



MOVES2014b Plans and Comparisons

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Outline

- MOVES2014b overview
- National MOVES2014a/b emission comparisons
- Next steps



MOVES2014b

- EPA plans a minor MOVES update for summer 2018: **MOVES2014b**
- This is a minor MOVES release that doesn't impact onroad inventories
 - No implications for transportation conformity
 - May be used in SIPs or other analyses as needed
- Improves our estimates of nonroad (NR) emissions
 - Updates growth, fuels, Tier 4 engine populations and emission rates
 - Not a comprehensive NR update—we are still working on that



Updates to Nonroad Growth Indices

As presented to Workgroup on 9/13/17:

- As a short-term measure in lieu of updating MOVES-NONROAD equipment populations, EPA refined the growth indices that are used to estimate equipment populations beyond the base year populations
- Projections of energy use, economic activity, human population, and equipment activity were matched with corresponding historical data to construct annual, state-level growth indices for each equipment category
- Draft growth indices result in a national-level decline in equipment populations in almost all equipment categories, particularly in future years
- But results vary by state and equipment sector



Updates for Tier 4 Engines

As presented to Workgroup on 12/6/2017:

- We updated inputs for nonroad diesel engines covered by the Tier 4 standards
 - Tighter standards for NMHC, NO_x & PM began phase-in in 2008
- We updated classifications, population splits, and emission rates based primarily on EPA certification emissions and projected sales data
- We account for the effect of different after-treatment configurations in order to enhance modeling detail
- This also allows pollutant speciation to vary with after-treatment configurations



Updates to Nonroad Diesel Sulfur Levels

- We corrected diesel sulfur levels to be consistent with the standards for Ultra Low Sulfur Diesel (ULSD) in years 2014+
- These updates will impact nonroad emissions for sulfate and PM

	MOVES2014a		MOVES2014b	
Year	Nonroad	Marine	Nonroad	Marine
2010	165	319	165	319
2011	32	236	32	236
2012	32	124	32	124
2013	32	44	32	44
2014	20	52	15	15
2015	11	56	15	15
2016	11	56	15	15
2017	11	56	15	15
2018+	11	55	15	15



