

Transportation Air Quality Conformity Update

2019-12-18

Transportation Advisory Board



Clean Air Act: National Ambient Air Quality Standards

- Carbon Monoxide
- Lead
- Nitrogen Dioxide
- Ozone
- Particulate Matter
- Sulfur Dioxide

Attainment Definitions

- Attainment area: An area that meets national ambient air quality standards.
- Nonattainment area: An area that has been designated by EPA as not meeting national ambient air quality standards
- Maintenance area: An area previously designated nonattainment and subsequently re-designated to attainment subject to the requirement to develop a maintenance plan

Carbon Monoxide

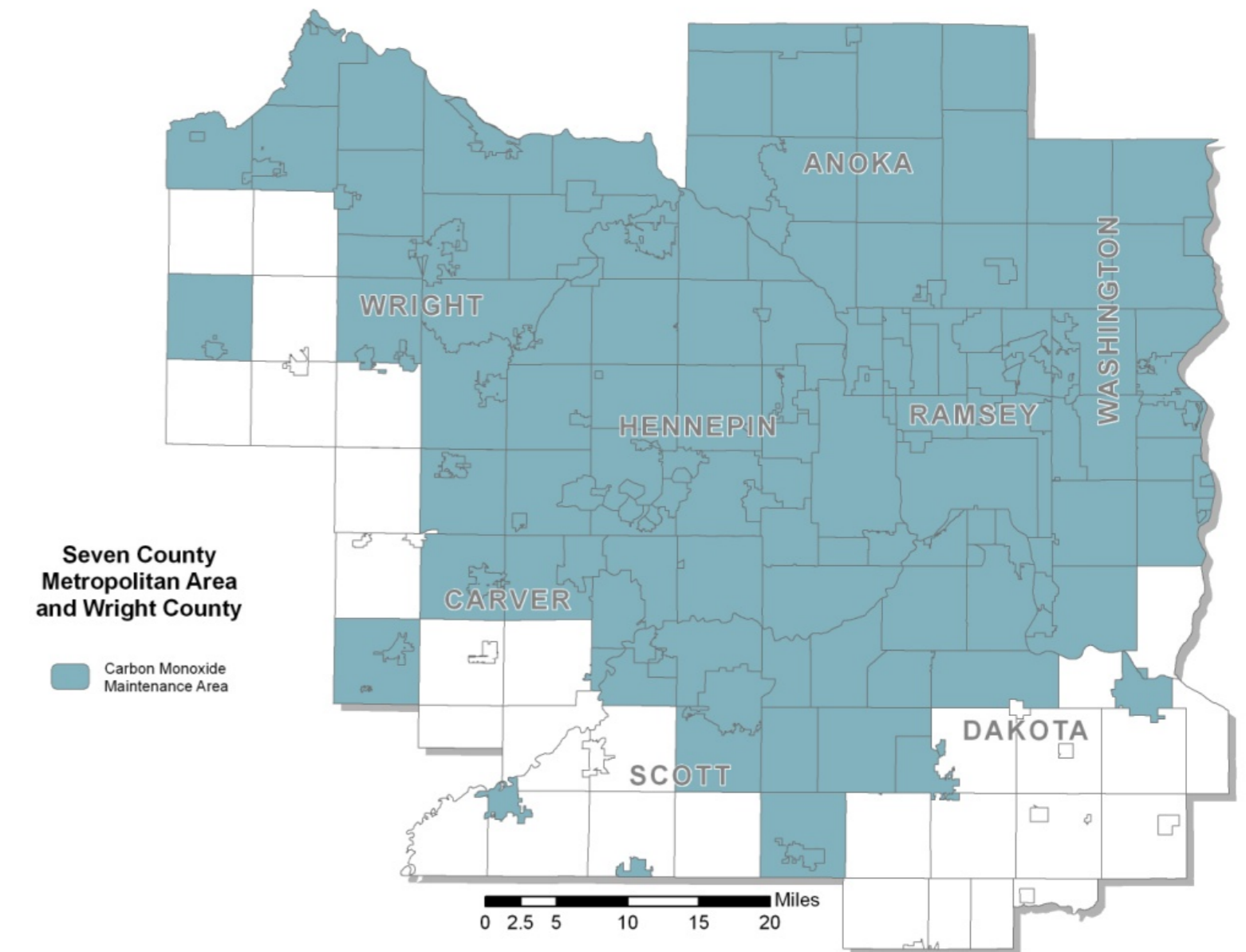
Colorless, odorless, toxic gas formed when carbon in fuels is not burned completely. CO enters the bloodstream and reduces the delivery of oxygen to the body's organs and tissues. Exposure to elevated CO concentrations is associated with vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. Prolonged exposure to high levels can lead to death. Carbon monoxide is also oxidized to form carbon dioxide (CO₂), which contributes to climate change. (source: MPCA)

