

# **AASHTO WEBINAR**

## **Practitioner's Handbook 18: Air Quality Analyses in the NEPA Process for Highway Projects**

March 6, 2017



# Today's Webinar

- Welcome
  - Melissa Savage, AASHTO
- Presentation: Addressing Air Quality Issues in the NEPA Process for Highway Projects
  - Bill Malley, Perkins Coie LLP
- Q&A with Panel
  - Cecilia Ho, FHWA
  - Tim Sexton, Minnesota DOT
  - Bill Malley (moderator)



# Center for Environmental Excellence



- Visit our website:  
<http://environment.transportation.org/>
- Use our resources:
  - Weekly Website Updates
  - Broadcast Emails
  - Practitioner's Handbooks
  - Climate Change Webinars
  - Programmatic Agreement Library
  - Case Law Database (CLUE)
    - Recently updated with 2016 cases



# Practitioner's Handbook Series

Print

## Products & Programs

### Practitioner's Handbooks

- 01 Maintaining a Project File and Preparing an Administrative Record for a NEPA Study (August 2016)
- 02 Responding to Comments on an Environmental Impact Statement (August 2016)
- 03 Managing the NEPA Process for Toll Lanes and Toll Roads (August 2016)
- 04 Tracking Compliance with Environmental Commitments/Use of Environmental Monitors
- 05 Utilizing Community Advisory Committees for NEPA Studies
- 06 Consulting Under Section 106 of the National Historic Preservation Act (August 2016)
- 07 Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects (August 2016)
- 08 Developing and Implementing an Environmental Management System in a State Department of Transportation (DOT)
- 09 Using the SAFETEA-LU Environmental Review Process (23 U.S.C. 139)
- 10 Using the Transportation Planning Process to Support the NEPA Process
- 11 Complying with Section 4(f) of the U.S. DOT Act
- 12 Assessing Indirect Effects and Cumulative Impacts under NEPA (August 2016)
- 13 Developing and Implementing a Stormwater Management Program in a Transportation Agency
- 14 Applying the Section 404(b)(1) Guidelines in Transportation Project Decision-Making (August 2016)
- 15 Preparing High-Quality NEPA Documents for Transportation Projects
- 16 Implementing Eco-Logical: Integrating Transportation Planning and Ecological Decision Making (October 2016)
- 17 Complying with Section 7 of the Endangered Species Act for Transportation Projects

- Goals of the handbooks:
  - Easy-to-read synthesis of requirements
  - Practical advice on how to comply
  - List of reference sources
- Topics covered:
  - NEPA and related environmental requirements
- Where to find them:
  - <http://www.environment.transportation.org>



# The Air Quality Practitioner's Handbook

- Authors:
  - Rich Denbow, Cambridge Systematics
  - Bill Malley, Perkins Coie LLP
- Work Group:
  - Cecilia Ho, FHWA
  - Victoria Martinez, FHWA
  - Karen Perritt, FHWA
  - Marilee Mortenson, Caltrans
  - Daniel Burgin, Kentucky Transportation Cabinet
  - Tim Sexton, Minnesota DOT
  - Michael Baker, Pennsylvania DOT
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# The Air Quality Practitioner's Handbook

- Target audience: NEPA practitioners – ‘generalists’
  - Air quality conformity specialists may also find it useful.
- Primer on topics an air quality analysis in a NEPA document may need to cover, including:
  - Criteria pollutants
  - Conformity determinations
  - Mobile source air toxics (MSATs)
  - Greenhouse gas (GHG) emissions
- Practical tips on:
  - Deciding what issues to cover in the air quality analysis
  - Coordinating NEPA with conformity
  - What to look for when reviewing an air quality analysis
  - Considering air quality issues after completion of NEPA



# Caveats

- What the handbook is not ...
  - Not agency guidance
  - Not a detailed compliance manual
- Keep in mind:
  - Agency policies and interpretations may change
  - Court decisions, legislation, etc. could affect requirements
  - Always be sure to check federal agency regulations and guidance to ensure you have current information.



