



Tier II Consultation Meeting

Agenda

March 13, 2012—2:30 p.m.

Lake County Conference Room
CMAP Offices

- 1.0 Call to Order and Introductions** 2:30 p.m.
- 2.0 Agenda Changes and Announcements**
- 3.0 Approval of Minutes – February 9, 2012**
ACTION REQUESTED: Approval
- 4.0 SIP Update**
The Illinois EPA submitted the Chicago 8-Hour Ozone Maintenance Plan and Annual PM_{2.5} Maintenance Plan to the U.S. Environmental Protection Agency on September 18, 2011. US EPA will advise the team on the status of the submission.
ACTION REQUESTED: Information
- 5.0 TIP Conformity Amendment**
The semi-annual conformity amendment is scheduled to be considered by the CMAP Board and MPO Policy Committee in March, 2012. No comments were received and the Transportation and Regional Coordinating Committee have recommended approval.
ACTION REQUESTED: Information
- 6.0 MOVES Deadline Extended**
The U.S. EPA has issued a Final Rule to extend the MOVES regional conformity grace period to March 2, 2013. This decision does not affect EPA's previous approval of the use of MOVES in official SIP submissions or the existing grace period before MOVES is required for carbon monoxide and particulate matter hot-spot analyses for project-level conformity determinations.
ACTION REQUESTED: Information
- 7.0 CREATE Passenger Rail Projects of Air Quality Concern**
IDOT has revised the MOVES input parameters for determining if CREATE Passenger Rail projects are Projects of Air Quality Concern in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas, based on the February 9, 2012 Consultation discussion. A summary of the revisions will be provided for discussion and approval.

ACTION REQUESTED: Discussion and approval of the use of MOVES and the revised input parameters.

8.0 Elgin O'Hare PM_{2.5} Hot-Spot Analysis

IDOT will present results of the PM_{2.5} Hot Spot Analysis completed for the Draft EIS.

ACTION REQUESTED: Discussion and concurrence on the PM_{2.5} Hot Spot Analysis completed for the Draft EIS.

9.0 I-80 Interchange Reconstruction at US 30

IDOT is planning to submit a TIGER application for the reconstruction of this interchange to accommodate completed and planned additional lanes on I-80, with no changes to the interchange movements, and is requesting discussion of the need to undergo conformity analysis for the associated TIP Amendment request. The rationale for no need for conformity would be the same as that discussed at our September meeting (minutes available [here](#)) when the team agreed with the add lanes work type for the I-80 bridges.

ACTION REQUESTED: Discussion

10.0 Major Capital Project Updates

A brief update on the status of Major Capital Projects is available on the Transportation Committee minutes page. The direct link to the report is http://www.cmap.illinois.gov/c/document_library/get_file?uuid=cbc932a8-72b3-4161-b62f-476525fcd61d&groupId=20583.

ACTION REQUESTED: Information

11.0 Other Business

12.0 Public Comment

This is an opportunity for comments from members of the audience. The amount of time available to speak will be at the chair's discretion. It should be noted that the exact time for the public comment period will immediately follow the last item on the agenda.

13.0 Next Meeting

14.0 Adjournment

Tier II Consultation Team Members:

	CMAP		FHWA		FTA		IDOT
	IEPA		RTA		USEPA		



Tier II Consultation Meeting

DRAFT Minutes

February 9, 2012

Offices of the Chicago Metropolitan Agency for Planning (CMAF)
Lake County Conference Room

Participants:

Reggie Arkell	FTA
Patricia Berry	CMAF
Claire Bozic	CMAF
Bernardo Bustamante	FHWA
Kama Dobbs	CMAF
Bruce Carmitchel	IDOT – Office of Planning & Programming
John Donovan	FHWA
Kimberly Glinkin	Jacobs Engineering – via phone
Dave Grewe	CTCO – UP – via phone
Steve Hoyer	CTCO – BRC – via phone
Scott Kuhner	CTCO – CSX – via phone
John Leodoro	CTCO – BNSF –via phone
Michael Leslie	USEPA
Adin McCann	HNTB
Dave Nelson	CTCO – CP – via phone
Phil Oresik	CTCO – IHB – via phone
Ross Patronskey	CMAF
Mark Pitstick	RTA
Mike Rogers	IEPA
Danielle Stewart	IDOT
Bill Thompson	AAR – via phone
Walt Zyzniewski	IDOT – via phone

1.0 Call to Order and Introductions 11:00 a.m.
All participants introduced themselves.

2.0 Agenda Changes and Announcements
Items 9.0, 8.1, 8.2 and 10.0 were moved to the beginning of the agenda for the convenience of those calling in to the meeting.

