequate for use in conformity by EPA in Feb. 2013. All budgets were set using Mobile6 emissions model and submitted to EPA in 2007.	<u>Budget Test:</u> Using mobile budgets established with the Wintertime CO Maintenance Plan approved by EPA in 2005. All budgets set using Mobile6 emissions model..	<u>Budget Test:</u> Using mobile budgets established in the PM <sub>2.5</sub> Maintenance Plan approved by EPA in 2014. All budgets set using MOVES 2010a emissions model.
Emissions Analysis Timeframe	Daily	Daily	Annual
Vehicle Fleet Data	NEW! 2014 vehicle registration data for all jurisdictions		
Geography	8-hour ozone non-attainment area	DC, Arlington, Alexandria, Montgomery Co., Prince George’s Co.	8-hour ozone non-attainment area less Calvert County
Network Inputs	Regionally significant projects		
Land Activity	NEW! Cooperative Forecasts Round 8.4		
Modeled Area	3,722 TAZ System		
Travel Demand Model	Version 2.3.57		

#### **IV. CONSULTATION**

The TPB adheres to the specifications of the consultation procedures (as outlined in the consultation procedures report adopted by the TPB on May 20, 1998). The TPB will participate in meetings of MWAQC, its Technical Advisory Committee, and its Conformity Subcommittee to discuss the Scope of Work, TERMS development process, and other elements as needed. The TPB will discuss at 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
- CLRP Performance
- Process: comments and responses

#### **V. WORK TASKS**

The work tasks associated with the 2015 CLRP air quality conformity analysis are as follows:

1. Receive project inputs from programming agencies and organize into conformity documentation listings by:
  - Project type, limits, etc.
  - Phasing with respect to forecast years
  - Transit operating parameters, e.g. schedules, service
2. Update Travel Model Base Transit Service to reflect:
  - Service current to December 2014
  - Fares current to February 2014
3. Update Vehicle Fleet Data based on the 2014 VIN
4. Review and Update Land Activity files to reflect Round 8.4 Cooperative Forecasts with respect to:
  - Households by auto ownership, population, and employment
  - Coordination with agencies outside the MWCOG Cooperative Forecast area (BMC, FAMPO, etc.)
  - Zonal data files
  - Employment Data Census Adjustment
  - Exogenous Travel (external, through trips etc.)

5. Prepare forecast year highway, HOV, and transit networks including regionally significant projects (including I-66 Alternative A), as follows:
  - 2015, 2017, 2020, 2025, 2030, and 2040 highway networks, including HOV & HOT routes with all facilities assumed at HOV-3 for 2020 and beyond
  - 2015, 2017, 2020, 2025, 2030, and 2040 transit network input files
  - Update highway tolls, as necessary
6. VDOT I-66 Alternative B (additional access/ramps outside the beltway):
  - Modify 2025,2030, and 2040 networks
  - Execute travel demand modeling for 2025, 2030, and 2040
  - Calculate emissions for 2025, 2030, and 2040
7. VDOT I-66 Alternative: No-Build:
  - Modify 2025,2030, and 2040 networks
  - Execute travel demand modeling for 2025, 2030, and 2040
  - Calculate emissions for 2025, 2030, and 2040
8. Execute travel demand modeling for years 2015, 2017, 2020, 2025, 2030, and 2040; for years 2025, 2030, and 2040 by applying a transit constraint at 2020 levels through the core of the TPB planning area.
9. Derive Mobile Emissions Estimates for years 2015, 2017, 2025, 2030, and 2040
10. Identify extent to which plan provides for expeditious implementation of TCMs contained in ozone state implementation plans and provide emissions reductions estimates for TERMS in current TIP
11. Document timely implementation of TCMs and estimated emissions reductions from TERMS in the FY2015-2020 TIP; under the oversight of the Technical Committee and the TPB, identify additional measures, if needed, should the plan or program fail the budget test and incorporate measures into the plan
12. Summarize key inputs and outputs (VMT, mode share, emissions, etc.) of the conformity determination for use in the CLRP Performance Analysis.
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

# SCHEDULE FOR DEVELOPMENT & ADOPTION

of the 2015 Update of the Financially Constrained Long-Range Transportation Plan  
(CLRP)  
& FY 2015-2020 Transportation Improvement Program (TIP)

2014	October 15*	TPB is briefed on the draft Call for Projects document and summary brochure.
	November 19	TPB releases final Call for Projects. Transportation agencies begin submitting project information through online database.
	December 12	<b>DEADLINE:</b> Transportation agencies complete online submission of draft project inputs.
2015	January 9	Technical Committee reviews draft CLRP & TIP project submissions and draft Scope of Work for the Air Quality Conformity Analysis.
	January 15	CLRP & TIP project submissions and draft Scope of Work released for <b>30-day comment period</b> .
	January 21*	TPB is briefed on project submissions and draft Scope of Work.
	February 10	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on submissions and Scope of Work.
	February 14	Comment period ends.
	February 18*	TPB reviews comments and is asked to approve project submissions and draft Scope of Work.
	April 3	<b>DEADLINE:</b> Transportation agencies finalize CLRP forms (including Congestion Management Documentation forms where needed) and amendments to the FY 2015-2020 TIP. Submissions must not impact conformity inputs. Note that the deadline for changes affecting conformity inputs was February 18, 2015.
	September 4	Technical Committee reviews draft CLRP & TIP and Conformity Analysis.
	September 10	Draft CLRP & TIP and Conformity Analysis are released for <b>30-day comment period</b> at Citizens Advisory Committee (CAC) meeting. CLRP Performance Analysis and Regional Priorities Plan Assessment are also published.
	September 16*	TPB is briefed on the draft CLRP & TIP and Conformity Analysis.
September (TBD)	TPB staff briefs MWAQC TAC on the draft CLRP & TIP and Conformity Analysis.	
October 10	Comment period ends.	
October 21*	TPB reviews comments and responses to comments, and is presented with the draft CLRP & TIP and Conformity Analysis for adoption.	

\*Regular monthly TPB meeting