# Additional Information Sources

## ■ NEPA

- FHWA NEPA Technical Advisory

<https://www.environment.fhwa.dot.gov/guidebook/vol2/doc15d.pdf>

- FHWA MSAT interim guidance

[https://www.fhwa.dot.gov/environment/air\\_quality/air\\_toxics/](https://www.fhwa.dot.gov/environment/air_quality/air_toxics/)

- CEQ climate change guidance

[https://www.fhwa.dot.gov/environment/sustainability/resilience/policy\\_and\\_guidance/ghgnepa.cfm](https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/ghgnepa.cfm)

## ■ Transportation Conformity

- FHWA conformity resources

[https://www.fhwa.dot.gov/environment/air\\_quality/conformity/guide/](https://www.fhwa.dot.gov/environment/air_quality/conformity/guide/)

- EPA conformity resources

<https://www.epa.gov/state-and-local-transportation>





# **Presentation: Air Quality Analyses in the NEPA Process for Highway Projects**



# NEPA and Air Quality

## A Very Quick Review of Current Requirements and Practices



# Overview

- What does *NEPA* require in an air quality analysis?
- What are the basics of transportation conformity and how are those requirements met in the NEPA process?
- What are mobile source air toxics and how are they addressed in the NEPA process?
- Under the new CEQ guidance, how should greenhouse gas emissions be addressed in the NEPA process?



# NEPA Requirements for Air Quality Analysis

- NEPA '101' – NEPA requires ...
  - Comparative analysis of reasonably foreseeable direct, indirect, and cumulative effects of the alternatives
  - Documentation of compliance with other legal requirements
  - Public involvement and agency coordination
- For air quality, NEPA compliance may address:
  - 'Criteria pollutants' and air quality status of project area
  - Documentation of transportation conformity findings
  - Mobile source air toxics (MSATs)
  - Greenhouse gas (GHG) emissions
  - Construction emissions
  - Indirect/cumulative effects on air quality
  - Mitigation, if appropriate



# Transportation Conformity Requirements

- **Transportation Conformity ‘101’**
  - Prohibits federal agencies from funding, approving, supporting in any way projects that do not conform to States’ plans for achieving the National Ambient Air Quality Standards (NAAQS)
- **Key Concepts:**
  - NAAQS – established for six ‘criteria pollutants,’ four of which are associated with vehicle emissions: CO, PM, NO<sub>2</sub>, Ozone.
  - Nonattainment Area – area where NAAQS are not met
  - State Improvement Plan (SIP) – plan for achieving the NAAQS
  - Conformity Determination:
    - Regional: for a transportation plan or TIP in an MPO area
    - Project-Level: for an individual FHWA or FTA project
  - Exempt and non-exempt projects
    - Exempt: conformity does not apply (neutral/positive effect on AQ)
    - Non-Exempt: all other projects; conformity applies



# Regional Conformity

- When it's required:
  - Required in nonattainment and maintenance areas each time an MPO updates or amends a transportation plan or TIP
- What it involves:
  - Regional emissions analysis for all projects in a plan or TIP
  - Air quality conformity determination for the plan/TIP as a whole
    - Modeling shows total emissions within SIP's emissions budget
  - Fiscal constraint determination
    - Funding is 'reasonably available' for all projects in plan/TIP
- How long it takes:
  - Months-long lead time to allow for modeling, public involvement
- NEPA practitioners should know:
  - Project must be in conforming plan/TIP before NEPA completion



# Project-Level Conformity

- When it's required:
  - Required for all non-exempt projects in nonattainment and maintenance areas
  - Must be done prior to completion of NEPA for the project
- What it involves:
  - Regional conformity determination must have been made for the plan/TIP that includes the project
    - Project definition must be 'consistent in design concept and scope'
  - Hot-spot analysis also may be required
    - Required only for CO, PM2.5, PM10 nonattainment areas
    - Must demonstrate no localized exceedances of the NAAQS
- NEPA practitioners should know:
  - Plan/TIP may be need to be amended if project to be approved is not 'consistent in design concept & scope' with plan/TIP