Transportation Clean Air Act Conformity

- Applies in non-attainment and maintenance areas
- Clean Air Act requires that Federal agencies do not adopt, accept, approve or fund activities that are not consistent with State air quality goals.
- Detailed process described in regulations to determine that the TPP, TIP, and projects are in Conformity

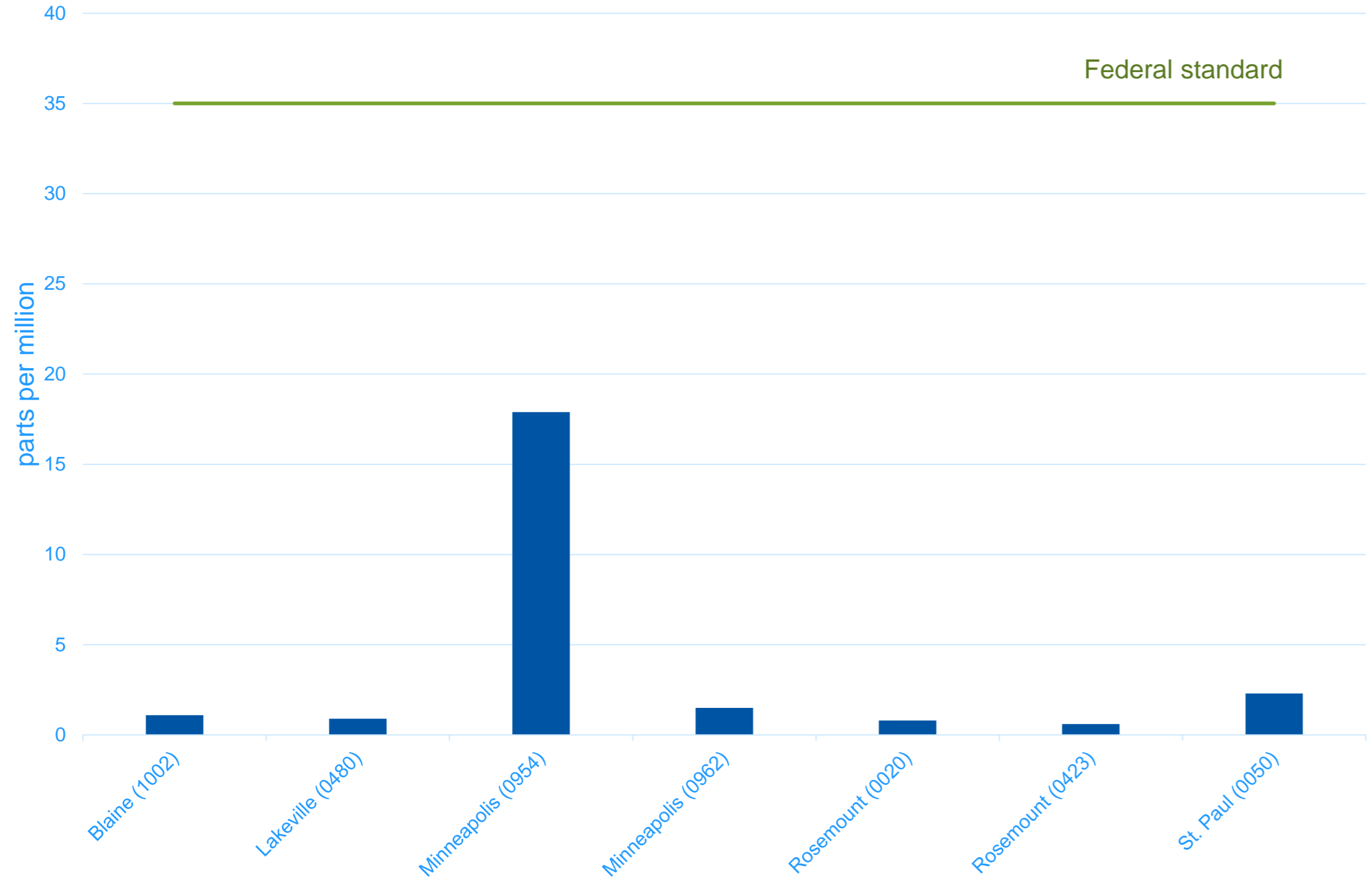
Carbon Monoxide History

- Non-attainment in the 1970s
- Last NAAQS violation: 1991
- Maintenance Area: 1999
- Limited Maintenance Area: 2010
- Maintenance Expiration: November 2019

