U.S. EPA Port Emissions Inventory Guidance Update

Kick-Off Webinar
December 13, 2018

Presented by:

United States Environmental Projection Agency
Office of Transportation and Air Quality
General Housekeeping

• Please use the Q&A pod within Adobe Connect to ask questions
  ➢ We will try to respond to as many as possible throughout the webinar
  ➢ There will also be time at the end of the presentation for questions

• Please direct any technical issues to: vangessel.benjamin@epa.gov
Purpose of Today’s Webinar

• Kick-off EPA’s update to the Port Emissions Inventory Guidance

• Answer questions and receive feedback that you may have about this update

• Today’s speakers are:
  ➢ Daniel Bizer-Cox
  ➢ Kathryn Dotzel
  ➢ Meg Patulski
  ➢ Ben VanGessel
Outline

• Background
• Approach and Scope of Update
• Anticipated Updates by Sector:
  ➢ Ocean going vessels
  ➢ Harbor craft
  ➢ Cargo handling equipment
  ➢ Onroad vehicles
  ➢ Rail
• Q & A
Background
Background

• EPA released “Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories” in 2009
  ➢ Available for download at: https://www.epa.gov/moves/current-methodologies-preparing-mobile-source-port-related-emission-inventories-final-report

• Describes methodologies used for preparation of a port-related emissions inventory across different port-related sectors:
  ➢ Ocean going vessels (OGVs)
  ➢ Harbor craft
  ➢ Cargo handling equipment (CHE)
  ➢ Rail
  ➢ Heavy-duty trucks
Background

• We have seen significant changes since 2009, such as:
  ➢ Improvements in computing
  ➢ New data sources (e.g. automatic identification system (AIS) data for marine activity)
  ➢ New EPA models (e.g. MOBILE → MOVES)

• Practical experience and lessons learned
  ➢ 2016: EPA’s National Port Strategy Assessment (NPSA)
  ➢ 2018: EPA-Port Everglades Partnership
  ➢ New and revised inventories at specific ports

• MSTRS Ports Initiative Workgroup
  ➢ 2016: Released final report of recommendations
National Port Strategy Assessment

• *National Port Strategy Assessment: Reducing Air Pollution and Greenhouse Gasses at U.S. Ports*

• Released September 22, 2016

• Available at: [www.epa.gov/ports-initiative/national-port-strategy-assessment](http://www.epa.gov/ports-initiative/national-port-strategy-assessment)
EPA-Port Everglades Partnership

- *EPA and Port Everglades Partnership: Emission Inventories and Reduction Strategies*

- Released June 1, 2018

MSTRS Ports Initiative Workgroup

• *Ports Initiative Workgroup Report* released in September 2016

• Recommendations included:
  ➢ EPA should develop emissions inventory guidance, assess the guidance periodically, and update the guidance as needed
  ➢ EPA should assist and encourage states to support port authorities and other port operators as needed to develop refined inventories of port-related operations
Goals of EPA’s Guidance Update

• Reflect new data sources and model availability
• Reflect lessons learned from practical experience
• Integrate MSTRS Workgroup recommendations
• Improve guidance document structure and usability
• Inform future inventory development across the U.S.
Current Schedule

• Public webinar – December 2018

• Public draft available on OTAQ’s website in mid-2019

• Final version available in fall 2019
Approach and Scope of Update
Approach and Scope

• Updated guidance will describe the latest, state-of-the-science methodologies used to prepare a port-related emissions inventory

• An effort will be made to account for differing levels of data availability in the inventory development process

• This guidance can be a technical resource for regulatory, voluntary, and research purposes
Approach and Scope

• Included mobile source groups:
  ➢ OGVs
  ➢ Harbor craft
  ➢ CHE
  ➢ Onroad vehicles
  ➢ Rail

• Intended audience:
  ➢ State and local governments
  ➢ Ports and port operators
  ➢ Port-related industries
  ➢ Tribes
  ➢ Communities
  ➢ Federal agencies
  ➢ Other stakeholders
Approach and Scope

