

# Update on NATA Lean Project

*Office of Air Quality Planning and Standards*

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2 JUNE, 2016

# Agenda

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- Summary of results from NATA Lean event
- Overview of NATA Lean event
- Process changes and benefits
- Schedule for 2014 NATA
- Upcoming activities
- Questions/discussion

# Project Summary

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NATA is EPA's ongoing comprehensive evaluation of air toxics in the United States. Customers and team members need a timelier product.

- Expected delivery date for NATA 2014 is Spring 2018.

High-level process improvements identified during event:

- Eliminate 9 months of lead time (30 percent reduction)
- Integrate protocol development into process
- Provide point source risks earlier
- Streamline and focus the review process
- Standardize comment format and process

# NATA Lean Team Photo



All OAQPS unless otherwise noted:

Back row (left to right):

James Thurman, Jeff Myers (WI), Mark Morris, Ted Palma, Rich Cook (OTAQ), Darcie Smith

Front row (left to right):

Sharon Phillips, Alison Eyth, Madeleine Strum, Alice Chow (R3)

# Lean Event Pre-work

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- **Gathered Information:** Met with customers (including S/L/T) and development team to identify needs
- **Defined Event Scope:** Complete, QA'ed version 1 of the 2014 National Emissions Inventory (NEI) through QA'ed risk numbers for the U.S., Puerto Rico & Virgin Islands
- **Outlined Boundary Conditions:** No internal state issues, budget issues, or development of NEI v1
- **Set Goals and Metrics:** Reduce lead times and process times for various steps by 30 percent; reduce errors, re-dos, and manual adjustments at end of process by 95 percent; improve timeliness of product delivery

# Lean Event Overview

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- Identified important information about NATA (e.g., provides comprehensive air toxics information)
- Mapped out current “as-is” process (2011 NATA)
- Identified wastes in process and potential solutions
- Determined root causes of wastes
- Mapped out future “to-be” process (2014 NATA) using potential solutions
- Estimated improvements in metrics
- Identified key process changes and benefits of the “to-be” process

# Current “As-Is” State (2011 NATA) Process Map





# Future “To-Be” State (2014 NATA) Process Map





# Process Changes Identified

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- Add methods improvement to beginning of process
  - Surrogates, model grid cells instead of tracts, denser met grid
- Develop documentation early and throughout process
  - Project management plan, NATA protocol, QA protocol
- Focus and reduce number of State reviews
  - Review earlier in process with more time
  - Prepare review guidance and standard format for comments
  - Increase Regional participation in all reviews
- Develop the geo-spatial visualization tools for data aggregation and community-level risk mapping
- Test high performance computing to decrease model run-time
- Overall process is 9 months shorter than 2011 NATA
  - Deliver in 21 months rather than 30 months

# Benefits of the Future State

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- Less lead time
- Improved methods
- Formal protocols before beginning
- More comprehensive, but fewer, state reviews with hard deadlines
- Improved coordination, communication, and working relationships

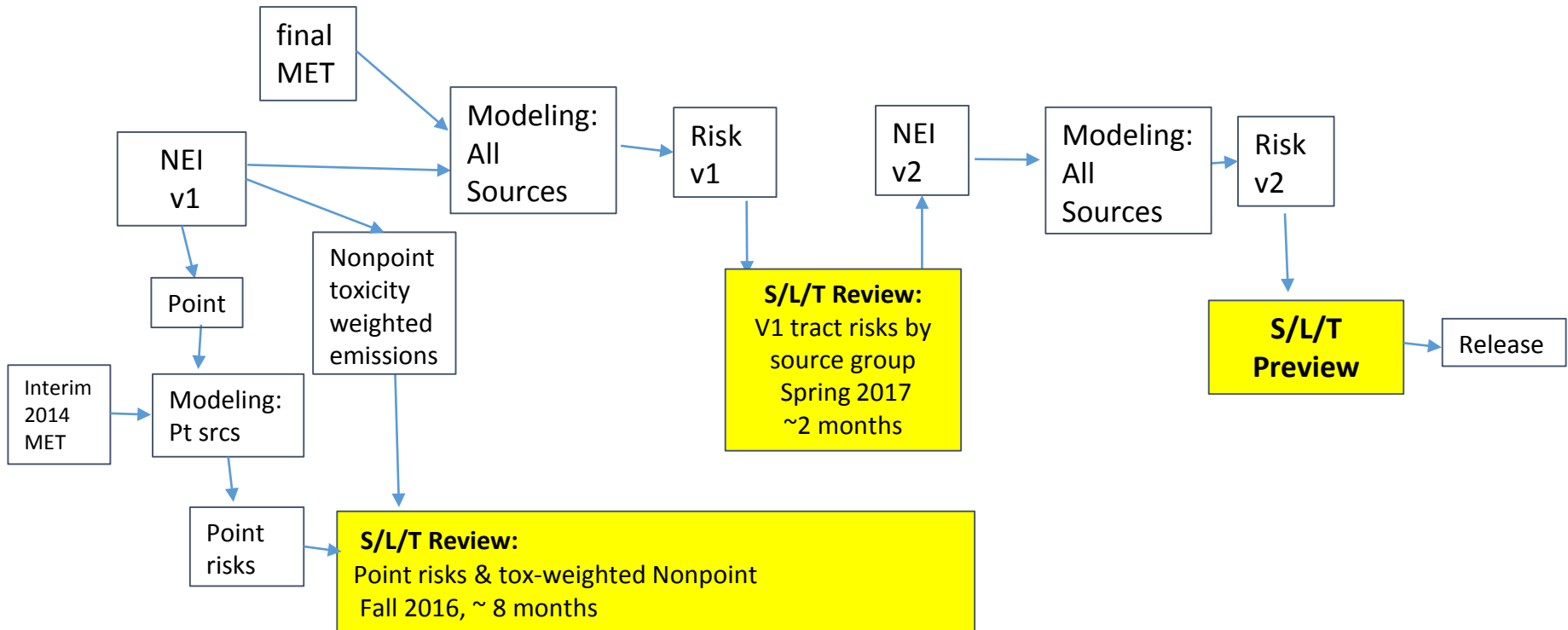
# Future State (2014 NATA) Process Flow Chart

