

TRANSPORTATION CONFORMITY WHITE PAPER

AUGUST 31, 2021

PRESENTED BY:
SARAH J. SIWEK

SARAH J. SIWEK & ASSOCIATES, INC.

BACKGROUND

- White Paper requested by AMPO Air Quality Work Group
 - More than 30 MPOs that discuss air quality issues and requirements
- Conformity requirements in place more than 30 years; good time to look at key, long-standing issues
 - Conformity rule updated 14 times since 1993
 - Emissions model changed 10 times for EPA model and at least 9 times for CA model
- Purpose of White Paper
 - To share information and inform decision makers on timely transportation conformity issues

SCOPE OF WHITE PAPER

- Five issues identified by AMPO AQ Work Group
 - Modeling for regional emissions analysis and the relationship to data from air quality monitors and attainment
 - Conformity requirements for the same pollutant but different NAAQS
 - Transition to latest emissions model
 - Cost and time needed to meet conformity requirements
 - Regionally significant projects

MODELING FOR REGIONAL EMISSIONS ANALYSIS AND RELATIONSHIP TO DATA FROM AIR QUALITY MONITORS

- Issue: MPOs meet the regional emissions analysis requirements (for on-road emissions) but their regions fail to attain the NAAQS on schedule. This disconnect manifests itself in conformity
- Challenge: How to explain to public officials???
 - Air Quality monitors are measuring real-time pollutant concentrations for all sources of emissions.
 - Regional emissions analysis estimates on-road emissions at least 20 years in future

MODELING FOR REGIONAL EMISSIONS ANALYSIS AND RELATIONSHIP TO DATA FROM AIR QUALITY MONITORS

- Examples of modeled emissions below budgets:
 - Eleven moderate 2008 ozone areas did not attain by 2018, resulting in a bump up to serious in eight areas
 - (Chicago-Naperville; Dallas, Ft. Worth; Connecticut; Houston-Galveston-Brazoria; NY-NJ-Long Island, San Diego County; Denver-Boulder-Ft. Collins-Loveland)
- Models do not reflect real-world conditions very well

Fleet data

Emissions controls and effectiveness

Fleet age

Local Road Classification

VMT estimates

LESSONS LEARNED

There is little state DOTs and MPOs can do to remedy this issue

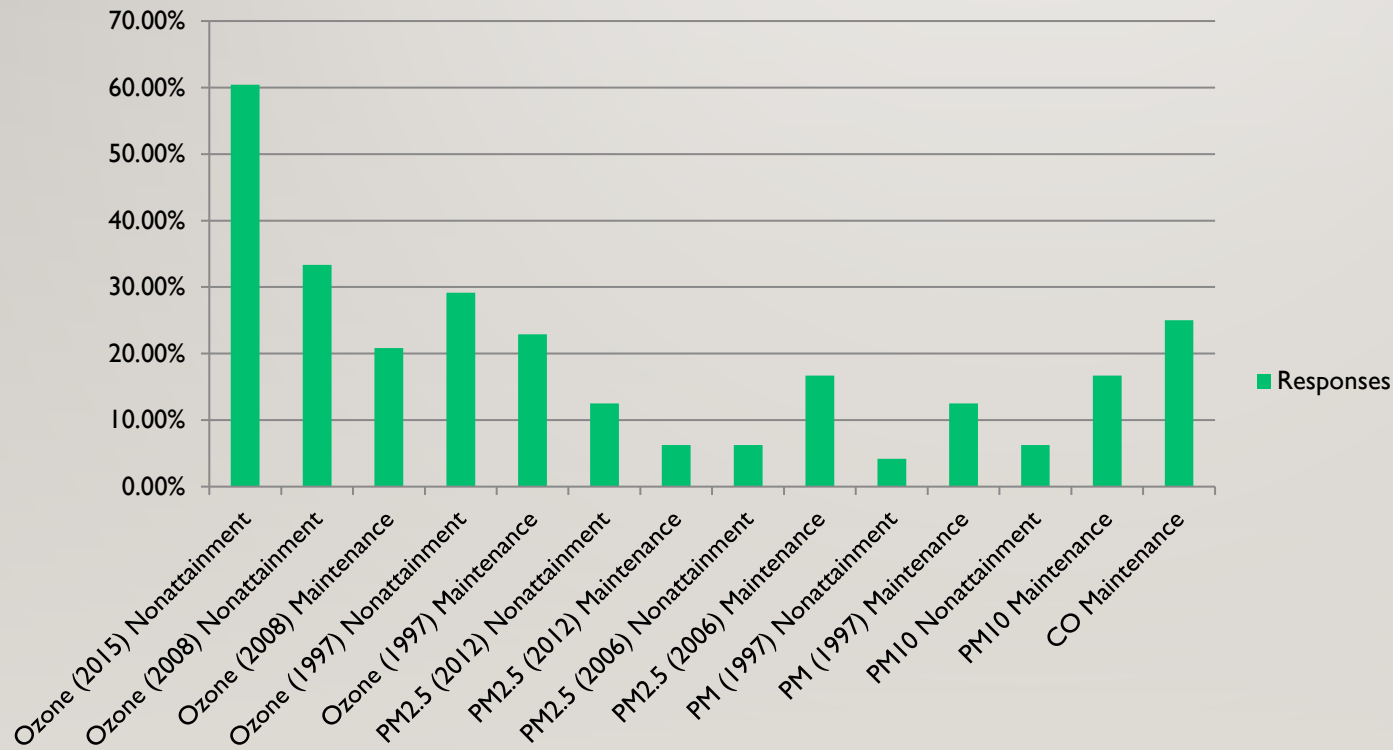
- Communication to public officials can help:
 - EPA trends reports show that on-road emissions as percentage of total emissions have declined every year for last 30 years; on-road emissions sources are meeting their obligations
 - Identify levers to get further reductions from on-road sources; difficult given dramatic reductions to date
 - Acknowledge that on-road reductions may be significantly more costly than reductions from other sectors

