

CITY OF MINNEAPOLIS

Ground-Level Ozone

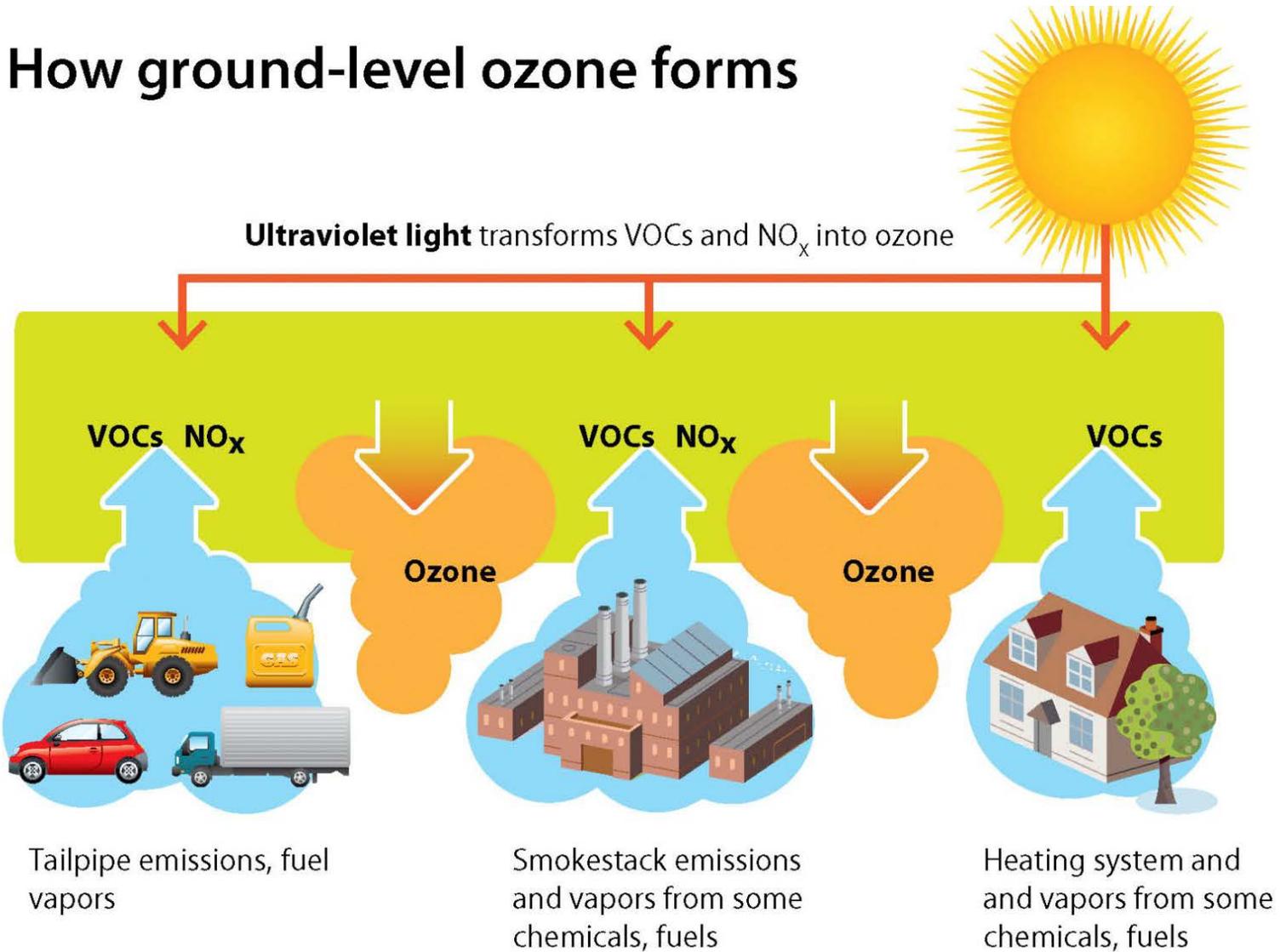
2014 Proposed Revision to Federal
Ozone Standard – What this means
for the City of Minneapolis

