

PM2.5 Conformity in the San Joaquin Valley

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Overview

- PM2.5 Conformity
- Multi-jurisdictional Areas
- PM Project-level Hotspot Analysis
- Summary of MPO Challenges



Conformity Rules

- Conformity Rule for new PM_{2.5} NAAQS published July 1, 2004 (69 FR 4004)
- PM_{2.5} Precursors Rule published May 6, 2005 (20 FR 24280)
- PM_{2.5} Hot-spot Analysis Rule published March 10, 2006 (71 FR 12468)

PM2.5 Standards

- Current PM2.5 Standards
 - Annual: 15.0 ug/m³
 - 24-hour: 65 ug/m³
- Both PM2.5 standards need to be considered for conformity in all PM2.5 nonattainment areas
- Option to address only one standard if it is the most constraining
- SJV nonattainment area violates both standards

First PM2.5 Conformity Determinations

- EPA designated PM2.5 nonattainment areas on January 5, 2005 (70 FR 943), effective April 5, 2005
- PM2.5 grace period ends one year after effective date of nonattainment designations
- Conforming TIP/RTP must have been in place for PM2.5 by April 5, 2006
 - Then subject to frequency requirements



Conformity in Multi-jurisdictional PM2.5 Areas

- EPA July 21, 2004 guidance
- Applies to a nonattainment or maintenance area that involves multiple MPOs
- The San Joaquin Valley nonattainment area encompasses 8 MPOs (8 counties)



San Joaquin Valley Coordination

- Valley-wide committee
 - 8 MPOs
 - Regional Air District, State DOT, State Air Agency, EPA, FHWA, and FTA
- Monthly conference calls
 - Individual status reports
 - Obtain input and feedback from interagency consultation partners

Conformity in Multi-jurisdictional Before SIP Budgets

- Regional emissions analysis and conformity determination(s) must cover the entire nonattainment area

- Two options:
 - One modeling analysis for the entire area, or
 - Separate modeling by each MPO, compiled into one analysis for the entire area

- Each MPO's conformity determination should include the same regional emissions analysis for the entire area

Regional Emissions Tests (before PM2.5 SIP established)

- PM2.5 areas can choose either the:
 - No-greater-than-2002 baseline test, OR
 - Build-no-greater-than-no build test
- Regional emissions analysis is done for direct PM2.5 and any applicable precursors
- Same test must be used for all analysis years
- SJV chose less than 2002 baseline test
 - SJV MPOs conducted regional modeling runs to estimate 2002 baseline

Transportation PM_{2.5} Sources

- Gasoline and diesel on-road vehicles emit:
 - Direct PM_{2.5}
 - Exhaust
 - Brake and tire wear
 - Re-entrained dust from paved and unpaved roads
 - Construction dust from highway and transit construction
 - PM_{2.5} precursors:
 - Nitrogen oxides (NO_x)
 - Volatile organic compounds (VOCs)
 - Sulfur oxides (SO_x)
 - Ammonia (NH₃)



Direct PM_{2.5} in Regional Analyses

- MOBILE 6.2 and EMFAC 2002 (CA only) generate emission factors for direct PM_{2.5} emissions
- Before PM_{2.5} SIP budgets, road dust and construction dust *is not* included unless significant
- EPA is preparing guidance for PM_{2.5} dust inventories

PM2.5 Precursors in Regional Analyses

- MOBILE 6.2 generates emissions factors for all PM2.5 precursors
- EMFAC 2002 (CA only) generates emission factors for all except NH₃
- Before PM2.5 SIP budgets:
 - Must address NO_x, unless insignificant
 - Do not need to address VOC, SO_x, and NH₃ unless significant
- SJV demonstration includes PM2.5 and NO_x

Analysis Years

- EPA Guidance for Determining the “Attainment Year” for Transportation Conformity issued on March 8, 2005

- Prior to conformity budgets:
 - No more than 5 years beyond the year in which the conformity determination is made
 - The last year of the transportation plan’s forecast period; and
 - Note that SAFETEA-LU provides an option to shorten this horizon year after consultation and public comment
 - Any additional years within the time frame of the transportation plan so that analysis years are no more than 10 years apart.

- SJV Analysis includes 2010, 2020, 2030



Daily and Annual Inventories

- Several different options - Interagency consultation is critical for determining which option to use for SIPs and Conformity

- Depends on:
 - Availability and quality of seasonal or monthly data
 - Sensitivity analysis of EMFAC/MOBILE inputs
 - Resource implications

- For Conformity:
 - Before SIP budgets, you can use a simplified approach
 - After SIP budgets, subsequent regional conformity analyses should use the same approach as the SIP budget