CONFORMITY REQUIREMENT FOR SAME POLLUTANT BUT MULTIPLE NAAQS

- Issue: Conformity must be done for same pollutant but different NAAQS (e.g. 2008 and 2015 ozone NAAQS)
- Challenge: For each pollutant, there will be different attainment years, may be different analysis years, different years budgets apply, different n.a, boundaries
- Our MPO CMAQ survey showed that, on average, MPOs had to do conformity for 2.73 non-attainment or maintenance areas (48 MPOs had 131 n.a/maintenance areas)

PROFILE OF MPO SURVEY RESPONDENTS

Is your MPO in a nonattainment or maintenance area (check all that apply)



- 48 MPOs
- 131 non-attainment and Maintenance areas
 - 73 non-attainment areas
 - 58 maintenance areas

CONFORMITY REQUIREMENT FOR SAME POLLUTANT BUT MULTIPLE NAAQS

- Every new NAAQS has been more stringent (and protective of public health) than older NAAQS; it makes little sense for conformity to apply to more than one NAAQS for same pollutant
- This requirement does not add any value to transportation and air quality planning or to attainment
- Remedy: Develop legislative language to require conformity *only* to the most recent NAAQS for each pollutant

TRANSITION TO LATEST EMISSIONS MODEL

- Issue: Latest emissions model must be used for regional emissions analysis.
 - EPA model has changed ten times since 1993
 - CARB model has changed at least nine times
 - This has been an issue for 30 years
- Challenge: The latest emissions model produces different emissions estimates than earlier models; this presents challenges to MPOs because the SIP budgets were developed using latest emission model *at that time*; SIP budgets get old because SIPs do not get updated.
- Many examples over many years where this has caused problems in conformity (e.g. Clark Co. NV, Baltimore, MD, etc.)

LESSONS LEARNED

- This has been and continues to be an issue (MOVES3)
- Remedy: Develop legislative language to allow MPOs to require that SIP motor vehicle emissions budgets (MVEBs) be updated with new emissions model before requiring use of the new model in conformity.

COSTS OF MEETING CONFORMITY REQUIREMENTS

- Issue: The true cost of conformity requirements is unknown
 - EPA collected information (ICRs) on cost of conformity in 2004, 2011, 2015, and 2018.
 - Most recent EPA submittal to OMB (July 18, 2019), EPA estimated total annual cost of conformity, nationwide, to be \$3,094,989 (\$3.1M).
 - At \$63.66/hour including benefits this is 48,671 hours per year or \$28,000 per MPO.
- Challenge: EPA's assumptions -
 - One conformity determination for each MPO every four years.
 - In 2018 submittal EPA revised this assumption for areas with 3 or more NAAQS; assumes one conformity determination every three years.
- EPA also only includes cost estimates for MPOs and grossly underestimates those costs.

COSTS OF MEETING CONFORMITY REQUIREMENTS

- How Big is the Gap between EPA estimates and reality?
- What are the costs?
 - Ongoing costs to meet frequency requirements (most MPOs do conformity at least annually)
 - Emissions model implementation costs
 - Cost of regional emissions analysis
 - State DOT costs to support and coordinate
 - State air or environmental agency staff costs in conformity

COSTS OF MEETING CONFORMITY REQUIREMENTS

- NYMTC – Regional emissions analysis FY20-21 - \$2.24M/total cost FY20-21 - \$12.73M
- Caltrans – Seven full-time employees dedicated to conformity not including project-level analysis costs which are very significant in California
- Texas - \$460,000/year for each MPO larger than 1 million plus \$725,000/year for TxDOT support costs
- Wash DC - \$400,000/year not including costs incurred by MDDOT, DC DOT, VADOT- all key agencies in conformity
- Utah – Transition to MOVES expensive – “It now takes the WFRC days to do with MOVES what took only minutes with MOBILE”

LESSONS LEARNED

- Conformity costs are grossly underestimated by EPA
- The gap between EPA cost estimates and reality is exceptionally large
- A systematic and thorough analysis would require a coordinated effort by AMPO, AASHTO, FHWA, FTA, EPA, and state air agencies
- Remedy: If Congress wants to ever understand the costs it would need to require a thorough analysis that truly considers all costs to all interagency partners

REGIONALLY SIGNIFICANT PROJECTS

- Issue: The definition of regionally significant is included in the conformity rule.
- Challenge: Some judgements must be made to determine whether projects fit into this definition.
- Lesson Learned: The adoption of screening criteria or other means to identify and agree upon regionally significant projects can be helpful.
 - Examples: East-West Gateway Coordinating Council (St Louis) and North Central Texas Council of Governments (NCTCOG)

CONCLUSIONS

- Five long-standing issues discussed; first three could be addressed by Congress to make conformity process more efficient
 1. Develop legislative language such that conformity requirements only apply to most recent NAAQS for any single pollutant.
 2. Develop legislative language to allow MPO to require SIP motor vehicle budget update with new emissions model prior to use of new model in conformity.
 3. Congress can require study to determine true costs of conformity.
 4. Better communication on air quality monitors, regional emissions analysis and the connection to attainment.
 5. Development of screening criteria or guidance for regionally-significant projects can be helpful in interagency consultation process.

QUESTIONS ?

- Sarah Siwek
- ssiwek@aol.com
- 310.963.1395