Clean Air Act

Air Quality Standards

- EPA uses its Clean Air Act authority to set National Ambient Air Quality Standards (NAAQS)
- NAAQS set for six pollutants
 - Particulate Matter (PM_{2.5} and PM₁₀), Ground-Level Ozone (O₃), Carbon Monoxide (CO), Sulfur Oxides (SO_x), Nitrogen Oxides (NO_x), and Lead (Pb)
- NAAQS reviewed for health protection - on five year schedule
- Attainment refers to meeting the standards

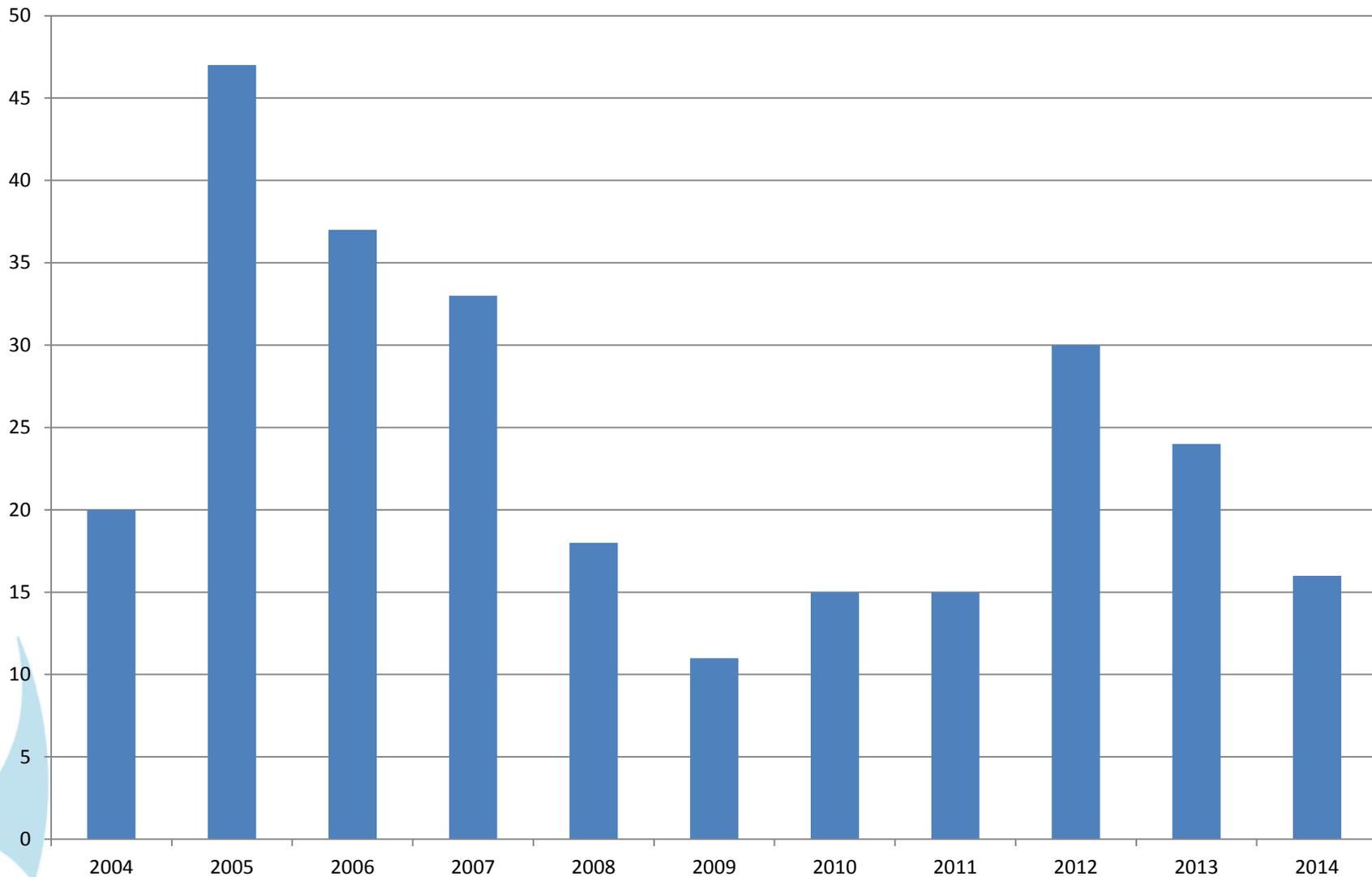
How ground-level ozone forms



Impacts of Ozone

- Primary component of smog
- Health effects
 - “sun-burn” of the lungs
 - respiratory infections
 - lung inflammation
 - aggravate pre-existing respiratory diseases
 - asthma
- Damaging to vegetation and the urban canopy

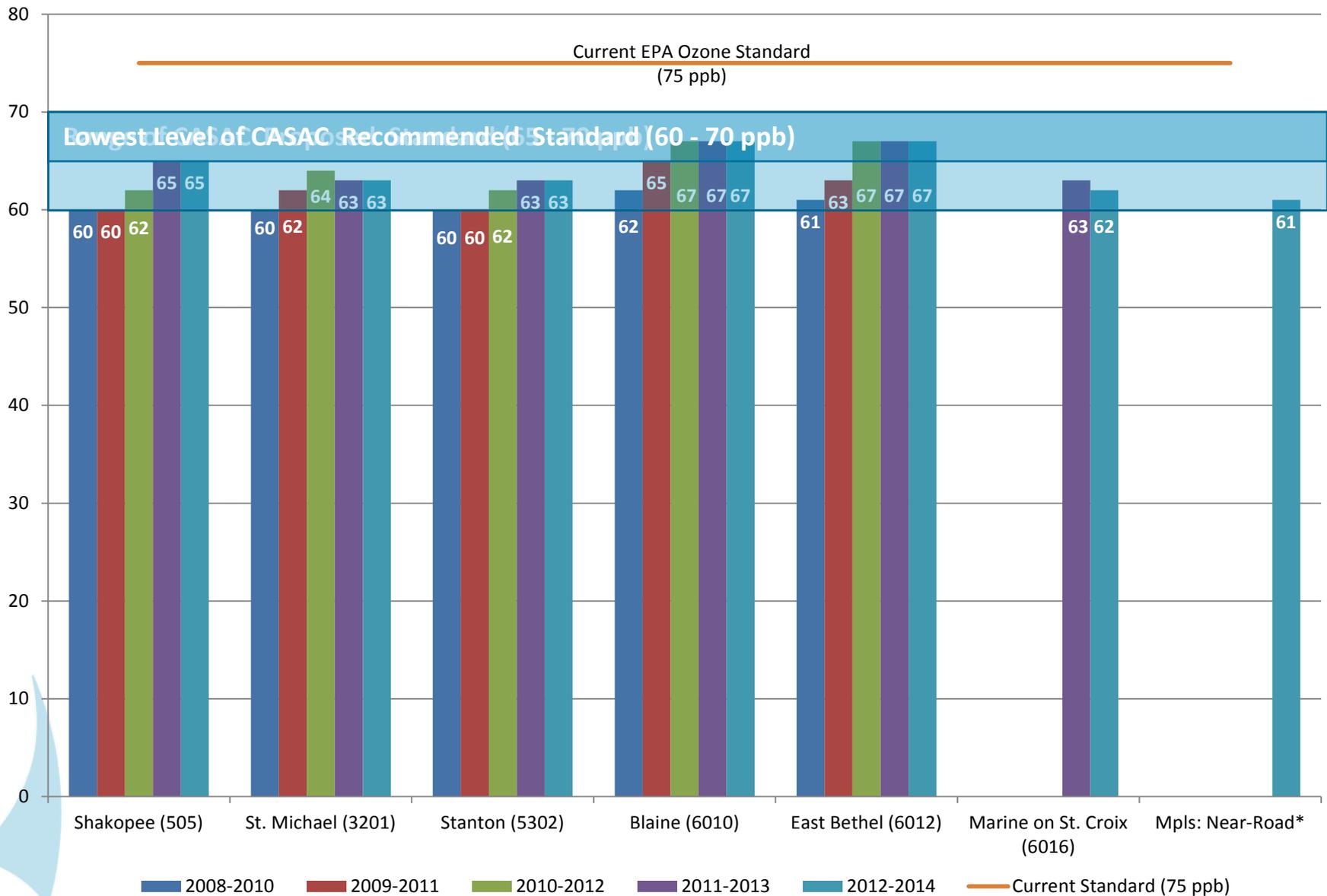
Days Twin Cities Exceeded Lower CASAC Ozone Health Recommendation of 60 ppb