Summer  
2016

Fall  
2016

Summer  
2017

Spring  
2018



# 2014 NATA Milestones

Target Date	Item
Fall 2016	Point source risks available
Fall 2016 to Spring 2017	S/L/T review of point source risks
Fall 2016	Nonpoint tox-weighted emissions available
Fall 2016 to Spring 2017	S/L/T review of nonpoint tox-weighted emissions
Spring 2017	NATA v1 risks (all sources) available
Spring to Summer 2017	S/L/T review of NATA v1
Fall 2017	2014 NEI v2 release
Early Winter 2018	S/L/T <i>preview</i> of NATA v2
Late Winter/ Early Spring 2018	2014 NATA Release

# Upcoming Activities

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- Design review specifications for S/L/T point risk and nonpoint tox-weighted emissions review (June)
- Do modeling/toxicity weighting (July)
- Webinar for review (Aug)
- S/L/T review of point source risks and nonpoint tox-weighted emissions (begins in Aug/Sep)

# Questions and Discussion

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# Appendix

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# 2014 NATA Implementation Plan: Next Steps

ACTION	OWNER	May_16	Jun_16	Jul_16	Aug_16
Select project coordinator(s)	Managers (Madeleine and Darcie)	█			
Set meeting time and frequency	Coordinator	█			
Funding estimates	Coordinator	█			
Design&Build SMOKE/AERMOD processor	Alison	█	█	█	
<b>Develop NATA protocol</b>	coordinator	█	█	█	█
Decide what new mobile methods get implemented for 2014 N	Rich	█	█		
Decide on whether to use same airport runway specs	Mark	█			
QA airport lat lons (NEI) vs runway specs	Mark	█			
Develop QA protocol	Coordinator	█	█	█	
Decide on receptor placement (blocks vs uniform)	James and Mark	█			
Evaluate nested grid for NP and mobile - GRID CELL SIZE	Alison	█	█		
Revise AERMOD run groups - Source characterization? (e.g., gri	James	█			
Decide on pollutants for Canada/Mexico and changes we made	Alison				█
Decide on approach for background for nonCMAQ HAPs	Madeleine	█			
Decide on boundary conditions for non-Geoschem pollutants	Sharon				█
Investigate temporal for sources	James	█	█		

# Lessons Learned

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- Large number of customers that use NATA product
- Better understanding of what customers do with NATA and what they need in the product
- States are okay with one primary review\*
- Recognize need to eliminate bottlenecks, and move key steps earlier in the process
- Many problems stem from handful of root causes
- Lean process can help break down complex issues into logical pieces

*\*Given extended time for v1 point review and more standardized method of providing comments*

# Longer Term Improvements Identified

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- Improve fine scale surrogates
  - Mobile, residential wood combustion
- Building downwash
- Multipollutant version of AERMOD
- Multipathway analysis
- Improve human activity data in HAPEM
- Better spatial characterization for point sources
  - Geo-location, property boundaries
- Integrate TRI and NEI
- Mandatory toxics reporting