

# About Transportation Air Quality Conformity Determination

May 2023 Conformity Determination  
Performed for Connected 2050: Long-Range  
Transportation Plan for the  
St. Louis Region



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# Purpose of Air Quality Conformity

- Projects must be analyzed to determine that they meet requirements of (conform to) state air quality ozone plans and do not worsen air quality
- All projects must be included in the analysis
- Projects not included in the analysis cannot progress/move ahead toward implementation

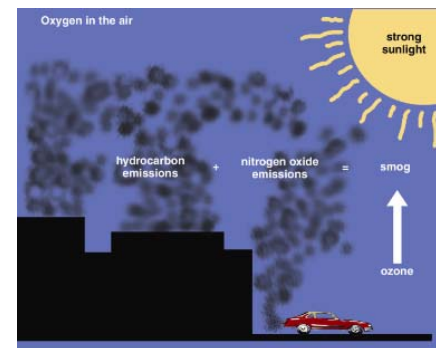


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# What is Ozone?

- Ground level ozone is formed when hydrocarbons (or volatile organic compounds – VOC) and nitrogen oxides ( $\text{NO}_x$ ) from vehicle exhaust and other industrial processes chemically react with oxygen in the lower atmosphere
- Weather influences ozone formation – strong sunshine, low wind speed and temperatures of  $85^\circ$  and higher
- Ozone affects everyone, in particular children and the elderly
- High levels can cause headaches, fatigue and eye, nose and respiratory tract irritation
- Prolonged exposure can aggravate chronic heart disease and chronic respiratory ailments, like asthma



# Who performs Conformity Determination for the St. Louis (MO-IL) Region

- Conducted by the East-West Gateway Council of Governments (EWG), the Metropolitan Planning Organization for the region
  - With assistance of the Inter Agency Consultation Group (IACG), a peer group made up of representatives from EWG and federal, state and local air quality and transportation agencies
- EWG Board of Directors to approve initial determination
- Final conformity determination is made by Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) as OneDOT
  - U.S. Environmental Protection Agency (EPA) provides input on whether the EWG's initial conformity determination and the associated documentation meets requirements of Transportation Conformity Regulations
- Starting with EWG efforts and ending with receipt of OneDOT letter, it is approximately a nine month process



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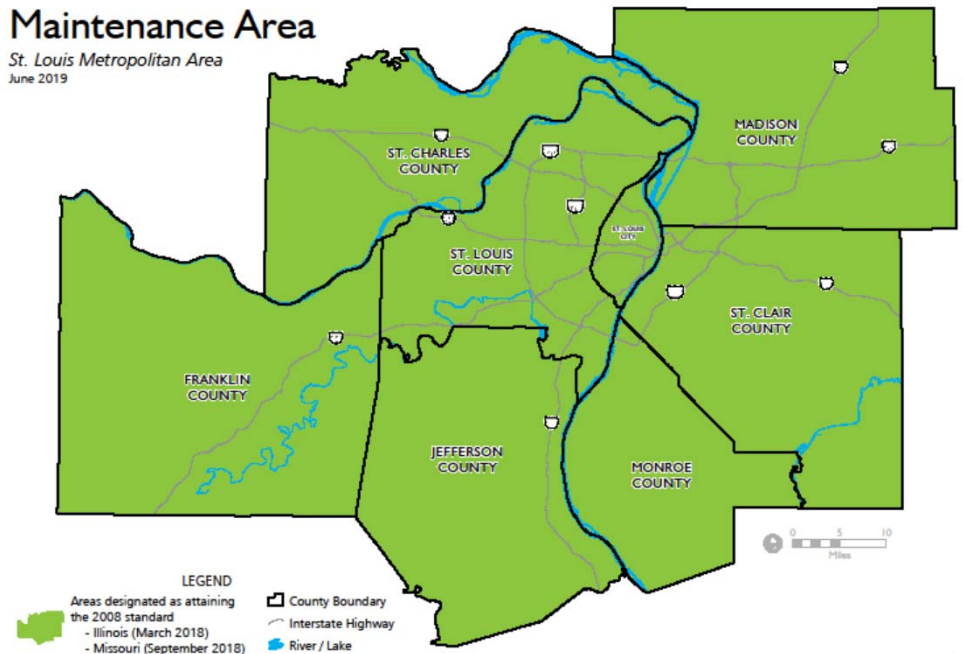
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# Conformity is to be Conducted for 2008 Ozone Standard Maintenance Areas