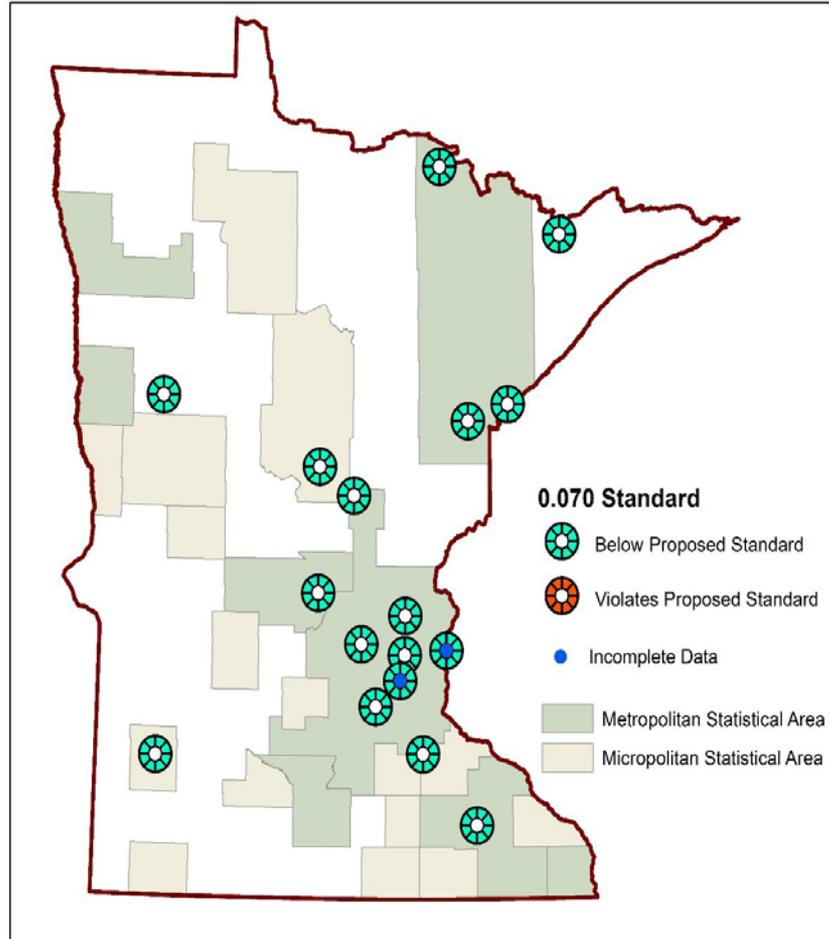
EPA's Proposed Standard Update

- EPA must review criteria pollutant standards every five years
- Nov. 25, 2014, EPA proposed to strengthen the NAAQS for ground-level ozone
- Current primary and secondary standards are 75 parts per billion (ppb)
- EPA's Clean Air Scientific Advisory Committee (CASAC) is proposing update of 65 to 70 ppb
- Lower CASAC ozone human-health based recommendation of 60 ppb