COMPARISON RESULTS: MOVES2014a VS. MOVES2012b

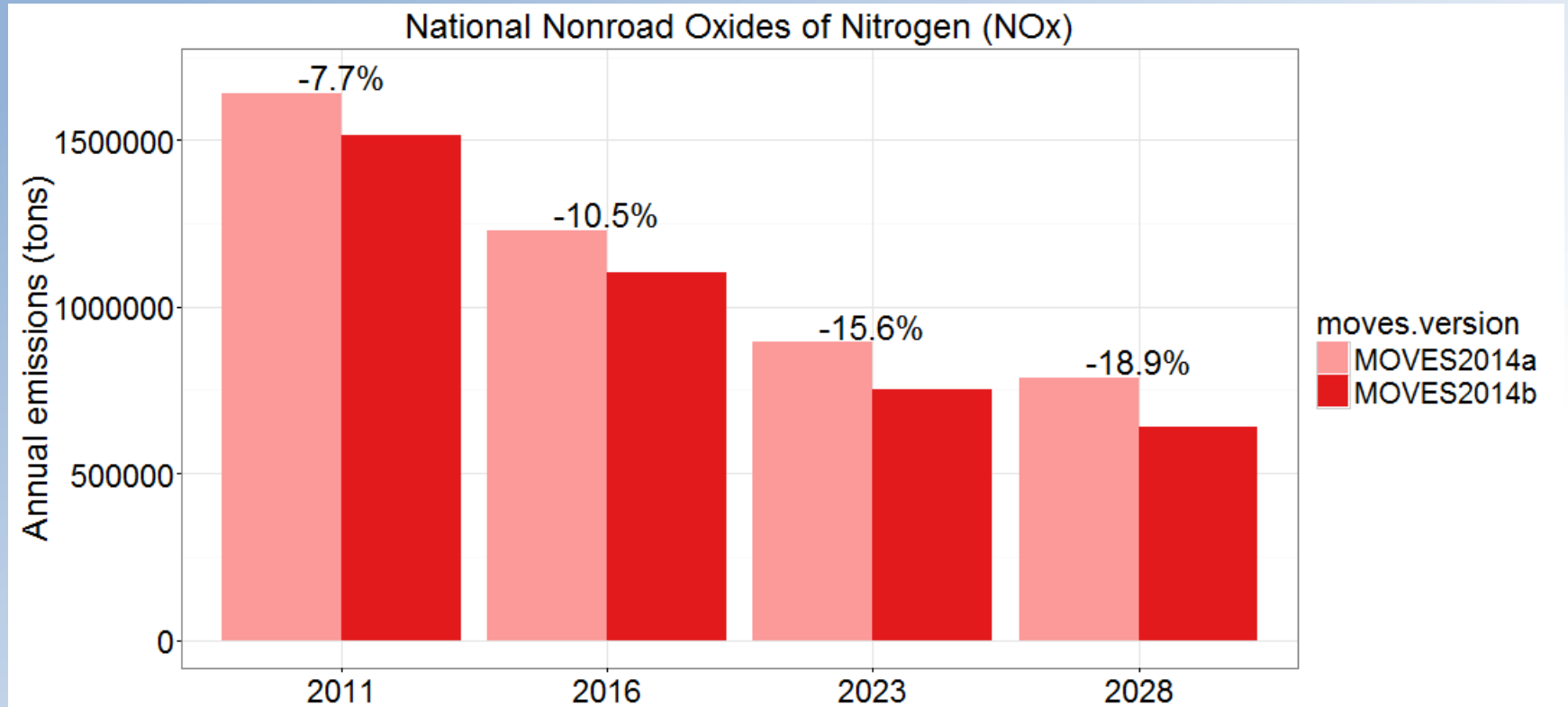


Comparison Runs

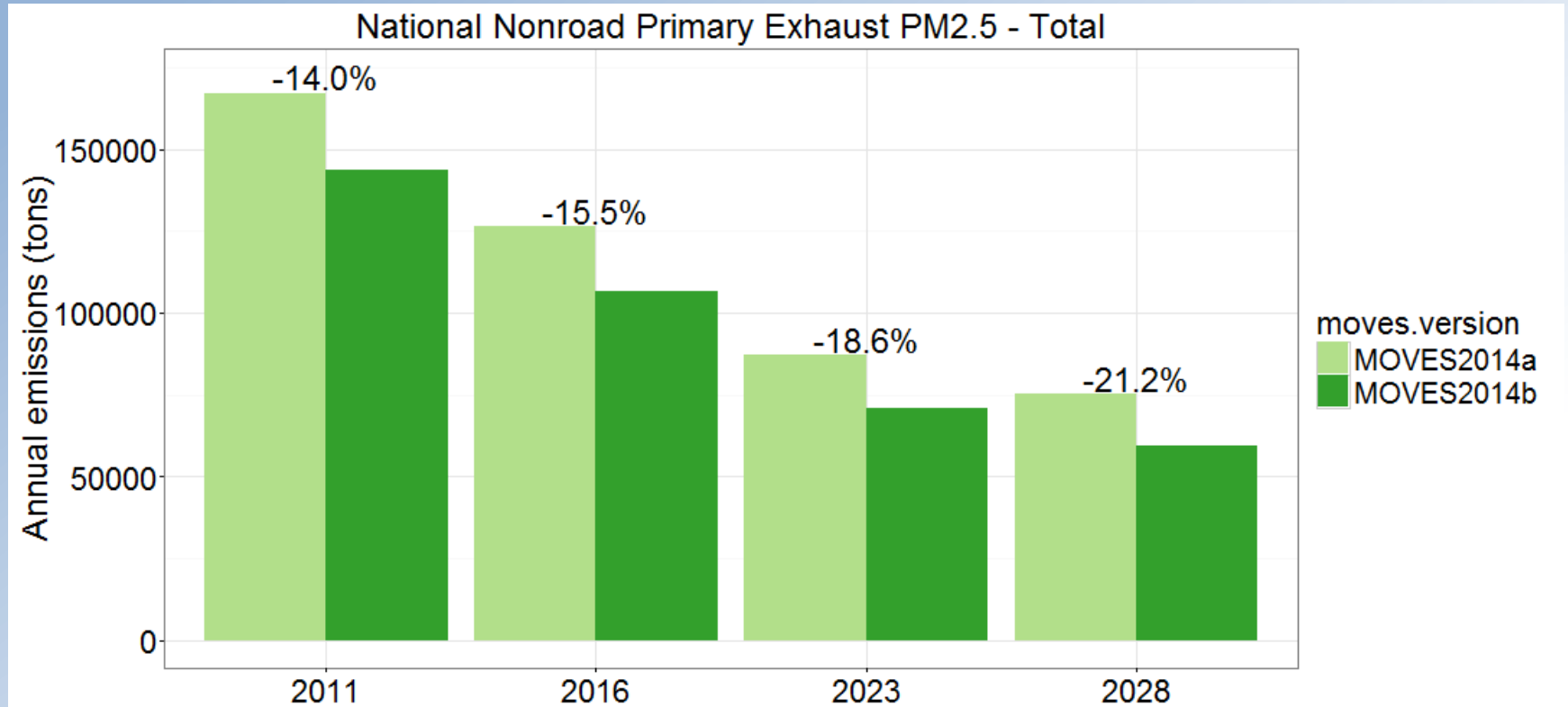
- National scale
- Include exhaust and evaporative emissions for all processes
- Default databases used for all inputs
- Includes January & July; weekend & weekday results