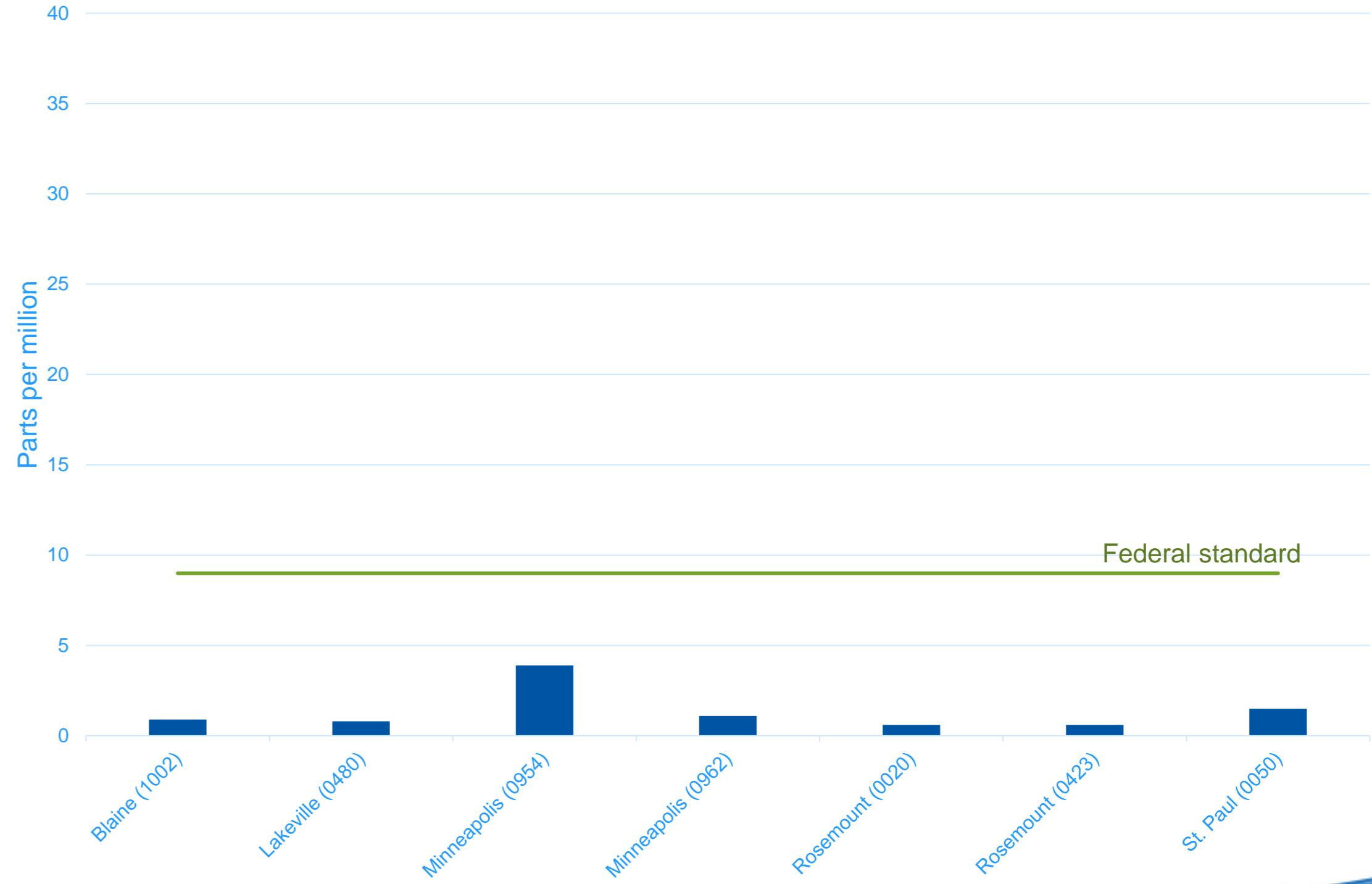


CO data compared to NAAQS (2018)