3.0 Approval of Minutes – November 4, 2011

The minutes of November 4, 2011 were approved with corrections to the spelling of the names of two meeting participants.

4.0 SIP Update

Mr. Leslie reported that the US EPA is proposing to approve the redesignation of the Greater Chicago area to attainment of the 1997 8-hour ozone NAAQS, to approve, as a revision of the Illinois SIP, the State's plan for maintaining the 1997 8-hour ozone standard through 2025, to approve 2002 VOC and NO_x emission inventories and to approve the State's 2008 and 2025 VOC and NO_x Motor Vehicle Emission Budgets (MVEBs) for the Greater Chicago area.

Mr. Leslie added that issues with the interstate transport rule are holding up approval of the PM_{2.5} redesignation request and SIP. He estimates that they will be approved this summer.

5.0 Designations under the 2008 Ozone NAAQS

Mr. Leslie reported that U.S. EPA accepted the 2011 emissions data certified by the state and issued a revised 120-day letter outlining the intent to declare the Greater Chicago area, including portions of Northwest Indiana (Lake, Porter and part of Jasper Counties) and Southeast Wisconsin (Kenosha County) in non-attainment of the 2008 Ozone NAAQS.

Wisconsin has submitted their certified data for 2011 as well; there was a violation in Kenosha County. Northwest Indiana has clean data for 2011.

Mr. Leslie noted that Kenosha County does not have emission budgets and that the conformity analysis requirements would need to be determined.

6.0 TIP Conformity Amendment

6.1 Public Comment Period

Mr. Patronsky reported that the semi-annual conformity amendment is scheduled to be considered by the CMAP Board and MPO Policy Committee in March, 2012. The amendment was released for public comment at the Transportation Committee meeting on January 20, 2012 and tentatively recommended to the CMAP Board and MPO Policy Committee by the Regional Coordinating Committee on February 8, 2012. To date, no comments have been received.

The question of the appropriate year motor vehicle emissions budgets to use in the next conformity determination was raised. Currently, MOBILE6.2-based VOC and NO_x budgets for the 8-hour ozone standard for the years 2009 and 2020 have been determined "Adequate" by USEPA and should be being used in conformity determinations. For the annual PM_{2.5} standard, the 2002 Base Year PM_{2.5} and NO_x emissions interim budget are what should be used for conformity determinations.

However, in the Federal Register dated February 9, 2012, USEPA proposed to approve the 1997 8-hour ozone maintenance plan which contained year 2008 and 2025 VOC and NOx budgets which were generated using the MOVES model. The comment period for this proposal extends through March 12, 2012. Although the USEPA held an adequacy comment period for these budgets which expired on October 26, 2011, they have not been formally determined adequate. Barring a significant negative comment, these are the budget years for the 8-hour ozone standard that we will have to use in the next conformity determination.

Regarding the annual PM_{2.5} standard, the USEPA has not yet proposed to approve the Maintenance Plan IEPA submitted last September. They did conduct a similar and concurrent adequacy review for the Plan's proposed MOVES-based 2008 and 2025 annual PM_{2.5} emissions budgets. Those budgets have not yet been found adequate.

6.2 Network Corrections

Mr. Patrosky reported that five projects noted in the agenda have been included in the travel demand model for the current conformity analysis; one noted project was removed.

6.3 Model Updates

Mr. Patrosky reported that 2010 census data and toll increases have been included in the travel model, and that Metra fare increases would be included for the fall semi-annual conformity analysis.

7.0 Conformity for Construction on Red and Purple Lines

Mr. Arkell reported that a Notice of Intent to prepare an EIS for the Red and Purple Lines was issued approximately one year ago, and that there are station rehabilitation projects occurring on these lines now. He noted that FTA Environmental Specialists were assisting the CTA with air quality impact determination. Mr. Patrosky noted conformity-related portions of the Code of Federal Regulations that may apply to the project. These were discussed with Jacobs Engineering via the email contained in the agenda materials. Mr. Leslie and Mr. Rogers concurred with the conclusions in the email that the Illinois SIP does not contain any PM control measures that apply to the projects and that fugitive dust from construction is not a significant contributor to nonattainment.