- EPA has re-designated the eight-county St. Louis region (MO-IL) from nonattainment to attainment because it has come into compliance with this standard
- Considered a maintenance area
- EPA has not revoked the 2008 standard so a Conformity Determination has to be performed for it

## 2008 Ozone Standard Maintenance Area

St. Louis Metropolitan Area  
June 2019



Source: East-West Gateway Council of Governments



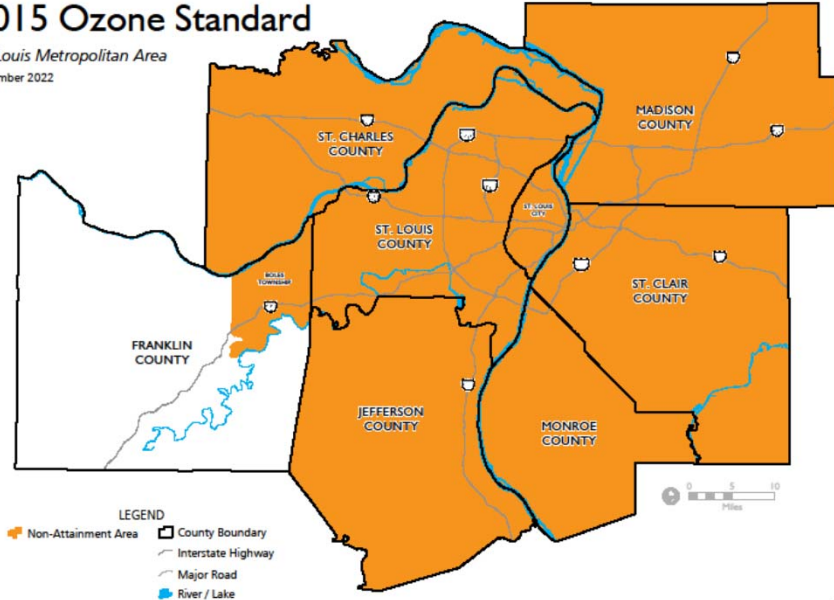
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# Conformity is to be Conducted for 2015 Ozone Standard Nonattainment Areas

## Non-Attainment Area 2015 Ozone Standard

St. Louis Metropolitan Area  
November 2022



Sources: East-West Gateway Council of Governments



- EPA has designated the following as non-attainment for this standard:
  - Jefferson, St. Charles and St. Louis Counties, City of St. Louis and Boles Township in Missouri
  - Madison, Monroe and St. Clair Counties in Illinois
- Work is underway so this area can comply with standard



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# Air Quality Conformity Determination Process

- Process from EPA's Transportation Conformity Regulations, 40 CFR Part 93
- Conformity evaluates and documents the impact of proposed transportation activities on the region's air quality
  - Conducted for Transportation Improvement Program (TIP) and metropolitan Long-Range Transportation Plan (LRTP)
- Projects included in the TIP/LRTP must pass regional emissions analysis tests for volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) for selected future analysis years, including the horizon year for the LRTP
- Purpose is to make sure that federal transportation investment is consistent with Missouri and Illinois goals contained in their SIPs to maintain/attain the ozone standards



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# Components of a Regional Emissions Analysis

- Develop forecasts of future mobile source emissions (VOC and NO<sub>x</sub>) for selected future analysis years for projects in TIP/LRTP by:
  - Running travel demand model to develop vehicle miles traveled (VMT) estimates
  - Running latest EPA-approved MOtor Vehicle Emissions Simulation (MOVES) model to generate mobile source emissions factors (Inventory or Emissions mode can be used)
  - If MOVES run in emissions mode, then running EWG-developed post-processing program which uses the VMT estimates and the MOVES input and output files to calculate total emissions