1-hour NAAQS



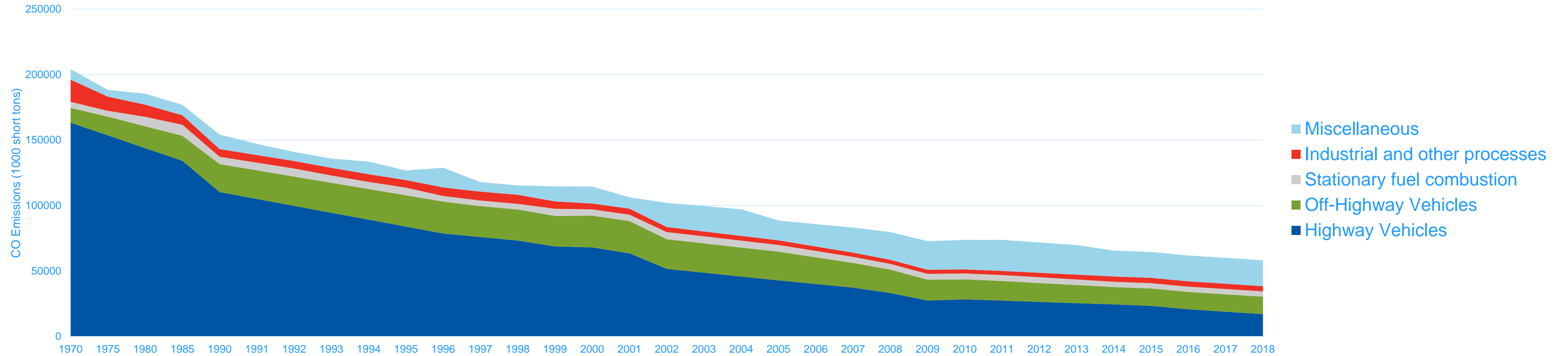
8-hour NAAQS



Source: MPCA 2020 Air Monitoring Network Plan for Minnesota



National Carbon Monoxide Emissions



Source: EPA National Air Emissions Inventory

Causes of CO emissions reductions

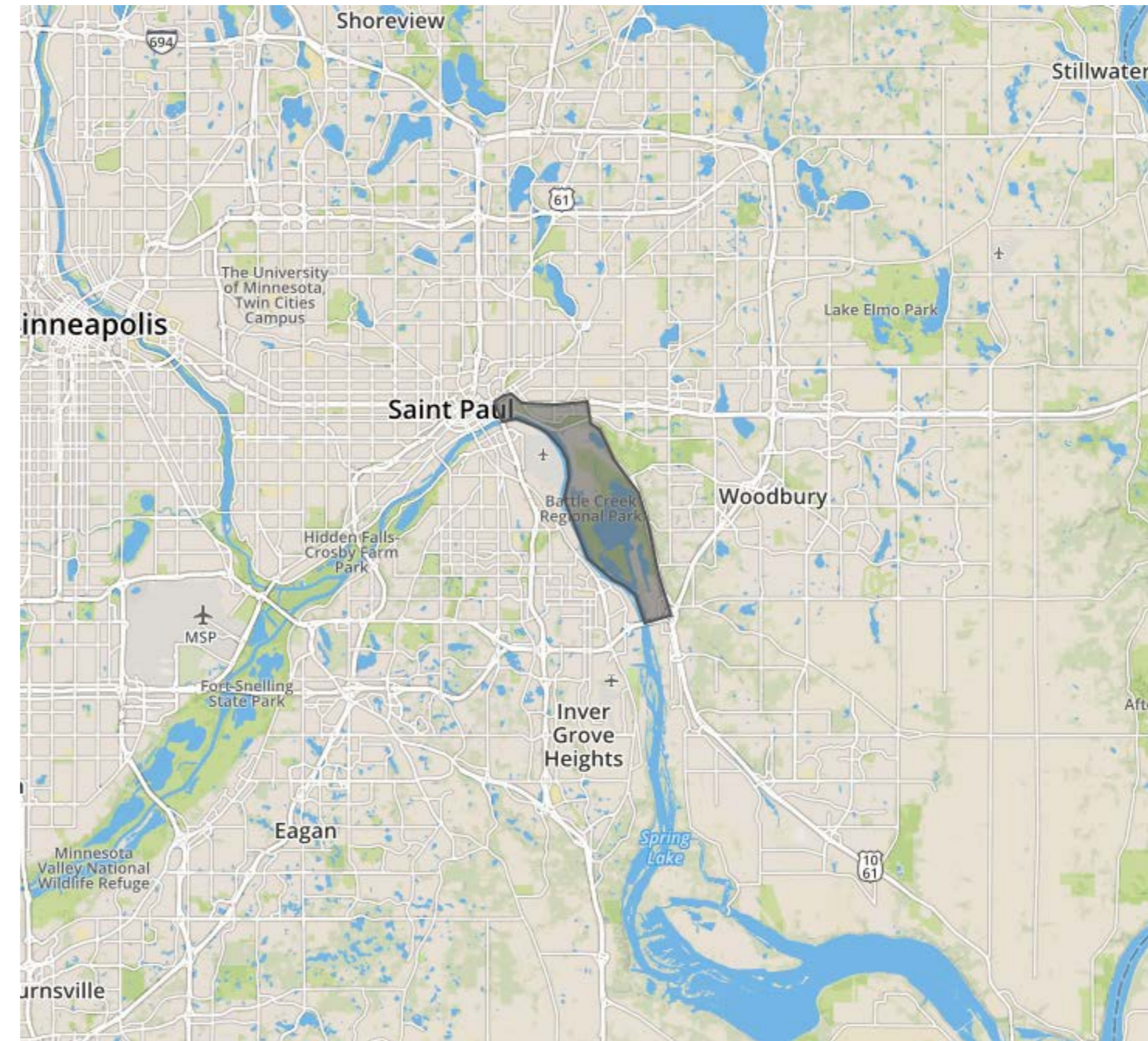
- Vehicle technology (catalytic converters)
- Fuels (oxygenated fuels)
- Transportation Control Measures
 - Enforcement: Enforcement of idling regulations, vehicle inspection / maintenance program
 - Management: metered freeways, traffic management systems,
 - Infrastructure: bus lanes, fringe parking programs, transit improvements, localized congestion improvements, park and ride

Consequences of expiration of maintenance

- Transportation Policy Plan update cycle- moves from 4 years to 5
- Conformity Determination no longer required for TPP, TIP and amendments
 - (with exception of PM10 maintenance area)
- Transportation Control Measures remain in effect
- Potential statewide CMAQ flexibility
- Reduction of emissions reduction value in FTA Capital Investment Grant program (this will make local projects rate slightly lower)