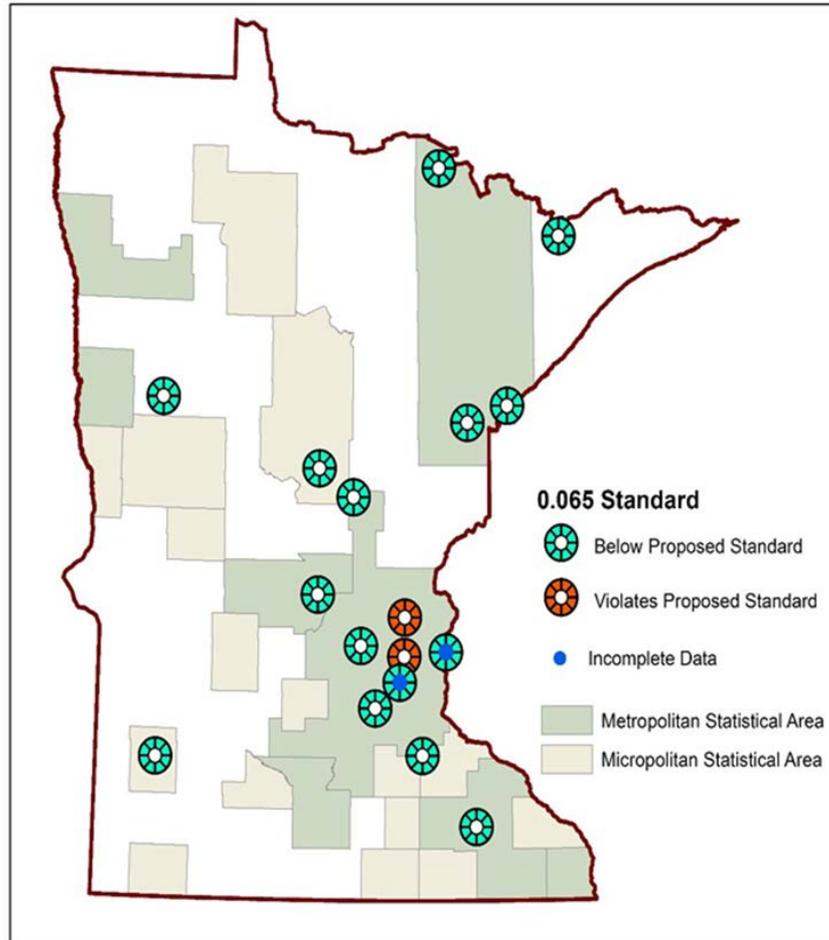
Twin Cities Ozone Concentrations (2010-2014)