# Components of a Regional Emissions Analysis - Continued

- Comparing the EWG-generated mobile source emissions forecasts expected to occur as result of implementation of the TIP/LRTP to Missouri and Illinois VOC and NO<sub>x</sub> motor vehicle emissions budgets set out in their respective State Implementation Plans (SIPs) for air quality
- Demonstrating that for all analysis years each State's motor vehicle emissions budgets will not be exceeded



# Results

## Regional Emissions Analysis – 2008 Ozone Standard

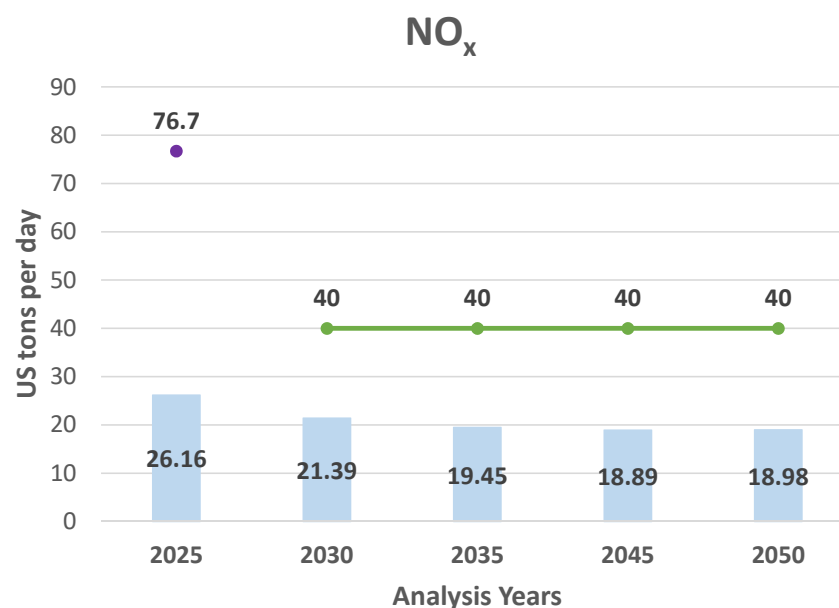
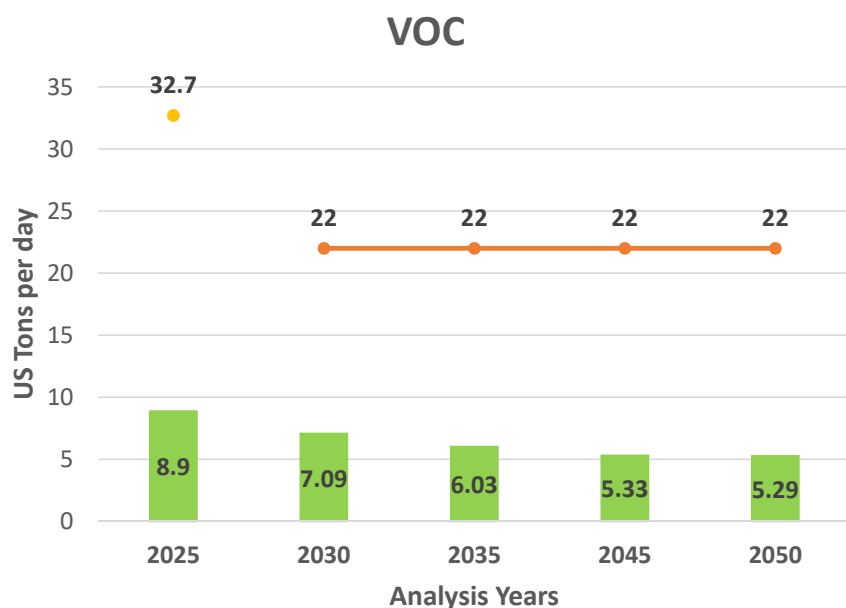
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# 2008 Ozone Standard Missouri - 5 County Maintenance Area Regional Emissions Analysis (US tons/day)