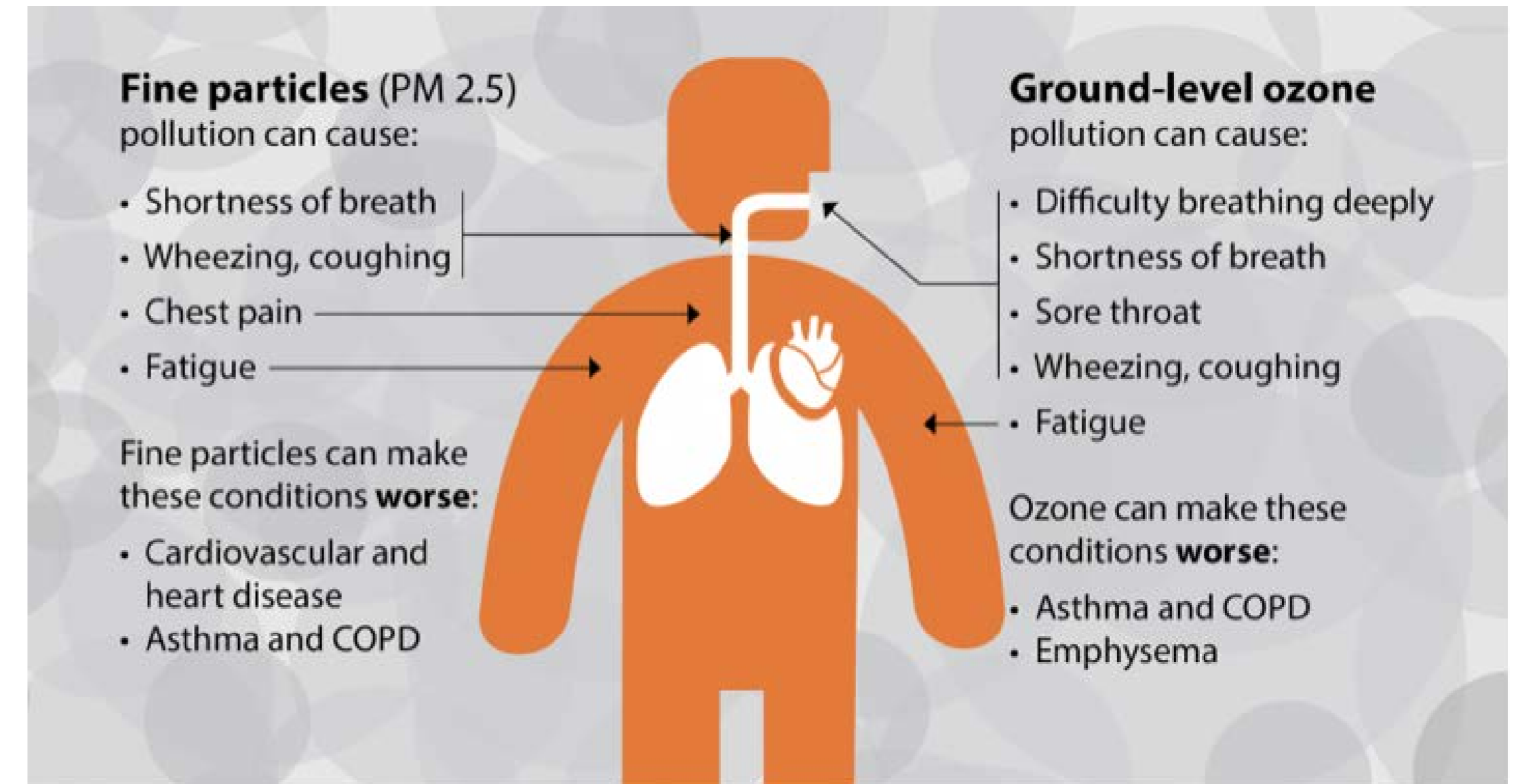
PM₁₀ Maintenance Area

- Small area of Ramsey County continues to be designated as maintenance for PM10
- Cause of NAAQS violations was non-transportation (industrial) sources
- Maintenance expires September 2022