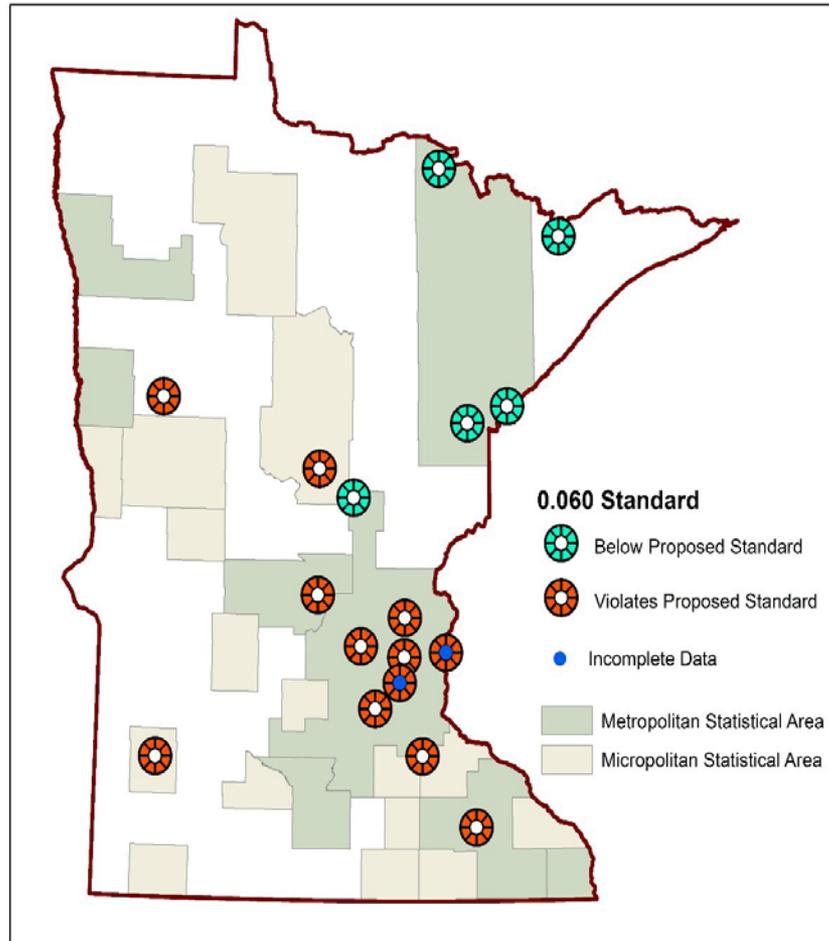
70 ppb standard



65 ppb standard

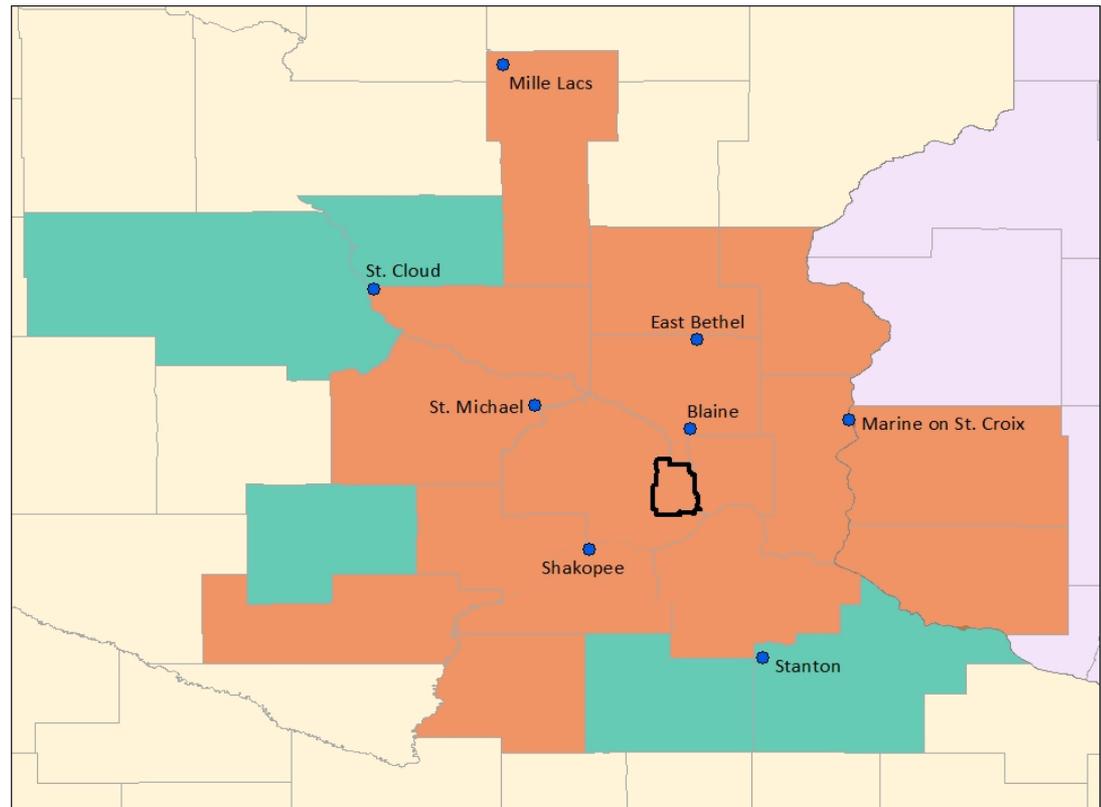


60 ppb standard



Exceeding the Standard

- Nonattainment
 - Marginal
 - Moderate
- Area
 - Nature of ozone
 - Area that causes or contributes
 - Core-based statistical area
- State Implementation Plan (SIP)



What Does This Mean for the City of Minneapolis?