8.0 CREATE Passenger Rail Projects

8.1 Projects of Air Quality Concern

Mr. Zyzniewski stated that the methodology for determining if CREATE Passenger Rail projects are "projects of air quality concern" was approved on November 27, 2007. He stated that although the use of MOVES at the project level is not required until December of 2012, a county-level analysis for Cook County was performed and deemed to be the worst case scenario for emissions, and requested concurrence on the use of MOVES model as part of the methodology. The team concurred on the approach used, but requested

further discussion between IEPA, USEPA, CMAP, and IDOT on the input values to be used with MOVES.

8.2 Emission Factors

Mr. Zyzniewski requested concurrence on the use of NONROAD 2005 emission factors. Mr. Rogers stated that since the 2005 factors were higher than the 2008 factors, this worst case approach is protective of the air quality standard. The team concurred with this approach.

9.0 CREATE Argo Connections/Clearing Main Lines Project (B9/EW1)

Mr. Zyzniewski noted that the NO_x analysis resulted in a design year change in emissions that exceeded the allowable change threshold, but that additional analysis that included equipment upgrades and operational polices demonstrated that the change threshold was not exceeded. Mr. McCann distributed a handout summarizing the effects of these upgrades and policies and briefly reviewed the summary. Mr. Leslie noted that this approach satisfies the intent of the general conformity process and Mr. Rogers stated that this analysis demonstrates the benefits of new switching engines and the regional impact of CREATE projects of this type and may be applicable to projects in other rail yards. Representatives of the railroads noted plans for similar projects in their yard. On a motion by Mr. Leslie, seconded by Mr. Rogers, the team concurred with the results of the NO_x analysis for the B9/EW1 CREATE projects.

10.0 Transportation Conformity Particulate Matter Hot-Spot Air Quality Modeling

Mr. Zyzniewski reported that the technical review panel will be convened in the coming weeks to review CAL3QHC modeling. Mr. Patronsky noted that the issue of urban versus rural remains unresolved.

11.0 Major Capital Project Updates

Ms. Bozic invited updates to the status included in the meeting materials. None were noted.

12.0 TIP Amendment Between Transportation Committee Meetings

Mr. Pitstick reported that updates to include 2012 funding for three JARC/New Freedom projects were not considered as TIP Amendments at the January 20th Transportation Committee meeting and that these projects were proceeding and it would be beneficial to have the 2012 funding included in the TIP prior to the next Transportation Committee meeting in order to process the FTA grant. Ms. Berry noted that the projects do not require conformity and are already included in RTA's program and that the Transportation Committee would be informed of the Amendments at their next meeting. The team approved the TIP Amendments.

13.0 Other Business

None.

14.0 Public Comment

None.

15.0 Next Meeting

The next meeting is on call.

16.0 Adjournment

The meeting adjourned at 12:04 p.m.

Tier II Consultation Team Members:

	CMAP		FHWA		FTA		IDOT
	IEPA		RTA		USEPA		

DRAFT

PARTICULATE MATTER EMISSION FACTORS USING MOVES REGIONAL SCALE OF ANALYSIS

*Prepared by,
Suriya Vallamsundar and Jane Lin
University of Illinois at Chicago
Date: 03/10/12*

Table 1 shows the RunSpec generic parameters used for MOVES regional scale analysis

TABLE 1 MOVES RunSpec Parameters

Data Item	Description
Geographic location	Cook County, IL
Scenario Year	2029
Time Period	All 12 months
Pollutant	PM2.5
Emission Process	Running exhaust, crankcase running exhaust, break wear and tire wear
Vehicle- Fuel Combination	Diesel powered all MOVES vehicle types
Road Types	Both restricted and unrestricted road types
Scale of analysis	County

Table 2 shows the local specific input data used for MOVES regional scale analysis.

TABLE 2 MOVES Local Specific Input Parameters

Data item	Description	Source
Vehicle Type VMT	Annual vehicle miles traveled by HPMS vehicle class for the year and geographic area being modeled	In this case, vehicle type VMT for Cook County was obtained from the travel statistics from Highway Performance Monitoring System (HPMS) for calendar year 2009. VMT distribution for calendar year 2029 was obtained using the growth factors from 2009 to 2029. The same percentage was applied to all vehicle types as individual growth factors by vehicle types were not available.
Source Type Population	The number of vehicles in the geographic area being modeled for each vehicle type such as passenger cars, passenger trucks etc	EPA converters to convert data from MOBILE format into MOVES compatible format were utilized for generating source type population based on vehicle type VMT.