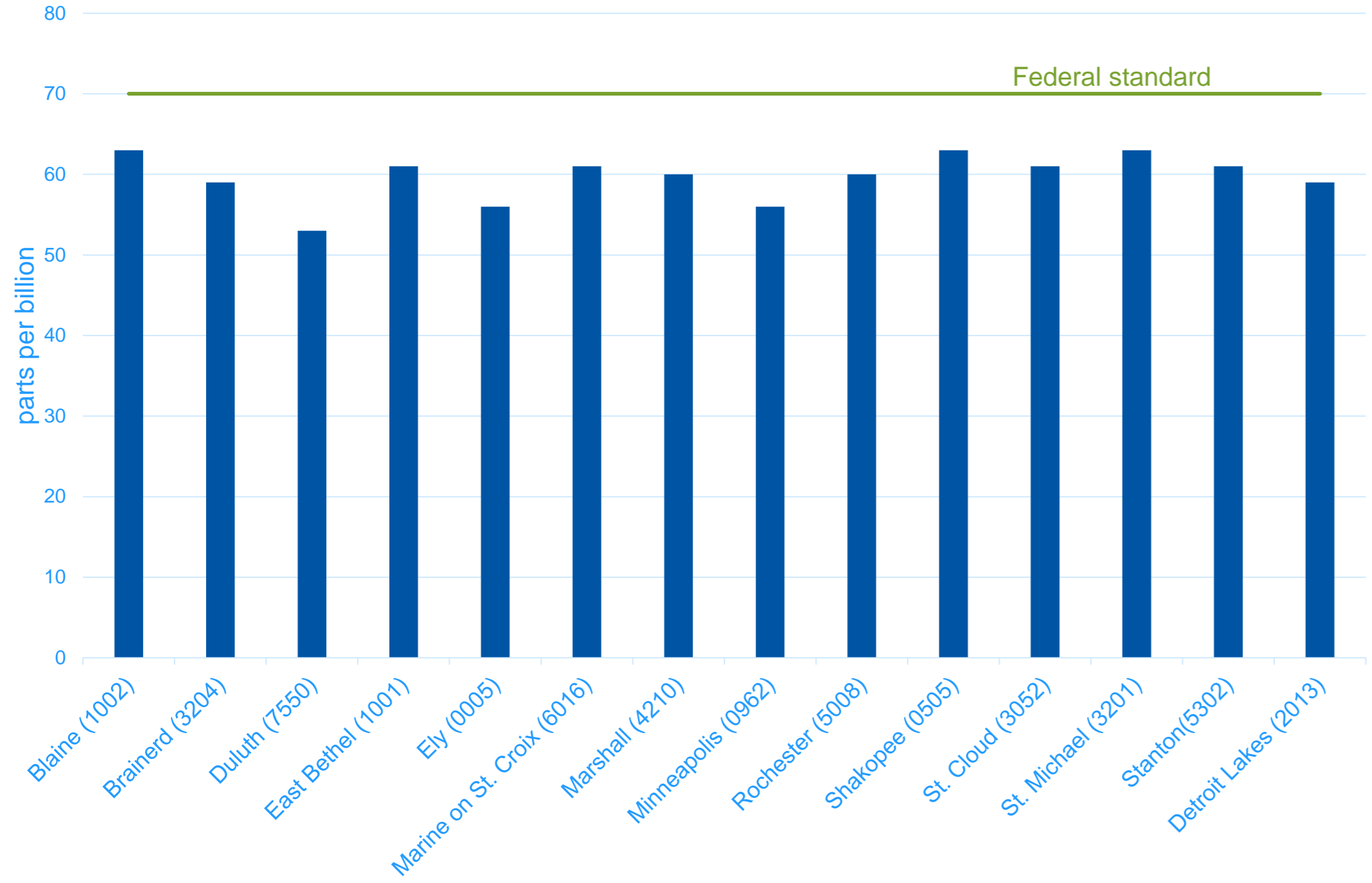
Region still needs to focus on reducing emissions

- Ozone and PM2.5, Monitoring data slightly better than NAAQS
- Causes of pollution:
 - Ozone: 25% from transportation sources
 - PM2.5: 40% from transportation sources
- Greenhouse gases
 - 14% from highway sources statewide (source: MPCA)