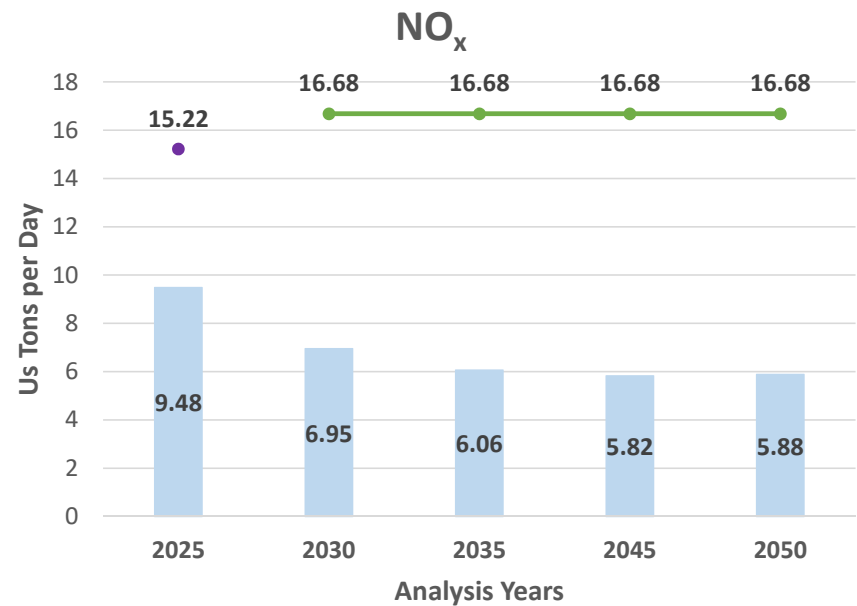
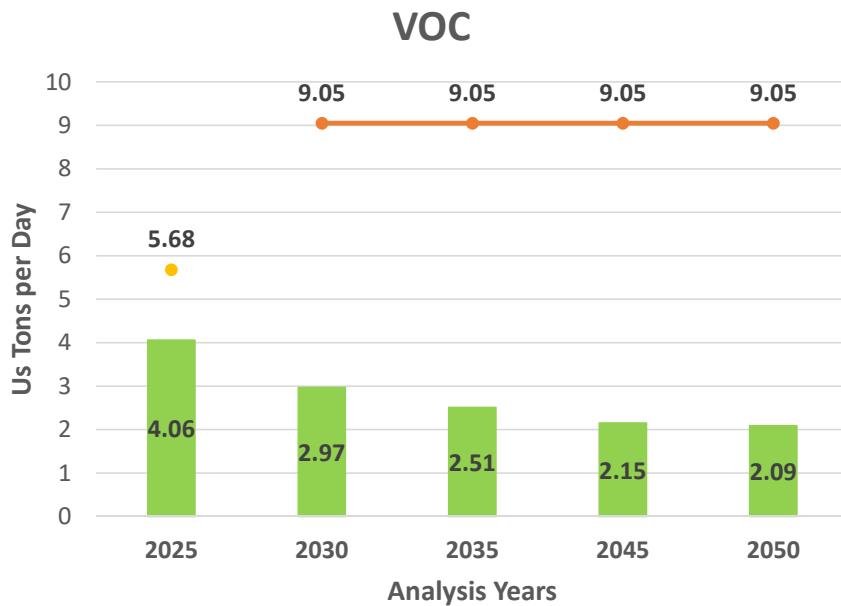


■ Estimated Action Emissions 
 ● 2015 VOC Budget  
—●— 2030 VOC Budget

■ Estimated Action Emissions 
 ● 2015 NO<sub>x</sub> Budget  
—●— 2030 NO<sub>x</sub> Budget

