

Survey Introduction

intro

Welcome and thank you for your participation!

The development of the Motor Vehicle Emission Simulator (MOVES) model creates a new era in mobile source modeling that brings with it a host of technical challenges for state Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs).

Current US Environmental Protection Agency (EPA) regulations require that MOVES be used to conduct project-level (i.e. “hotspot”) conformity analyses started after December 20, 2012, with associated air emissions dispersion patterns being modeled using either AERMOD or CAL3QHC/R. EPA regulations also require that MOVES be used for regional conformity analysis beginning on March 2, 2013. The relatively recent introduction of these new modeling tools, and their near term deadlines, puts a severe strain on both the human and financial resources of transportation planning agencies still experiencing negative effects from the recent economic downturn.

FHWA has been closely involved in developing technical tools and fostering the capacity for conducting transportation-related air quality analyses. In seeking to better serve its customer base professionals at MPOs, COGs and State DOTs, FHWA is conducting this survey to learn more about the following:

1. The modeling tools currently being used to conduct air quality analyses, with special emphasis on transportation conformity analyses.
2. The technical successes, and challenges agencies experience in conducting transportation-related air quality analyses.
3. Suggestions for the development of new tools, training and technical support to assist our customer base in conducting transportation based air quality analyses.

FHWA will use the results of this survey to identify and develop the tools and technical support that agencies find to be the most useful for easing the transition to these new modeling tools and thereby help improve the capabilities of its customer agencies. The survey will also facilitate the development of new training programs designed to improve agency capacity for conducting on-road transportation based air quality studies.

Your responses will represent the experiences, needs and recommendations of you agency. Thank you again for your participation.

Please email MOVES@rsgsurvey.com with any questions or concerns.

Agency/Region Background Info

Agency Type

What type of agency do you work for (or represent)?

1. MPO (Metropolitan Planning Organization) / COG (Council of Governments)
2. State DOT
3. State agency involved with regulating air quality
4. Regional agency involved with regulating air quality
5. Other, please specify:

California

Does your agency serve the state of California?

1. Yes
2. No

Area Population [if agency = 1,4,5]

What population is served by your agency?

1. Less than 200,000 people
2. 200,000-500,000 people
3. 500,000-1,000,000 people
4. 1,000,000-2,500,000 people
5. More than 2,500,000 people

Analysis Purpose

What types of mobile emissions analysis does your agency perform?

Please select all that apply.

1. Analysis to determine conformity with the State Implementation Plan (SIP) under USEPA's transportation conformity regulation
2. Analysis to determine the air emissions impacts of a regional transportation strategy (e.g., Transportation Improvement Plan, Corridor Management Plan, etc.)
3. Analysis to determine project-level emissions impacts for a conformity determination (e.g., hotspot analysis of CO, PM)
4. Analysis to determine project-level emissions impacts for purposes other than a conformity determination (e.g., NEPA, Mobile Source Air Toxics (MSAT))
5. Analysis to determine transportation-related greenhouse gas emissions
6. Analysis of a policy or legislation related to mobile emissions
7. Other, please specify:
8. None of the above

RoleRegional [if analysis = 1]

What is your agency's role in demonstrating regional transportation conformity?

1. Lead agency
2. Support agency
3. Review agency

RoleProject [if analysis = 3]

What is your agency's role in demonstrating project-level transportation conformity?

1. Lead agency
2. Support agency
3. Review agency

Status

For which of the following pollutants is some or all of your <region/state> in nonattainment or maintenance?

Please select all that apply.

1. CO (1 hr)
2. CO (8 hr)
3. Ozone (8 hr)
4. NO₂ (1 hr)
5. NO₂ (annual)
6. PM_{2.5} (daily)
7. PM_{2.5} (annual)
8. PM₁₀ (daily)
9. None of the above (All of my <region/state> is in attainment or unclassifiable)

Multi-Jurisdictional Area [if region/state is in nonattainment/maintenance for any pollutants]

Are any nonattainment or maintenance areas in your <region/state> part of a multi-jurisdictional area?

[Please click here to review the different types of multi-jurisdictional areas.](#)

Yes

No

Multi-Jurisdictional Type [if nonattainment or maintenance areas are part of a multi-jurisdictional area]

What type(s) of multi-jurisdictional nonattainment or maintenance areas exist within your <region/state>?

Please select all that apply.



A nonattainment or maintenance area that is...

1. Single MPO, single state, with donut area
2. Single MPO, multi-state, with no donut area
3. Single MPO, multi-state, with donut area
4. Multi-MPO, single state, with no donut area
5. Multi-MPO, single state, with donut area
6. Multi-MPO, multi-state, with no donut area
7. Multi-MPO, multi-state, with donut area

Budget

Does your agency have an approved or adequate Motor Vehicle Emissions Budget (MVEB) for each of the following pollutants?