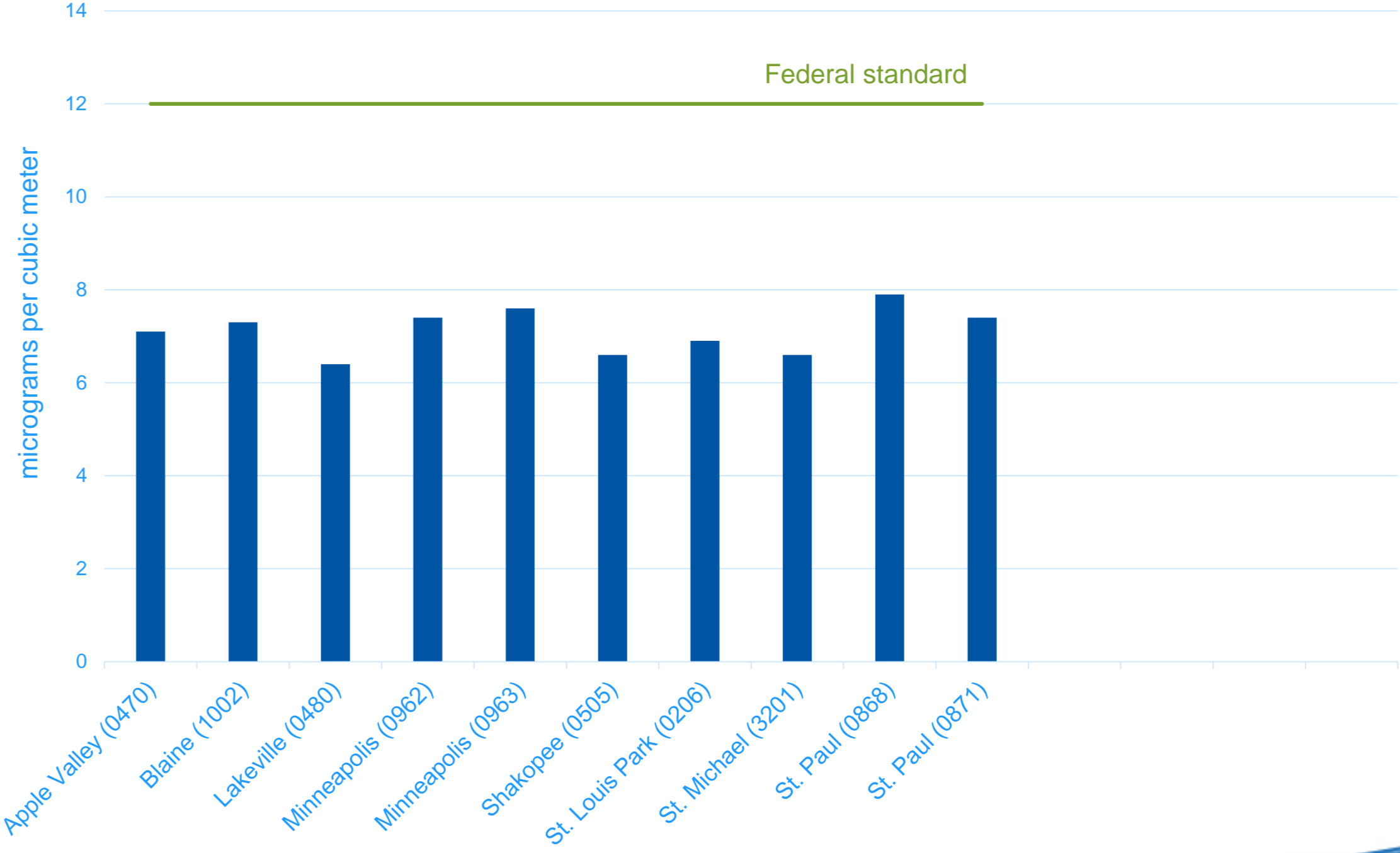


Selected Ozone and PM_{2.5} Data

8-Hour Ozone



PM_{2.5} (annual)



Upcoming Work

- Continue CAA Conformity process in PM 10 maintenance area
- Re-examine air emissions analysis process for TPP and TIP, develop process that meets local needs, ensures that investments are still focused on reducing emissions
- Focus analysis on current pollutants of concern: PM_{2.5}, Ozone, and greenhouse gases