All tests have been passed for all years

# 2008 Ozone Standard Illinois - 3 County Maintenance Area Regional Emissions Analysis (US tons/day)



■ Estimated Action Emissions 
 ●— 2025 VOC Budget  
●— 2030 VOC Budget

■ Estimated Action Emissions 
 ●— 2025 NOx Budget  
●— 2030 NOx Budget

All tests have been passed for all years

# Results

## Regional Emissions Analysis – 2015 Ozone Standard

Performed for Conformity Determination for Connected 2050 – May 2023



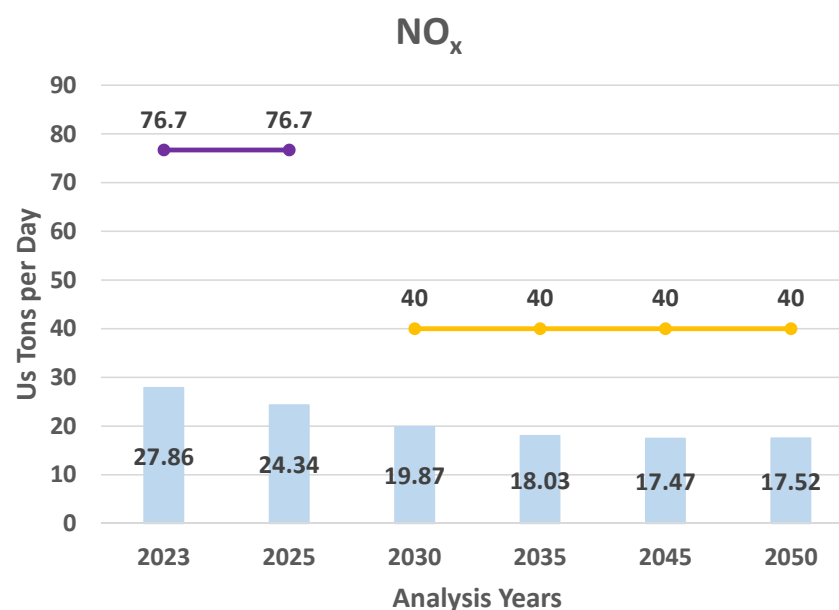
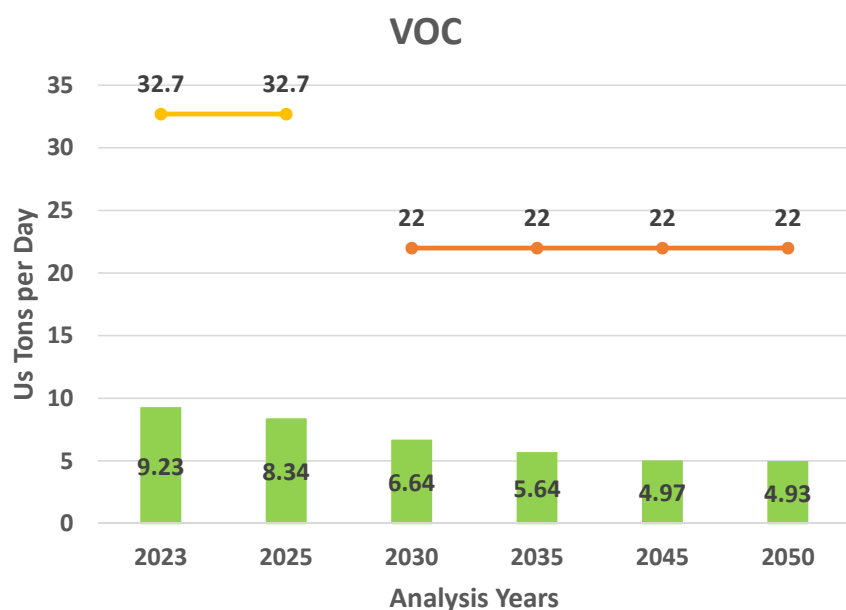
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# 2015 Ozone Standard