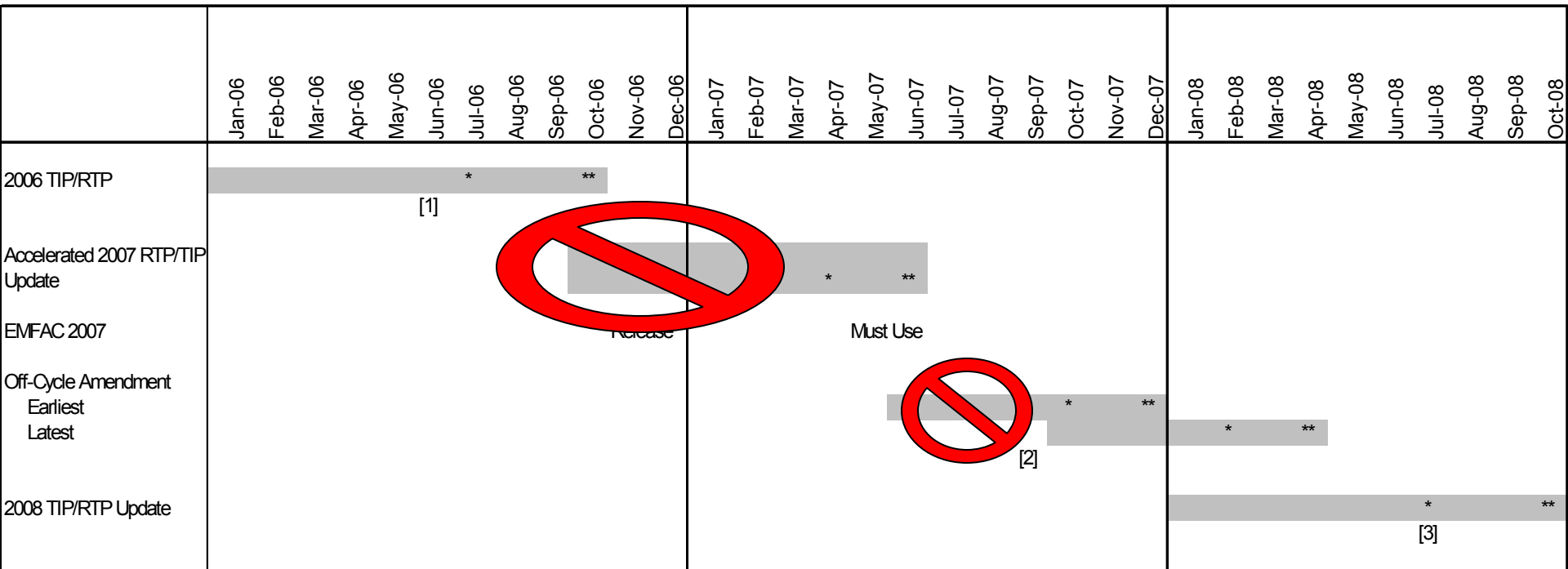
Conformity in Multi-jurisdictional Before SIP Budgets

- Conformity determination(s) are done as follows:
 - Each MPO determines conformity of its TIP/RTP and submits it to DOT
 - When all MPO determinations are submitted, DOT makes its conformity determinations on the TIP/RTPs at the same time
- If one MPO cannot demonstrate conformity
 - DOT cannot make its conformity determinations, and
 - The entire nonattainment area is impacted

Conformity in Multi-jurisdictional Before SIP Budgets

- All MPOs must make a conformity determination every time one MPO updates and revises its TIP/RTP
- If an MPO is not significantly changing its TIP/RTP, they may rely on a previous emissions analysis for its portion per 93.122(g)

2006-2008 Conformity Timeline



* indicates TPA Adoption
 ** indicates anticipated federal approval

[1] Potential adequacy finding on new PM-10 budgets
 [2] Potential adequacy finding on new Ozone budgets
 [3] Potential adequacy finding on new PM2.5 budgets



Project-Level Hotspot Analysis

- Rule effective April 5, 2006
- Qualitative PM Hotspot Analysis Guidance, EPA/FHWA, March 10, 2006
- Applies to Federal Projects (or Federal Action)
 - Within PM nonattainment or maintenance area
 - Not exempt under either 40 CFR 93.126 or 93.128
 - Determined to be Projects of Air Quality Concern per criteria under 40 CFR 93.123(b)(1)



Potential Projects of Air Quality Concern

- AADT greater than 125,000 and greater than 8% truck traffic
- New or expanded highway projects with significant number of or increase in diesel vehicles
- Projects affecting LOS D, E, or F with significant number of or increase in diesel vehicles
- New or expanded bus and rail terminals and transfer points with significant number or increase in diesel vehicles at location
- Projects affecting violation sites identified in SIP



Projects NOT of Air Quality Concern

- A new highway project that primarily serves gasoline vehicles
- Intersection channelization or interchange reconfiguration projects
- New compressed natural gas terminal
- And more...

Assessment

- Typically included as part of NEPA process
- Exempt project
 - No project-level conformity required
- Project Not of Air Quality Concern
 - Documentation that project does not meet 93.123(b)(1)
 - Project-level conformity determination still required, but no hotspot analysis needed
- Project of Air Quality Concern
 - Qualitative consideration of local factors

Assessment, Cont.

- If NEPA completed, but Federal Action still necessary...

- Use Interagency consultation to have partners:
 - Confirm exempt project
 - Concur Project Not of Air Quality Concern
 - Review Qualitative consideration of local factors for Project of Air Quality Concern
 - Confirm proposed public involvement approach



Requirements

- Hotspot analyses must demonstrate that:
 - No new local PM violations will be created
 - The frequency or severity of existing violations will not be increased as a result of the project
- Project-level conformity determinations must address both the annual and 24-hour standards, regardless of which form of the standard the area has violated.



Project Sponsor Responsibilities

- Conduct environmental analysis to comply with NEPA
- Provide hotspot analysis
- Meet interagency consultation requirements
- Meet public involvement requirements



MPO Responsibilities

- Not defined by conformity regulations
- Use interagency consultation to determine role for NEPA process & for projects where NEPA has been completed
 - Review assessment
 - Assist with interagency consultation
 - Assist with public involvement



Qualitative Assessments

- Comparison to another location with similar characteristics
- Air quality study approach
- Guidance describes factors that should be considered



Summary of MPO Challenges

- **PM2.5 Conformity Demonstrations**
 - Multi-jurisdictional requirements
 - Nonattainment area demonstration
 - TIP/RTP Amendments
- **PM Project-Level Hotspot Analysis**
 - If NEPA completed
 - Project Sponsor and MPO responsibilities



Contact Information

- Cari Anderson: 602-277-1640
 - cari@caconsulting.org
- Fresno Website:
 - www.fresnocog.org
 - Valley-wide coordination
 - Conformity information
 - SIP development