	Yes	No	I don't know
CO (1 hr)			
CO (8 hr)			
Ozone (8 hr)			
NO2 (1 hr)			
NO2 (annual)			
PM _{2.5} (daily)			
PM _{2.5} (annual)			
PM ₁₀ (daily)			

Air Models

Air Models

For the following questions, we will ask about the various models and technologies that your agency uses.

What mobile emissions models and/or air dispersion models does your agency use for transportation-related air quality analysis?

Please select all that apply.

Mobile Emissions Models

1. MOVES
2. MOBILE6.X (e.g. MOBILE6.2, etc.)
3. Earlier version of MOBILE
4. [if California] EMFAC2007 and/or EMFAC2011
5. Other, please specify:
6. None of the above

Air Dispersion Models

1. AERMOD
2. BLP (Buoyant Line and Point Source Model)
3. CAL3QHC/CAL3QHCR
4. CALINE3
5. CALINE4
6. CALPUFF
7. CMAQ (Community Multi-scale Air Quality model)
8. CDTMPLUS (Complex Terrain Dispersion Model)
9. HYROAD
10. OCD (Offshore and Coastal Dispersion Model)
11. Other, please specify:
12. None of the above

Not MOVES [if uses a mobile emissions model but does not use MOVES]

[if not California]

In March of 2010, the EPA announced the release of the MOVES2010a. MOVES2010b was released in June 2012. In December 2012, EPA will require that MOVES be used for project-level conformity for CO and PM. In March 2013, EPA will require that MOVES be used for regional-level conformity analysis.

What are your agency's plans regarding the use of MOVES?

[if California]

What are your agency's plans regarding the use of EMFAC2011?

1. Agency currently transitioning to <MOVES/EMFAC2011>
2. Agency will transition to <MOVES/EMFAC2011> but has not yet started
3. Agency does not plan to use <MOVES/EMFAC2011>
4. I don't know

AERMOD [*if uses and air dispersion model but does not use AERMOD*]

What are your agency's plans regarding the use of AERMOD?

1. Agency currently transitioning to AERMOD
2. Agency will transition to AERMOD but has not yet started
3. Agency does not plan to use AERMOD
4. I don't know

Mobile Emissions Models & Tools

[This section is only shown to agencies using a mobile emissions model]

MOVES and other mobile emissions models require traffic activity input data. Different types of models can be used to assign traffic activity to a road or road network.

TrafficModels

What types of traffic assignment does your modeling system use?

Macro-scale assignment (regional travel demand modeling)

Meso-scale assignment

Micro-scale assignment (microsimulation)

Sketch planning

Other, please specify:

What period of traffic demand is being assigned?

24-hour (daily)

Period model (e.g. multiple multi-hour periods) summing up to a day

Hourly model (e.g. PM peak hour, design hour hour)

[if uses other traffic activity model] Other model

Mobile Emissions Model Inputs 1

Developing and using inputs (pre-processors) is essential to linking traffic activity models to mobile emissions models. Above, we asked about the sources of traffic activity data inputs.

What other data sources do you use as inputs to <MOVES/EMFAC/your agency's mobile emissions model>?

Please select all that apply.

1. [if use MOVES/EMFAC] <MOVES/EMFAC> default inputs
2. Highway Performance Monitoring System (HPMS)
3. Highway Capacity Manual (HCM) methods
4. Locally or regionally collected data (e.g. vehicle registration data)
5. Vehicle sampling and portable activity monitoring systems (PAMS) instrumentation
6. Vendor data (e.g. cell phone and GPS data)
7. Other, please specify:
8. I don't know
9. None of the above

Mobile Emissions Model Inputs 2 [if uses locally or regionally collected data or vendor data]

Please describe the locally and/or regionally collected that you use as inputs to <MOVES/EMFAC/your agency's mobile emissions model>

[open-end text box]

Please describe the vendor data you use as inputs to <MOVES/EMFAC/your agency's mobile emissions model>

[open-end text box]

Mobile Emissions Model PreProcessors

What pre-processor tools do you use to develop inputs to <MOVES/EMFAC/your agency's mobile emissions model>?

Please select all that apply.

[if MOVES] **EPA developed pre-processors:**

1. Retrofit Converter (Excel)
2. Average Speed Converters
3. Registration Distribution Converter
4. Meteorological Converter
5. VMT Converter

Non-EPA developed Excel spreadsheet tool(s)

1. Custom scripts, please describe:
2. Custom software, please describe:
3. Other tool(s), please describe:

Mobile Emissions Model PostProcessors

What post-processor tools do you use to analyze or review the outputs from <MOVES/EMFAC/your agency's mobile emissions model>?

