



REGIONAL HAZE MODELING

AAPCA 2019 Fall Business Meeting 8/27/19

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EPA Technical Guidance and Regional Haze Modeling

- Updated Ozone, PM_{2.5}, and Regional Haze Modeling guidance
 - *November, 2018*
- EPA regional haze technical guidance
 - *December 2018 technical guidance on tracking visibility progress*
- New EPA regional haze modeling- summer 2019
 - *Schedule*
 - *Deliverables*

Updated Ozone, PM_{2.5}, and Regional Haze Modeling Guidance

- EPA finalized updated SIP modeling guidance in November, 2018
 - https://www3.epa.gov/ttn/scram/guidance/guide/O3-PM-RH-Modeling_Guidance-2018.pdf
- The modeling guidance describes:
 - *How to setup and apply a photochemical modeling platform, including meteorological, emissions, and air quality modeling*
 - *How to use air quality modeling to show future attainment of the ozone and/or PM_{2.5} NAAQS and evaluate **reasonable progress goals for regional haze***
- The regional haze portion of the guidance will serve as the main source of modeling guidance for regional haze rule modeling

Technical Guidance on Tracking Visibility Progress

- “Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Rule”
 - *The guidance was released on December 20, 2018 and fulfills a commitment in EPA’s Regional Haze Reform Roadmap*
- EPA held a public webinar on February 20, 2019 to explain the guidance contents and answer questions.
- The guidance document and the webinar presentation can be found here:
 - <https://www.epa.gov/visibility/technical-guidance-tracking-visibility-progress-second-implementation-period-regional>

Visibility Tracking Metric and International Adjustment

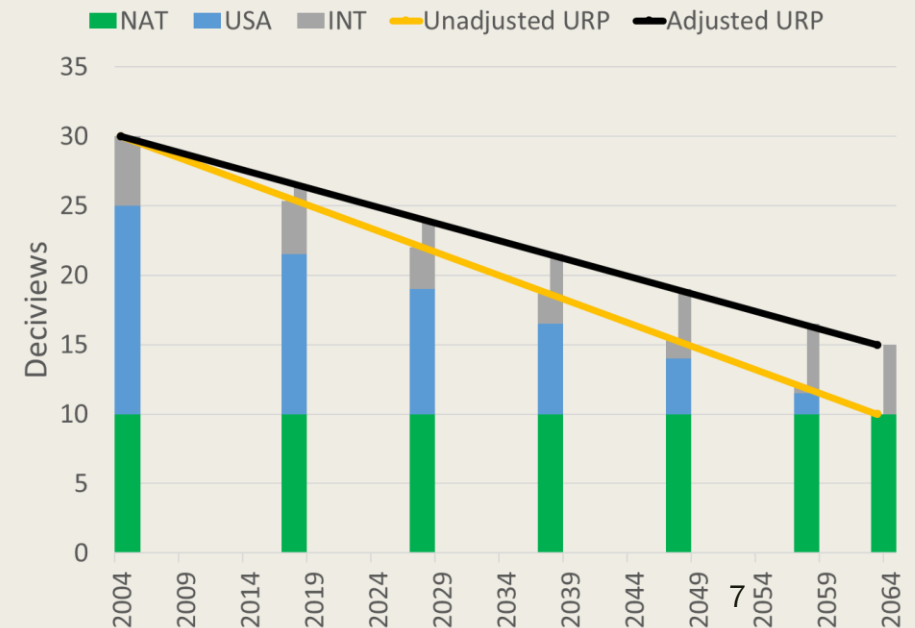
- The 2017 Regional Haze Rule revisions require a revised approach to tracking visibility improvements over time.
 - *The guidance finalizes a recommended methodology to develop baseline and current visibility conditions, and natural conditions on the **20% most impaired** and clearest days at Class I areas.*
 - The recommended visibility tracking metric focuses on anthropogenic visibility impairment
- The 2017 Regional Haze Rule also includes a provision that allows states to propose an adjustment to the uniform rate of progress (URP) glidepath to account for anthropogenic international sources (and prescribed fires).
 - *The guidance describes recommended tools and methods to develop optional URP adjustments*