Average Speed Distribution	The average speed data specific to vehicle type and road type and time of day/ type of data for geographic area being modeled	VMT distribution by speed bin for Freeways and Arterials by hour for the Chicago area for year 2007 was obtained from IL EPA for PM Hot-Spot Transportation Conformity Project. The same data was utilized for calendar year 2029 assuming there will a little significant change in future fractions. Due to lack of data, same speed-VMT fractions are used for urban and rural types. EPA converters were utilized to convert this data in MOBILE format into MOVES compatible format.
Road Type Distribution	The fraction of VMT by road type for the geographic area being modeled	EPA converters were utilized for generating road type distribution based on vehicle type VMT.
Source Type Age Distribution	Vehicle age distribution	Registration distribution for the Chicago area for year 2008 was obtained from IL EPA for PM Hot-Spot project. The same data was utilized for calendar year 2029 assuming there will a little significant change in future fractions. EPA converters were utilized to convert this data in MOBILE format into MOVES compatible format.

Meteorology	Temperature and humidity	Hourly temperature and relative humidity values were obtained from IL EPA in AERMET format and was extracted to be used for MOVES.
Fuel Supply	Fuel supply parameters and associated market share for each fuel	MOVES default fuel data was used with changes made to Reid Vapor Pressure, Sulfur content based on local data. Local data for Cook county was obtained from IL EPA.
I/M Program	Inspection-maintenance program parameters	Local IM data from IL EPA

Table 3 describes the files attached

TABLE 3 List of files attached

Input File Name	Description
Consolidated_inputs.xls	This file has all inputs used for MOVES regional scale.
Cook_CountyPM_allmonths_detailedoutput.xls	MOVES output by road type, vehicle type and emission process.
Cook_CountyPM_allmonths_detailedoutput.xls	MOVES output by road type, vehicle type.

3.9.2.2 PM_{2.5} Hot-Spot Analysis

Project-level conformity must be established for projects located in a PM_{2.5} nonattainment area. A hot-spot analysis is required in PM_{2.5} and PM₁₀ nonattainment or maintenance areas for projects that are determined as project of air quality concern (40 CFR 93.123[b][1]). A PM_{2.5} hot-spot analysis was performed using the latest emission factor model and procedures outlined in the memorandum, "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas" (USEPA, 2010a) to estimate annual PM_{2.5} concentrations in the project area. A hot-spot analysis is only required for the pollutants and averaging periods for which the area is in nonattainment. In this case, only annual PM_{2.5} was evaluated because the project is located in the DuPage County and Cook County annual PM_{2.5} nonattainment areas.

The USEPA published the Quantitative PM Hot-spot Guidance and announced the approval of USEPA's Motor Vehicle Emission Simulator (MOVES) for hot-spot analyses in the Federal Register notice on December 20, 2010, which also started a two-year conformity grace period to implement the quantitative methodology using MOVES. Air quality analyses that start within the grace period are not required to perform a quantitative analysis, and a qualitative analysis is acceptable. This project was discussed during an interagency consultation meeting on September 10, 2010 (CMAP, 2010a), where it was determined by the group to be a project of air quality concern. In anticipation of the release of final guidance, it was also determined that the PM_{2.5} hot-spot analysis would be completed quantitatively.

Overview of the Analysis

The technical details of the PM hot-spot analysis, Mobile Source Air Toxic (MSAT) analysis, and greenhouse gas emissions estimates are included as Appendix I. The following sections summarize the methodology and results.

The dispersion modeling technique in the project area was USEPA's CAL3QHCR model and emission factors from USEPA's MOVES model. Model inputs were selected according to guidance (USEPA, 2010a). MOVES inputs incorporated local registration mix and fuel data provided by IEPA that are consistent with the regional emissions analyses for conformity determinations in the Transportation Improvement Program (TIP) and Plan. Other CAL3QHCR model inputs include local meteorological data and traffic data specific to each roadway section. Details regarding inputs are included in Appendix I.

The PM hot-spot analyses examine the air quality impacts for the relevant PM NAAQS in the areas substantially affected by the project. Hot-spot analyses typically include the entire project; however, since this project is so expansive, the PM hot-spot analysis focuses on the locations with the highest likelihood of new or worsened PM NAAQS violations. If conformity is demonstrated at these locations, then it will be extrapolated that conformity is met in the entire project area. This is consistent with Section 3.3.2 of the quantitative hot-spot modeling guidance (USEPA, 2010a).

Through consultation with the Illinois Interagency Workgroup on February 25, 2011, four locations were chosen to represent the locations expected to have the highest air quality concentrations, as a result of high projected traffic volumes and sensitive receptor locations. Interchanges were chosen for analysis because they have the highest traffic volumes concentrated in a given area.