EPA developed post processor scripts

PM25

PM10

CO

SMOKE

Excel spreadsheet tool, please describe:

Code-based (Python, R, etc) tool, please describe:

Other tool, please describe:

Air Dispersion Models & Tools

[This section is only shown to agencies using an air dispersion model]

Air Dispersion Model Inputs

What data sources do you use as inputs to <AERMOD/your agency's air dispersion analysis>?

Please select all that apply.

Meteorological data

1. On site project data
2. Nearest airport data
3. Other, please specify:

Emissions data (emission factors)

1. MOVES
2. MOBILE
3. EMFAC
4. Other, please specify:

Traffic data

1. Traffic Modeling
2. Traffic Counts and/or Projections
3. Other, please specify:

Air Dispersion Model PreProcessors

Please describe any pre-processor tools that you use to develop inputs to <AERMOD/your agency's air dispersion model>?

[open-end text box]

Air Dispersion Model PostProcessors

Please describe any post-processor tools that you use to analyze or review the outputs from <AERMOD/your agency's air dispersion model>?

[open-end text box]

Agency Capacity/Expertise

[This section is only shown to agencies using a mobile emissions or air dispersion model]

Consultant Use

Many agencies engage an outside expert or consultant whose primary responsibility is conducting transportation-related air quality analysis for the agency.

Approximately what percentage of your agency's transportation-related air quality analysis is conducted in-house at your agency?

	Outside contractor/consultant conducts all analysis				Agency conducts all analysis	N/A
	0%	25%	50%	75%	100%	
Regional conformity-related analysis						
Project-level conformity analysis						
Other transportation-related air quality analysis (NEPA, Corridor Management Planning, GHG, etc.)						

AQ Staff

[if entire region is in attainment for all pollutants]

How many people regularly conduct transportation-related air quality analysis at your agency?

Number of people (including yourself) at your agency: _____

[if some or all of region is in non-attainment/maintenance]

How many people regularly conduct conformity-related transportation-related air quality analysis at your agency?

Number of people (including yourself) at your agency: _____

AQ Staff Rating

[if entire region is in attainment for all pollutants]

How would you rate your agency's current ability to conduct transportation-related air quality analysis?

1. 1 (Beginner)
2. 2
3. 3
4. 4
5. 5 (Expert)

[if some or all of region is in non-attainment/maintenance]

How would you rate your agency's current ability to conduct conformity-related transportation-related air quality analysis?

1. 1 (Beginner)
2. 2
3. 3
4. 4
5. 5 (Expert)

Consultant Rating

[if entire region is in attainment for all pollutants]

How would you rate your experience with outside contractor/consultant's current ability to conduct transportation-related air quality analysis?

1. 1 (Needs substantial guidance and oversight)
2. 2
3. 3
4. 4
5. 5 (Highly independent and reliable)
6. Not applicable

[if some or all of region is in non-attainment/maintenance]

How would you rate your experience with outside contractor/consultant's current ability to conduct conformity-related transportation-related air quality analysis?

1. 1 (Needs substantial guidance and oversight)
2. 2
3. 3
4. 4
5. 5 (Highly independent and reliable)
6. Not applicable

MaxDiff

[Note: This entire section is ONLY shown to agencies that use MOVES]

Note: This set of questions (MaxDiff) serves to obtain quantitative information from respondents about the potential types of technical tools that would most help them use MOVES. MaxDiff will provide a raw utility for each statement and the relative/ranked importance among all statements. MaxDiff is a statistical method pioneered by Jordan Louviere in the early 1990s. MaxDiff questions force respondents to make choices between options and produce results that show the relative importance of the items being rated. This is useful because it avoids situations where respondents rate most or all statements as “important” making it more difficult to distinguish the most important statement. Instead, the raw utility of each MaxDiff statement is calculated allowing the analyst to examine the relative differences in importance among all statements.

Max Diff

[Note: Example question for illustrative purposes]

Next, you will see a series of 10 questions. For each question, you will see 4 improvements that would help your agency more efficiently and effectively use MOVES.

For each question, please choose the improvement that would be MOST USEFUL to your agency and also choose the improvement that would be LEAST USEFUL to your agency.

Max Diff1

Which of the following improvements that would help your agency more efficiently and effectively use MOVES would be MOST USEFUL to you and which would be LEAST USEFUL to you?

MOST USEFUL		LEAST USEFUL
€		€
€		€
€		€
€		€

Max Diff

Note: This is the full list of statements to be asked. Each statement is shown at least twice to the respondent. An experimental design is used to determine which four statements are shown in each question.