• The updated technical guidance will...
  ➢ Support the development of baseline inventories of various scales:
    ▪ Project
    ▪ Terminal
    ▪ Sector
    ▪ Port
    ▪ Regional
    including:
    ▪ On-port
    ▪ Off-port
  ➢ Provide guidance on defining landside and waterside inventory boundaries
  ➢ Describe methodologies to project future emission inventories
Approach and Scope

• The updated guidance will not...
  ➢ Include detailed information on how to run various models and tools
    ▪ Instead, the guidance will cover what kind and sources of input data will be necessary to develop an inventory
    ▪ Will refer readers to other documents or guidance as appropriate (e.g., MOVES User Guide)
  ➢ Provide guidance on quantifying specific strategies for reducing emissions, e.g.,
    ▪ The National Port Strategy Assessment and Port Everglades Partnership documents cover this subject
    ▪ The Diesel Emissions Quantifier is another useful tool for ports
    ▪ See https://www.epa.gov/state-and-local-transportation/transportation-related-documents-state-and-local-transportation for additional resources
Draft Document Structure and Outline

1. Introduction
   • Background
   • Purpose of this Guidance
   • Organization of this Guidance
   • Additional Resources
   • Guidance and Existing Requirements

2. Planning a Port Emissions Inventory and Determining Scope
   • Purpose and Scope of Port Emission Inventories
   • General Inventory Approaches
   • Mobile Source Sectors
   • Pollutants of Concern
   • Geographic Boundaries
     ➢ Marine Boundary
     ➢ Land-side Boundary
   • Time Domains and Growth Factors

3. Ocean Going Vessels
4. Harbor Craft
5. Cargo Handling Equipment
6. Onroad Vehicles
7. Rail
Anticipated Updates by Sector
General Approach for Each Sector

- Source description
- Emissions estimation overview
- Fleet characteristics
- Vessel/equipment/vehicle activity
  - Operating modes
  - Data sources
  - Default operational profiles (where appropriate)
- Emission factors
- Differences in inventory calculations at various levels of detail, when needed
- Best practices
- Alternative approaches
- Projecting future emissions
Updates: OGVs

Current Guidance
• Data inputs include:
  ➢ Marine Exchange / Port Authority
  ➢ USACE Entrances and Clearances
  ➢ Pilot interviews
• Provides default assumptions for some kinds of activity data

Anticipated Updates
• Include information on using AIS data as the basis for the inventory
• Better specificity in kinds of vessel characteristic data are needed and how to match these to the AIS data
• Update default assumptions for activity data and emission factors
Updates: Harbor Craft

Current Guidance
• Survey harbor craft vessels operating in the area of interest for all required parameters and combine with default load factors and emission factors to develop the inventory

Anticipated Updates
• Include information on using AIS data as the basis for the inventory
• Update default assumptions for activity data and emission factors
Updates: CHE

Current Guidance
• Gather detailed information on all CHE at the port in question and estimate emissions using emission rates from EPA's stand-alone NONROAD model

• When port-specific data are unavailable, adopt values based on characteristics of similar ports and/or default assumptions

Anticipated Updates
• Use MOVES emission rates

• Update default assumptions for CHE characteristics
Updates: Onroad Vehicles

Current Guidance
• Combined with Rail section
• Uses MOBILE6.2 to estimate emissions
• Covers only heavy-duty trucks

Anticipated Updates
• Split into own section
• Use MOVES to estimate emissions
• Include passenger vehicles in addition to heavy-duty trucks
Updates: Rail

Current Guidance
• Combined with Onroad section

Anticipated Updates
• Split into own section
• Update default emission factors
• Include Liquified Natural Gas (LNG) locomotives
Questions and Answers

• Please use the Q&A pod within Adobe Connect to ask questions or provide feedback

• We are interested in knowing your thoughts on the proposed structure, approach, and scope of the updated guidance

• Are there other data sources generally available that could inform updates to source-specific guidance?

• If you have any additional follow-up questions or feedback, please email vangessel.benjamin@epa.gov