## Missouri - 4 County & 1 Township Nonattainment Area

### Regional Emissions Analysis (US tons/day)

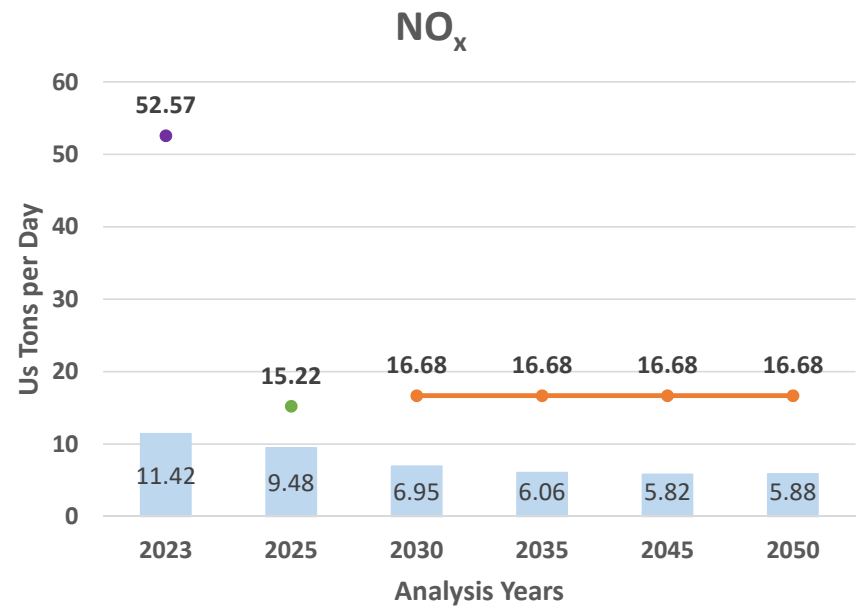
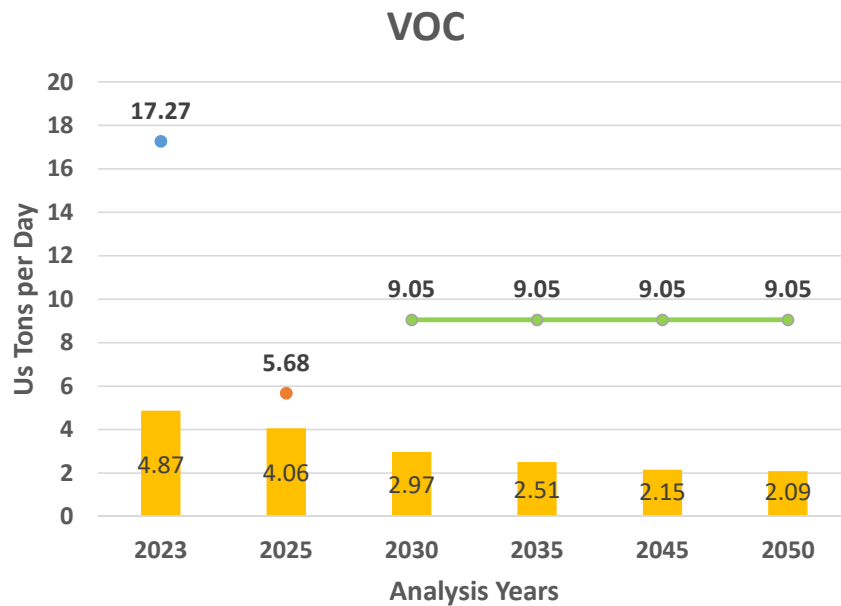


■ Estimated Action Emissions 
 —●— 2015 VOC Budget  
—●— 2030 VOC Budget

■ Estimated Action Emissions 
 —●— 2015 NO<sub>x</sub> Budget  
—●— 2030 NO<sub>x</sub> Budget

All tests have been passed for all years

# 2015 Ozone Standard Illinois - 3 County Nonattainment Area Regional Emissions Analysis (US tons/day)



■ Estimated Action Emissions    —●— 2008 VOC Budget  
—●— 2025 VOC Budget        —●— 2030 VOC Budget

■ Estimated Action Emissions    —●— 2008 NO<sub>x</sub> Budget  
—●— 2025 NO<sub>x</sub> Budget        —●— 2030 NO<sub>x</sub> Budget

All tests have been passed for all years

# Public Comment Period

- Comment period for the Draft Conformity Determination and Draft Connected 2050 runs from May 8, 2023 – June 7, 2023 (31 days)
- Information about the drafts and the public engagement opportunities can be found at -  
<https://www.ewgateway.org/transportation-planning/connected-2050/>
- Comments can be mailed to EWG, provided through survey monkey at <https://www.surveymonkey.com/r/connected2050> , emailed to [LRP@ewgateway.org](mailto:LRP@ewgateway.org) or made in person at engagement opportunities. Last day for mail comments to be postmarked is June 7. Survey or email comments can be submitted up to midnight.



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## Drafts can be found on EWG website

- Draft Air Quality Conformity Determination and Draft Connected 2050: Long-Range Transportation Plan for the St. Louis Region
- <https://www.ewgateway.org/transportation-planning/connected-2050/>
- Comment period for both documents runs through June 7, 2023
- EWG Board of Directors will act at their June 28, 2023 meeting



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