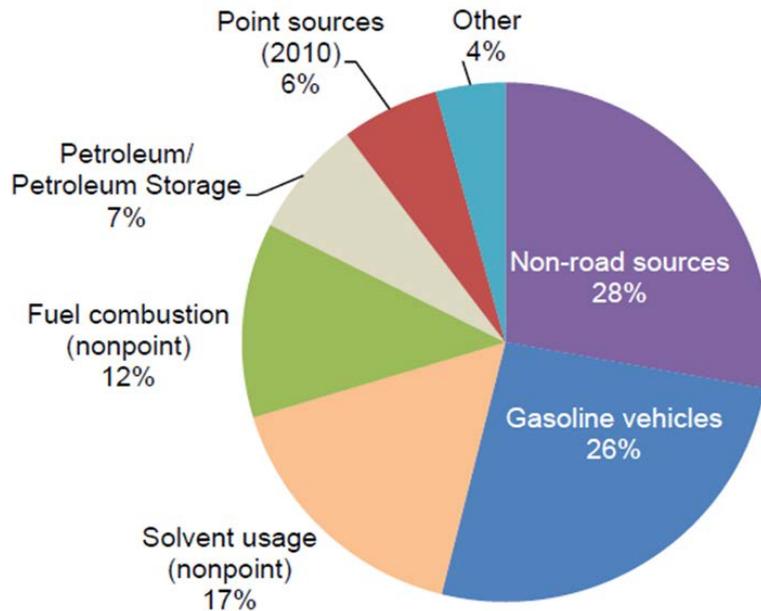
- Large facilities
 - Nonattainment new source review (NNSR)
- Transportation and general conformity
- Small businesses
 - VOCs
 - NO_x
- A Minnesota Chamber of Commerce study found that the cost of Milwaukee being in nonattainment in 1998 was \$189 million to \$266

Timeline

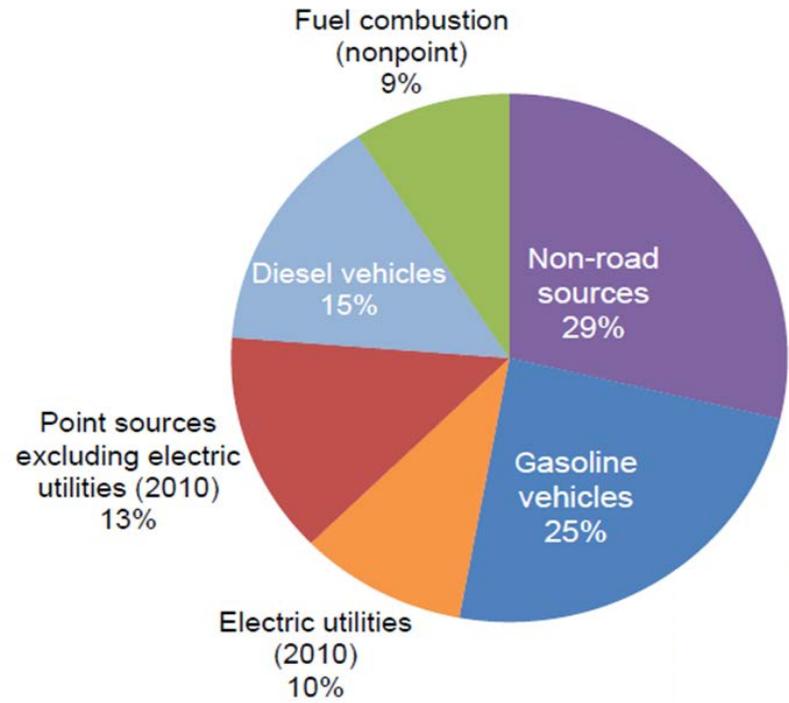
- October 1, 2015 – Final decision by EPA
- Late 2016 – MN recommends area designations to EPA
- Late 2017 – EPA finalizes designations
- Late 2020 – State Implementation Plan
- Late 2020 – Attainment deadline for marginal nonattainment areas
- Late 2023 – attainment deadline for moderate nonattainment areas