# Mobile Source Air Toxics

- What are MSATs?
  - Seven pollutants associated with mobile sources (cars, trucks)
  - Believed to cause cancer or other serious health effects
  - Not criteria pollutants, therefore not subject to conformity
- How did they become a NEPA issue?
  - Lawsuits challenging FHWA NEPA docs for failing to consider public health effects of air toxics on near-roadway populations
  - Solution = guidance to standardize MSAT analysis
- What the MSAT guidance requires:
  - If “no potential for meaningful effects” – analysis not required
  - If “low potential for meaningful effects” – qualitative analysis
  - If “higher potential for meaningful effects” – quantitative analysis
  - Discussion of unavailable/incomplete information regarding effects of MSATs on public health – per 40 CFR 1502.22





# Greenhouse Gas Emissions

- What are greenhouse gas (GHG) emissions?
  - CO<sub>2</sub> and other pollutants that contribute to global warming
  - CO<sub>2</sub> = 95% of transportation GHG emissions
  - Effects are not localized – global total is what matters
- Do GHG emissions need to be addressed in NEPA?
  - Case law mixed on this issue ... But August 2016 CEQ guidance calls for considering GHG emissions as part of NEPA process
- What does the CEQ guidance require?
  - *Qualitative or quantitative* analysis depending on ‘significance’ of GHG emissions (and no bright line for determining significance)
  - Use quantity of GHG emissions as ‘proxy’ for effects
  - Also requires consideration of effects of climate change



# Air Quality & NEPA: Odds and Ends

- NEPA Assignment
  - Conformity decision *can* be assigned to State DOT under CE assignment program (23 USC 326)
  - Conformity decision *cannot* be assigned to State DOT under 'full' NEPA assignment program (23 USC 327)
- Tiering
  - Project must be included in conforming plan/TIP by the completion of the Tier 2 (project-level document)
  - Required at Tier 1 if it includes a project-level approval
- Outside MPO Areas
  - Conformity applies in nonattainment and maintenance areas that are located outside MPO boundaries
    - Called 'donut areas' and 'isolated rural nonattainment areas'
  - Conformity decision made at the project level in these areas.



# Tips for Practitioners

How to Make Sure You've Covered the  
Bases in an Air Quality Analysis in a  
NEPA Document



# Overview

- Practical tips for:
  - 1) Determining what air quality issues need to be covered
  - 2) Determining whether a conformity determination is needed
  - 3) Coordinating NEPA and conformity determinations
  - 4) Reviewing an air quality analysis for sufficiency
  - 5) Preparing a hot-spot analysis
  - 6) Keeping air quality analysis current after NEPA completion
  - 7) What to include in an air quality technical report
  
- Issues to watch out for when preparing an air quality analysis for a highway project



# 1) What Air Quality Issues to Cover?

- **Determine the universe of issues to be covered and level of detail needed in the air quality analysis.**
- **Key issues:**
  - **Criteria pollutants**
    - Existing conditions and attainment status
    - Projected emissions with No Action and Action alternatives
  - **MSATs**
    - Which 'level' of review is required under MSAT guidance?
  - **GHGs**
    - Qualitative or quantitative analysis required under CEQ guidance?
  - **Construction emissions**
    - Analysis needed? If so, what level of detail?
  - **Indirect and cumulative impacts**
    - Any notable issues requiring discussion?



## 2) Is a Conformity Determination Needed?

- **Determine if a conformity determination is needed, and if so, for which pollutants.**
- **Key issues:**
  - **Is the project an 'exempt project'?**
    - If so, conformity does not apply.
  - **Is the project in a nonattainment or maintenance area?**
    - If so, for which specific pollutants?
    - Are there any *recent or anticipated changes* in area's status?
  - **Is the project included in the applicable Plan and TIP?**
    - If not, are there plans to include it? If so, when?
    - Are there any known *obstacles* to including it?
      - Fiscal constraint? Ability to meet emissions budget?
  - **Will the project require a hot-spot analysis (for CO or PM)?**



# 3) How to Fit Conformity Into NEPA Schedule?

- **Determine the *timing* of regional and project-level conformity determinations relative to NEPA schedule.**
- **Key issues:**
  - **MPO's schedule for plan/TIP approves**
    - What is MPO's schedule for plan/TIP updates, amendments?
    - When will project be amended into the plan/TIP?
    - How much lead time is needed for modeling etc.
  - **Inconsistencies in design concept and scope**
    - If project is already in plan/TIP, it is consistent in design concept and scope w/ project that is to be approved in NEPA?
    - If inconsistencies arise, when will plan/TIP amendment occur and how will it affect NEPA schedule?
  - **Other factors that could cause delay**
    - Changes in air quality status, new version of emissions model, etc.