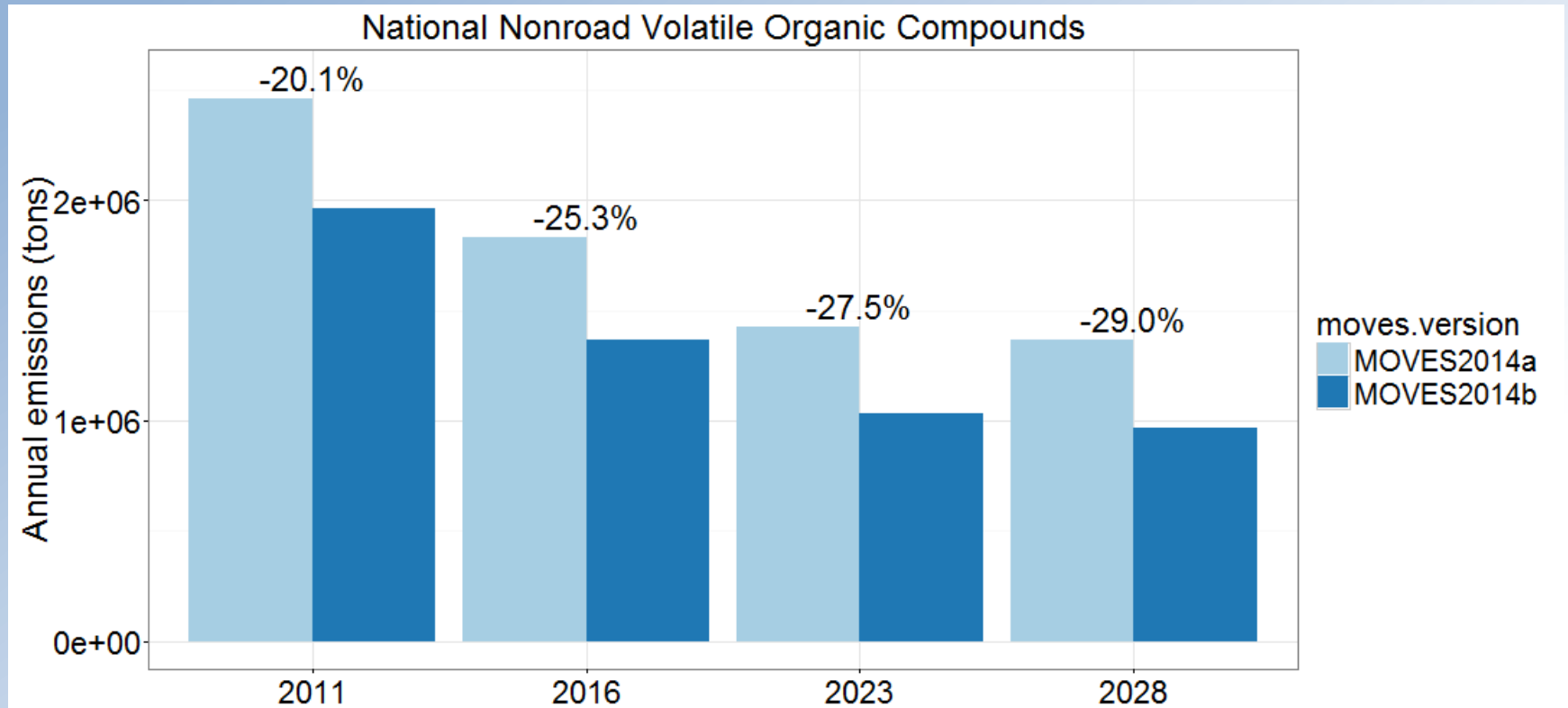
MOVES2014b vs MOVES2014a: NOx



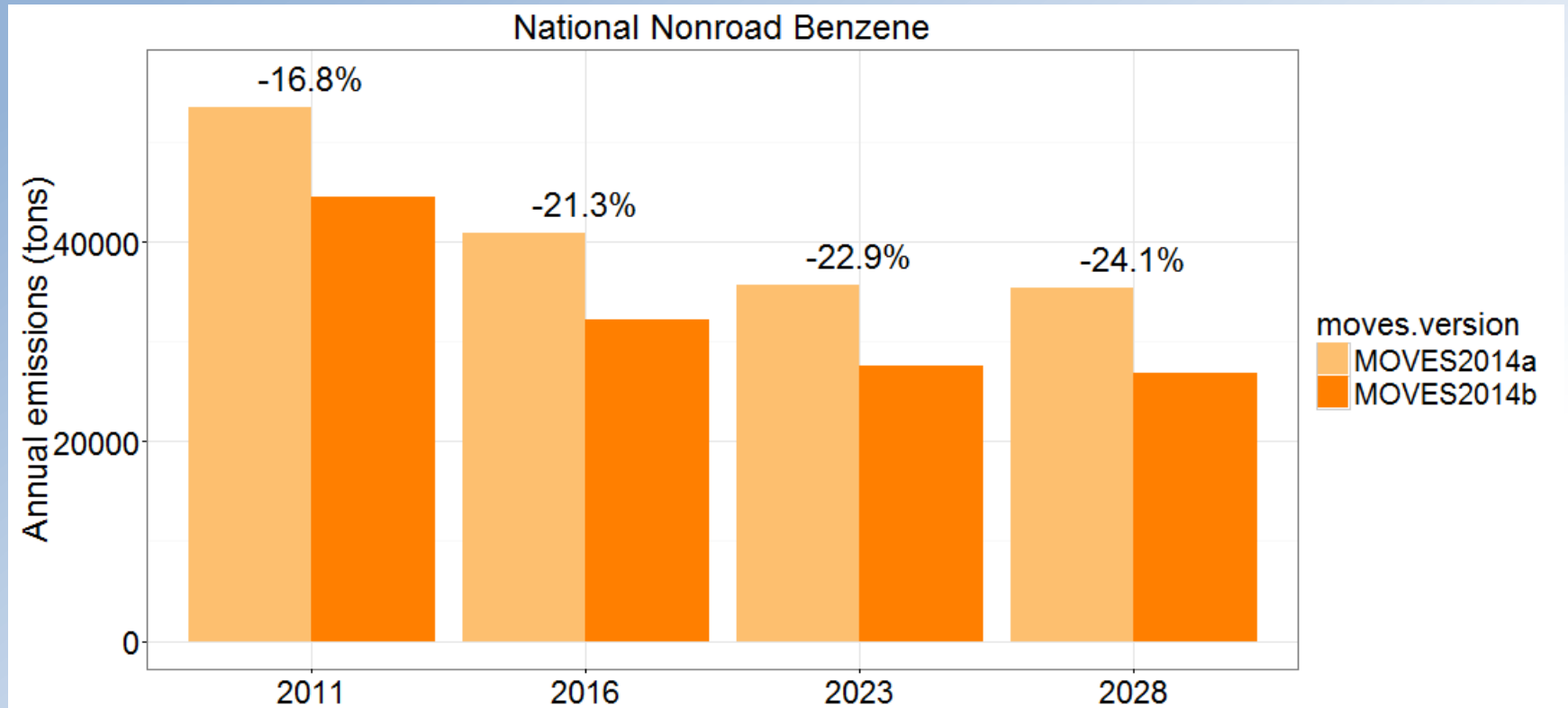
MOVES2014b vs MOVES2014a: PM2.5



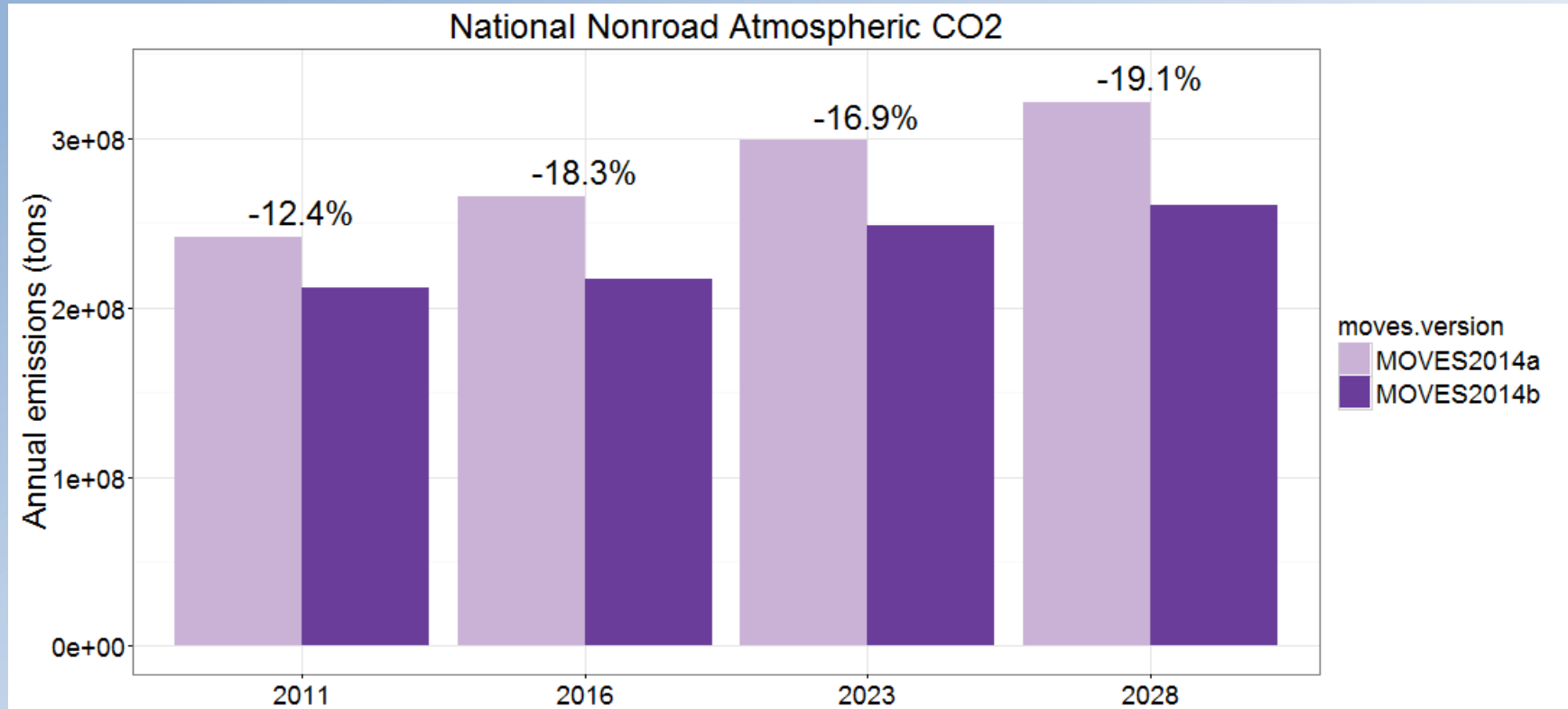
MOVES2014b vs MOVES2014a: VOC



MOVES2014b vs MOVES2014a: Benzene



MOVES2014b vs MOVES2014a: CO2



Emission Impacts Will Vary by Location

- These national runs do not include local variation
- Onroad emissions do not change
 - No change to GHGs, toxics, or criteria emissions (NO_x, VOC, CO, and PM)
- Nonroad emissions
 - Each county is different
 - Regional growth patterns and baseline (mid-1990s) mix of sectors determines whether emissions increase or decrease in a specific county
 - Some counties expected to see lower emissions in all years
 - Higher emissions expected in areas with high growth in population or economic activity



Other Changes for MOVES2014b

- Update to chemical mechanisms used in air quality modeling
- Improved interface for post-processing scripts
- Updated Technical Guidance including
 - Clarification that MOVES2014 is not designed to model mid-level ethanol blends
 - Information on how to use local information and rates from MOVES2014b to develop county-specific nonroad inventories



Next Steps: MOVES Development Continues

- We continue to work on the next “major” update to MOVES, including changes to onroad emissions & activity
- Timing is still being determined; release will be in 2019 at earliest
- We are also continuing work on more comprehensive updates for nonroad



QUESTIONS?

