Overview of Air Quality Conformity Determination

Update to *Connected2045*: Long Range Transportation Plan for the St. Louis Region

Air Quality Advisory Committee
May 28, 2019
Purpose of Air Quality Conformity

• 1990 Clean Air Act Amendments Section 176 (c)
• Make sure that transportation investment is consistent with state goals to attain and maintain National Ambient Air Quality Standards (NAAQS)
• Applies in areas where:
  • EPA has found transportation-related pollutants violate NAAQS (non-attainment) or
  • Areas which EPA has re-designated from non-attainment to attainment (maintenance)
Transportation Air Quality Conformity

- Transportation projects in Long Range Transportation Plan must be analyzed to determine conformity with state air quality goals prepared for ozone and fine particulate matter (PM$_{2.5}$) pollutants
  - All projects must be included in the analysis
  - Projects not included in the analysis cannot progress/move ahead toward implementation

- East-West Gateway, as Metropolitan Planning Organization (MPO) for St. Louis region, responsible for conducting Conformity Determination with input from Inter Agency Consultation Group (IACG)
Conformity Determination – Regional Emissions Analysis

- Series of computer modeling exercises are performed to develop estimates of motor vehicle emissions from the planned transportation system over a series of analysis years
- Travel demand model - vehicle miles traveled and speed distribution
- MOtor Vehicle Emissions Simulation (MOVES) model - motor vehicle emissions factors
- Model inputs include:
  - Estimates of current and future population, employment, land use, travel and congestion and vehicle fleet data
  - Transit operating policies and ridership
- Post-processing of model output to prepare emissions estimates
Regional Emissions Analysis Tests

• Ozone – Budget test
  • Volatile organic compounds (VOC) and oxides of nitrogen (NO$_x$)
  • **To pass** – For each analysis year, estimates emissions from planned transportation system $< \text{motor vehicle emission budget (cap)}$ set by Missouri and Illinois in respective State Implementation Plans (SIP).

• PM$_{2.5}$ – Interim test (no budget established at this time)
  • Direct PM$_{2.5}$ and NO$_x$
  • **To pass** – For each analysis year, estimated emissions from planned transportation system $< 2002 \text{ baseline emissions prepared by EWG}$
Conformity - Ozone Standards

- **2008 Eight-Hour Ozone Standard**
  - EPA has redesignated region from non-attainment to attainment of this standard (maintenance)

- **2015 Eight-Hour Ozone Standard**
  - EPA designated five counties and one township as not meeting this standard (non-attainment)
### Air Quality Conformity Regional Emissions Analysis – 2008 Ozone Standard

#### 2008 Ozone Standard Conformity Tests – Missouri – 5 County Maintenance Area

#### 2008 Ozone Standards Conformity Tests – Illinois – 3 County Maintenance Area

(US tons per day)

<table>
<thead>
<tr>
<th>Analysis Year</th>
<th>Missouri</th>
<th>Illinois</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VOC 2015 Budget</td>
<td>NOx 2015 Budget</td>
<td>VOC 2025 Budget</td>
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<td>3.05</td>
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</table>

All tests have been passed for all years.

Budgets are developed by the states. EPA has to find them adequate for use or approves SIP that are in.
## Air Quality Conformity Regional Emissions Analysis – 2015 Ozone Standard

### 2015 Ozone Standard Conformity Tests
- **Missouri** – 3 County & 1 Township Non-Attainment Area
- **Illinois** – 2 County Non-Attainment Area

(US tons per day)

<table>
<thead>
<tr>
<th>Analysis Year</th>
<th>Missouri</th>
<th>Illinois</th>
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<tbody>
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Conformity - PM$_{2.5}$ Standard

- Illinois Counties of Madison, Monroe and St. Clair and Baldwin Township in Randolph County have been designated by EPA as being in non-attainment of the 1997 annual PM$_{2.5}$ standard.
### Regional Emissions Analysis: Conformity test for Illinois*

Based on Conformity Requirements for Annual PM$_{2.5}$ Standard
(US tons per year)

<table>
<thead>
<tr>
<th>Analysis Year</th>
<th>Direct PM$_{2.5}$</th>
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<tr>
<td>2045</td>
<td>116.83</td>
<td>809.55</td>
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All tests have been passed for all years.

*Includes Baldwin Township

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2002 baseline emissions developed by EWG with assistance of IL EPA
Conformity for 1997 Ozone Standard

• The February 2018 U.S. District Court of Appeals for D.C. Circuit decision in South Coast Air Quality Management District vs. EPA struck down portions of EPA’s 2008 Ozone Standard SIP Requirements rule and upheld EPA’s March 2015 revocation of the 1997 ozone standard

• Called out as “orphan” areas which were maintenance or non-attainment for 1997 ozone standard but were found by EPA to be in attainment of 2008 ozone standard

• Starting February 2019, orphan areas to have conformity performed based on 1997 ozone standard
How Decision Affects St. Louis (MO-IL) Region and Jersey County IL

• 2004 – St. Louis (Mo-IL) eight-county region and Jersey County IL non-attainment for 1997 standard
• June 2012 - IL counties designated to attainment of this standard
• July 2012 - Eight-county region non-attainment for 2008 ozone standard
• July 2012 - Jersey County IL in attainment of 2008 ozone standard
• February 2015 – MO counties designated to attainment of 1997 ozone standard
• 2018 - Jersey County is considered a partial orphan area

Designations made by EPA
Conformity Determination Process for 1997 Ozone Standard

- Jersey County is outside EWG boundaries
- IDOT to provide information if there are new, capacity-adding project(s) in Jersey County
- EWG, as MPO, to conduct conformity determination with IACG input
- Follow EPA guidance on how to determine conformity for the 1997 ozone standard orphan areas (November 2018)
  - Regional emissions analysis not required
  - Four criteria to satisfy
- Review FHWA template that affected MPOs, like EWG, could use to address and document conformity determination (January 2019)
Project(s) in Jersey County and Conformity

• IDOT’s U.S. Route 67 Delhi Bypass project to be part of conformity
• Criteria satisfied
  • Inter agency and public consultation has occurred
  • IDOT has shown that project has fiscal constraint
  • Latest planning assumptions used for Transportation Control Measures (TCMs) in approved SIP, if there were TCMs in that SIP – Not applicable as no TCMs in approved SIP
  • Timely implementation of any approved SIP TCMs if TCMs are in that SIP – Not applicable as no TCMs in approved SIP
• Conformity with 1997 ozone standard demonstrated
Documentation and Comment Period

• Document process and findings
• Public comment period May 8, 2019 – June 7, 2019 with open houses May 13 and May 20
  • Update to Connected2045: Long Range Transportation Plan for the St. Louis Region
  • Air Quality Conformity Determination and Documentation
• Comments must be submitted or postmarked by June 7, 2019
• EWG Board action at June 26 meeting
• After that submitted to FHWA MO for concurrence with findings
May 24, 2019 – Looking east from SSM St. Mary’s Health Center
MDNR Visual Air Pollution Camera