# 4) How to Review an Air Quality Analysis?

- **Review the air quality analysis in the NEPA document for clarity, completeness, & consistency.**
- **Key issues:**
  - **Uses terminology correctly**
  - **Covers all relevant topics (or explains why not addressed)**
    - Criteria pollutants
    - MSATs
    - GHGs
  - **Explains choices regarding data, models, level of detail**
  - **Uses tables to present key data**
  - **Describes agency coordination, especially re: conformity.**
  - **Includes conformity findings – uses correct language**
  - **Avoids overstating air quality benefits**
  - **Include supporting data in appendices**





# 5) What's Needed in a Hot-Spot Analysis?

- **If hot-spot analysis is needed, ensure analysis closely follows applicable EPA regs and guidance.**
- **Key issues:**
  - **Required only for three pollutants: CO, PM2.5, PM10**
  - **May be qualitative or quantitative.**
    - CO: for certain congested intersections as defined in regs.
    - PM: 'projects of air quality concern' as defined in regs.
  - **Must use 'latest planning assumptions' & 'latest emissions model'**
  - **Must follow detailed requirements in EPA regs and guidance**
  - **No hot-spot analysis needed for CO if "categorical" CO hot-spot determination applies (only in CO maintenance areas).**
- **For additional information:**  
<https://www.epa.gov/state-and-local-transportation/project-level-conformity-and-hot-spot-analyses>



# 6) What to Consider after NEPA Completion?

- **Monitor changes in air quality status, conditions, and project impacts after NEPA is completed.**
- **Key issues:**
  - NEPA issue: Is there new info that requires a reevaluation of air quality impacts? Or even a supplemental EIS?
  - Conformity issue: Is a new conformity determination needed?  
Triggered by:
    - significant change in the project's design concept and scope;
    - three years since most recent major step to advance project; or
    - a supplemental NEPA document is initiated for air quality purposes.
  - Planning Issue: Is the MPO required to update its plan/TIP? (req'd every 4 years)
    - If so, new fiscal constraint and conformity determination needed.



# 7) What to Include in Air Quality Tech Report?

- **Use the air quality technical report to document methodology and provide supporting data.**
- **Key points:**
  - **Technical report typically should include:**
    - Description of methodology, including model versions used
    - Summary of traffic data used in analyses
    - Detail on air quality modeling analyses, including tables of results
    - Full documentation of project-level (hot-spot) analyses for EPA and/or for transportation conformity
    - Documentation of agency coordination relating to air quality, including meeting notes and correspondence where applicable.
  - **Maintain electronic copies of all supporting data and model runs in project files**



# Potential wrinkles and complications ...

- MPO changes the land use assumptions in its model
  - Conformity must be based on 'latest planning assumptions'
- New emissions model is released
  - Conformity must be based on 'latest emissions model'
- Project area is newly designated as nonattainment
  - Conformity requirements apply within 1 year after designation
- Changes made to project after being included in plan/TIP
  - Must ensure consistency in 'design concept and scope'
- Project located in proximity to sensitive populations
  - May need to address comments regarding potential 'health effects' of air MSATs on near-roadway populations
  - May warrant consideration of opportunities to avoid, minimize, mitigate



# Potential wrinkles and complications (cont'd)

- Project induces development that will itself have air quality impacts
  - May need to be address in indirect effects analysis
- Project area has other major emitters – e.g., power plant
  - May need to be address in cumulative impacts analysis
- Project changes or new information arises about air quality effects after NEPA has been completed
  - May require NEPA reevaluation and/or supplement
  - May require new conformity determination



# Q&A Panel

*We want your questions!*

Submit questions via text in the panel on your screen.



# Q&A Panel

- Panelists
  - Cecilia Ho, FHWA
  - Tim Sexton, Minnesota DOT
- Moderator:
  - Bill Malley, Perkins Coie LLP