Revised Tracking Metric

- Compared to the metric used in the first implementation period:
 - *Days selected as the 20% most impaired tend to have:*
 - Lower extinction
 - Wider distribution across seasons
 - Higher fractions of sulfate and nitrate, much lower organic carbon
 - *In the eastern U.S.: little difference between metrics*
 - *In the western U.S.: many sites that were above the URP in 2012-2016 are now at or below the URP with the recommended metric*
- States can download data using the recommended EPA methodology by going to the following website:
<http://views.cira.colostate.edu/fed/QueryWizard/Default.aspx> and choosing the “IMPROVE aerosol, RHR III” dataset
 - *Data is available through 2017 (2018 data will be available later this year.)*
- EPA is still exploring whether changing the magnitude or seasonality of the natural conditions used in the metric improves the calculation of anthropogenic impairment₆

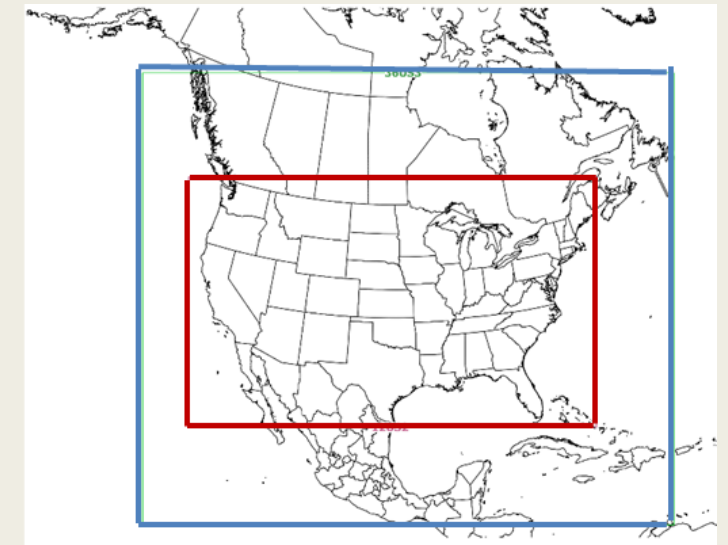
International Adjustment

- The 2017 RHR allows states to adjust the *endpoint* of the URP glidepath upwards to account for international **anthropogenic** impacts (and prescribed fires)
- This guidance provides technical information, and recommendations on procedures and considerations for making URP adjustments
 - *Year selection for quantifying international visibility impacts*
 - *Modeling to estimate anthropogenic international visibility impacts*
 - Recommended types of models
 - Modeling techniques
 - Additional considerations



Updated EPA Regional Haze Modeling- Summer 2019

- New 2016 based modeling platform with emissions projections to 2028, including sector-based PM source apportionment
 - *2028 projected deciviews and glidepath estimates at Class I areas*
 - *Estimate of international anthropogenic contributions*
 - *Model Improvements*
 - New 2016 and 2028 emissions from the State/EPA platform collaborative
 - Regional model improvements
 - *Technical updates to CAMx*
 - *Larger regional domain (including 36km outer domain)*
 - Updated international boundary conditions
 - *Hemispheric CMAQ*
- Modeling will be completed by the end of the summer 2019



Modeling Deliverables

- 2028 default glidepath projections for Class I areas
- International anthropogenic and prescribed fire contribution estimates
 - *Calculation of international contributions*
 - *Issues and lessons learned*
- 2028 national sector-based contributions
 - *22 national emissions sectors (EGUs, on-road mobile, oil and gas, commercial marine, wildfires, etc.)*
- Public documentation
 - *Including caveats and recommendations for further improvements*
- National and/or region specific calls/webinars to discuss modeling and how it can be useful to air agencies.
- National regional haze workshop (October 28-30th in St. Louis)