1. Faster model run times for MOVES
2. Instructions for how to represent alternative fuel vehicles and alternative fuels in MOVES
3. Provision of additional types of emission reduction strategies in MOVES
4. Increase the sensitivity of MOVES to possible decreases in vehicle starts due to improved transit service.

5. Faster release from FHWA/EPA of documentation about MOVES
6. More readily available data sets for those inputs for which MOVES does not have a default
7. A software tool for managing, saving and running several scenarios
8. Better support for batch processing, automation, and scripting
9. Better documentation on constructing input files
10. A software tool for constructing valid input files
11. Better availability of in-person training
12. Better availability of webinars or training videos
13. Better user documentation such as guides, tutorials, and examples in written format
14. Better technical documentation in written format
15. Training on how to effectively use MySQL
16. More guidance on how to conduct a project level analysis

MOVES/EMFAC Resources & Training

[This section is only shown to agencies conducting mobile emissions analysis]

Mobile Emissions Model Resources

Next, we will ask some questions to identify the types of technical tools and training programs that you think will be the most useful for conducting mobile emissions analysis.

[if using MOVES/EMFAC]

Which of the following would MOST help your agency to efficiently transition to and use MOVES <MOVES/EMFAC>?

1. Having more training for my agency's staff
2. Having more technical tools available to my agency's staff
3. Coordination of grace periods for development of motor vehicles emissions budgets (MVEB) and conformity

Note: Answer choices will be shown in random order.

Mobile Emissions Model Tech

What other technology, software, and/or technical tools (not shown in previous questions) would help your agency to more efficiently and effectively use <MOVES/EMFAC>?

The more detail you can provide the more helpful it will be for FHWA. Thank you.

[open-end text box]

Mobile Emissions Model Sites

Which of the following resources have you used?

Please select all that apply.

1. EPA MOVES web resource (<http://www.epa.gov/otaq/models/moves/index.htm>)
2. FHWA Resource Center for air quality (<http://www.fhwa.dot.gov/resourcecenter/teams/airquality/index.cfm>)
3. None of the above

Mobile Emissions Model Sites Rate [if uses EPA or FHWA site]

How useful have you found the following resources?

	Not useful at all				Extremely useful
	1	2	3	4	5
[if uses EPA site] EPA MOVES web resource					
[if uses FHWA site]					

FHWA Resource Center for air quality					
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Mobile Emissions Model Training

Have staff at your agency attended <MOVES/EMFAC> trainings or courses over the last year?

1. Yes
2. No

Mobile Emissions Model Courses *[if attended trainings]*

Regarding the <MOVES/EMFAC> trainings or courses that your agency's staff have attended in the past year...

Who or what organization conducted those trainings?

[open-end text box]

How would you rate those trainings?

[open-end text box]

Mobile Emissions Model Future

<MOVES/EMFAC> is constructed of a set of models and databases that involve a wide variety of processes and inputs (i.e., fuel types, engine types, vehicle fleet, meteorology, etc.)

What features of <MOVES/EMFAC> would you like to know more about?

[open-end text box]

AERMOD Resources & Training

[This section is only shown to agencies using or transitioning to AERMOD or conducting project-level mobile emissions analysis]

Air Dispersion Model Resources

Which of the following would MOST help your agency to more efficiently and effectively use AERMOD?

1. Having more training for my agency's staff
2. Having more technical tools available to my agency's staff

Note: Answer choices will be shown in random order.

Air Dispersion Model Training

Have staff at your agency attended AERMOD trainings or courses over the last year?

1. Yes
2. No

Air Dispersion Model Training2

Regarding the AERMOD trainings or courses that your agency's staff have attended in the past year...

Who or what organization conducted those trainings?

[open-end text box]

How would you rate those trainings?

[open-end text box]

Agency Background Information

role

What is your role at your agency?

[open-end text box]

memTime

Approximately how much of your time are you involved with transportation-related air quality analysis?

1. 100% (All of my time is involved with transportation-related air quality analysis)
2. 75%
3. 50%
4. 25%
5. 0% (None of my time is involved with transportation-related air quality analysis)

years

How many years have you been working at your agency?

1. Less than 1 year
2. 1-3 years
3. 3-5 years
4. 5-10 years
5. 10-20 years
6. More than 20 years

Call (Limited to nine or less)

Are you interested in participating in a follow-up call so we can ask more questions about your agency's transportation-related air quality analysis?

1. Yes, please specify preferred work phone number:
2. No

comment

Thank you again for your feedback.

If you have any final suggestions for FWHA or EPA please type them below.

[open-end text box]

end



Thank you for your participation. Your responses have been saved. You may now close your browser.