The four locations modeled for the PM_{2.5} hot-spot analysis were:

- Elgin O'Hare and West Bypass corridors
- Elgin O'Hare corridor and I-290
- Elgin O'Hare corridor and Roselle Road
- West Bypass corridor and I-90

It was determined that the concentrations of PM_{2.5} would be evaluated at all four locations for both the Build Alternative and the No-Build Alternative. Section 2.8 of the quantitative hot-spot modeling guidance indicates that if a project is being developed in two stages and the entire two-stage project is being approved, two analysis years should be modeled: one to examine the impacts of the first stage of the project and another to examine the impacts of the completed project (USEPA, 2010a). Because this project is being constructed in two phases, analyses were conducted for 2030 (i.e., after the initial construction phase would be completed), and 2040 (i.e., after construction of the entire project would be completed). The initial construction phase would include improvements for the entire project corridor, but with fewer travel lanes and reduced interchanges. The 2030 interim year represents the year of peak capacity after the initial construction phase would be complete, and it was modeled because it was likely to produce the peak emissions associated with that phase. The PM hot-spot analyses included only directly emitted PM_{2.5} emissions. PM_{2.5} precursors are not considered in PM hot-spot analyses, since precursors take time at the regional level to form into secondary PM. Exhaust, brake wear, and tire wear emissions from on-road vehicles are always included in a project's PM_{2.5}. For this analysis, only running exhaust was considered because start exhaust is unlikely to occur on the roadways included in the model domain.

Re-entrained road dust was not included because the SIP does not identify that such emissions are a significant contributor to the PM_{2.5} air quality in the nonattainment area. Emissions from construction-related activities were not included because they are considered temporary, as defined in 40 CFR 93.123(c)(5) (i.e., emissions that occur only during the construction phase and last five years or less at any individual site).

Model output was used to determine a design value, which is a statistic that describes a future air quality concentration in the project that can be compared to a particular NAAQS. The design value was determined by combining modeled PM_{2.5} concentrations from the project and a representative monitored background PM_{2.5} concentration provided by IEPA. Refer to Appendix I for details on how the model results were used to determine the appropriate value to use in the design value.

Background concentrations representing the cumulative PM_{2.5} emissions of other sources in the area were added into the predicted local concentrations for PM_{2.5} emissions at locations where the general public could have extended access. Because of this inclusive analysis methodology, the forecast impacts represent cumulative air quality impacts.

This total concentration was compared to the annual PM_{2.5} NAAQS of 15 µg/m³.

Results

The 1997 annual PM_{2.5} design value is currently defined as the average of three consecutive years' annual averages, each estimated using equally-weighted quarterly averages. This NAAQS is met when the three-year average concentration is less than or equal to the 1997 annual PM_{2.5} NAAQS (15.0 µg/m³).

The receptor with maximum annual average PM_{2.5} concentration was identified for each model run for each year of meteorological data, and the associated design value was determined for comparison to the NAAQS. The annual PM_{2.5} design value for the receptor with the maximum concentration for each scenario is presented in Table 3-23. PM_{2.5} concentrations ranged from 13.2 µg/m³ to 13.8 µg/m³ for the 2040 No-Build Alternative and 13.4 µg/m³ to 14.0 µg/m³ for the 2040 Build Alternative. The annual concentrations of PM_{2.5} for the 2030 interim year ranged from 13.4 µg/m³ to 13.8 µg/m³.

TABLE 3-23 Annual PM _{2.5} Design Value Concentrations in µg/m ³			
Location	2040 Build Alternative	2040 No-Build Alternative	2030 Interim Year
Elgin O'Hare and West Bypass corridors	14.0	13.2	13.8
Elgin O'Hare corridor and I-290	13.5	13.8	13.6
Elgin O'Hare corridor and Roselle Road	13.4	13.4	13.4
West Bypass corridor and I-90	13.6	13.8	13.8

Notes: All concentrations include background concentration of 13 µg/m³; Annual PM_{2.5} NAAQS is 15 µg/m³; µg/m³ = micrograms per cubic meter. Concentrations are for the receptor with highest concentration for each scenario.

The results of the analysis show that the modeled localized PM_{2.5} concentrations do not exceed the annual PM_{2.5} NAAQS for the Build Alternative, No-Build Alternative, or 2030 interim year of the Build Alternative.

The local hot-spot analysis demonstrates that the project would not:

- Cause or contribute to a new violation of any air quality standards in any area;
- Increase the severity or frequency of an existing violation of any standard in any area;
- Delay timely attainment of any standard, required interim emission reductions, or milestones in any area.