Sources of Primary Pollutants Contributing to Ozone Formation

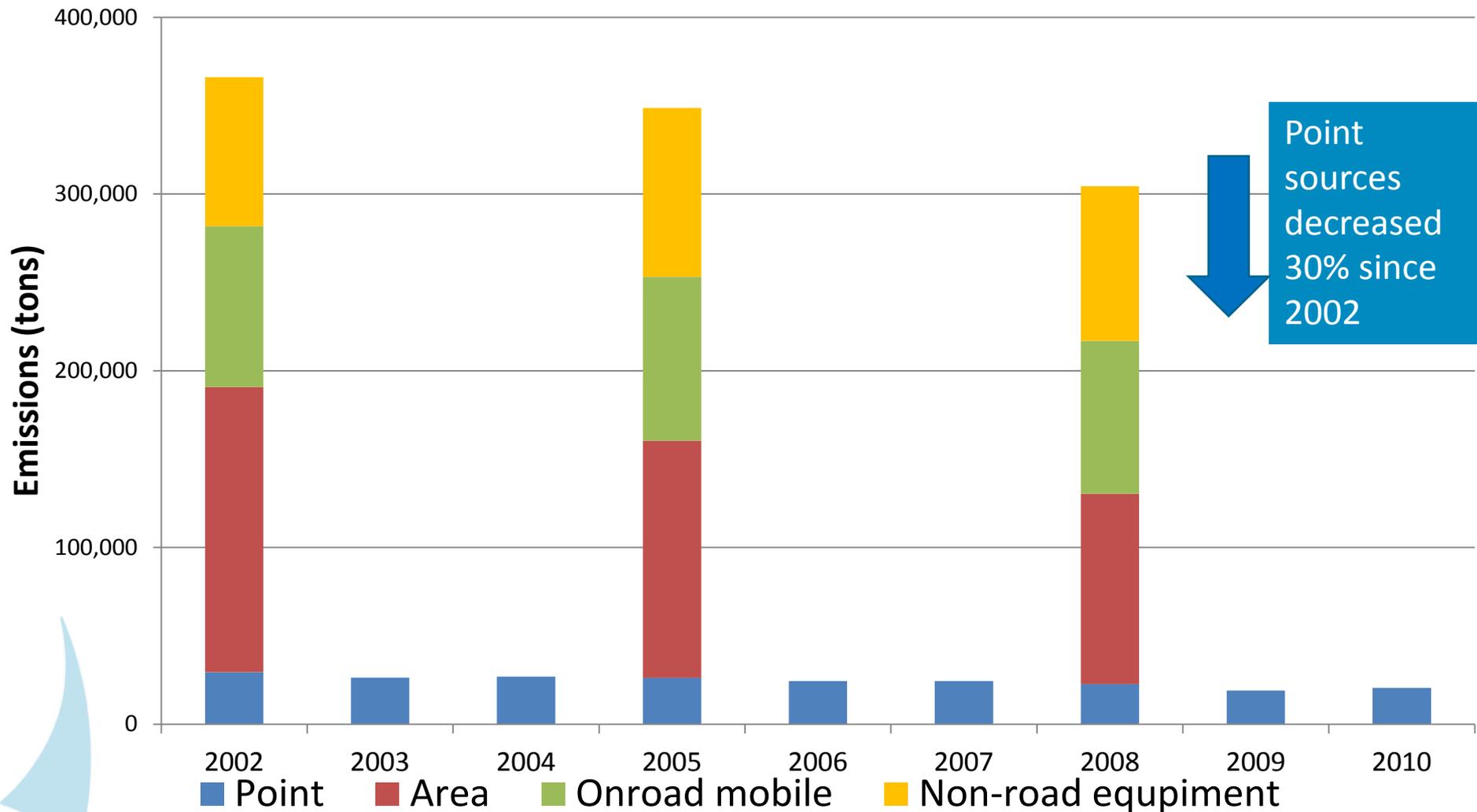
Volatile Organic Compounds (VOCs)



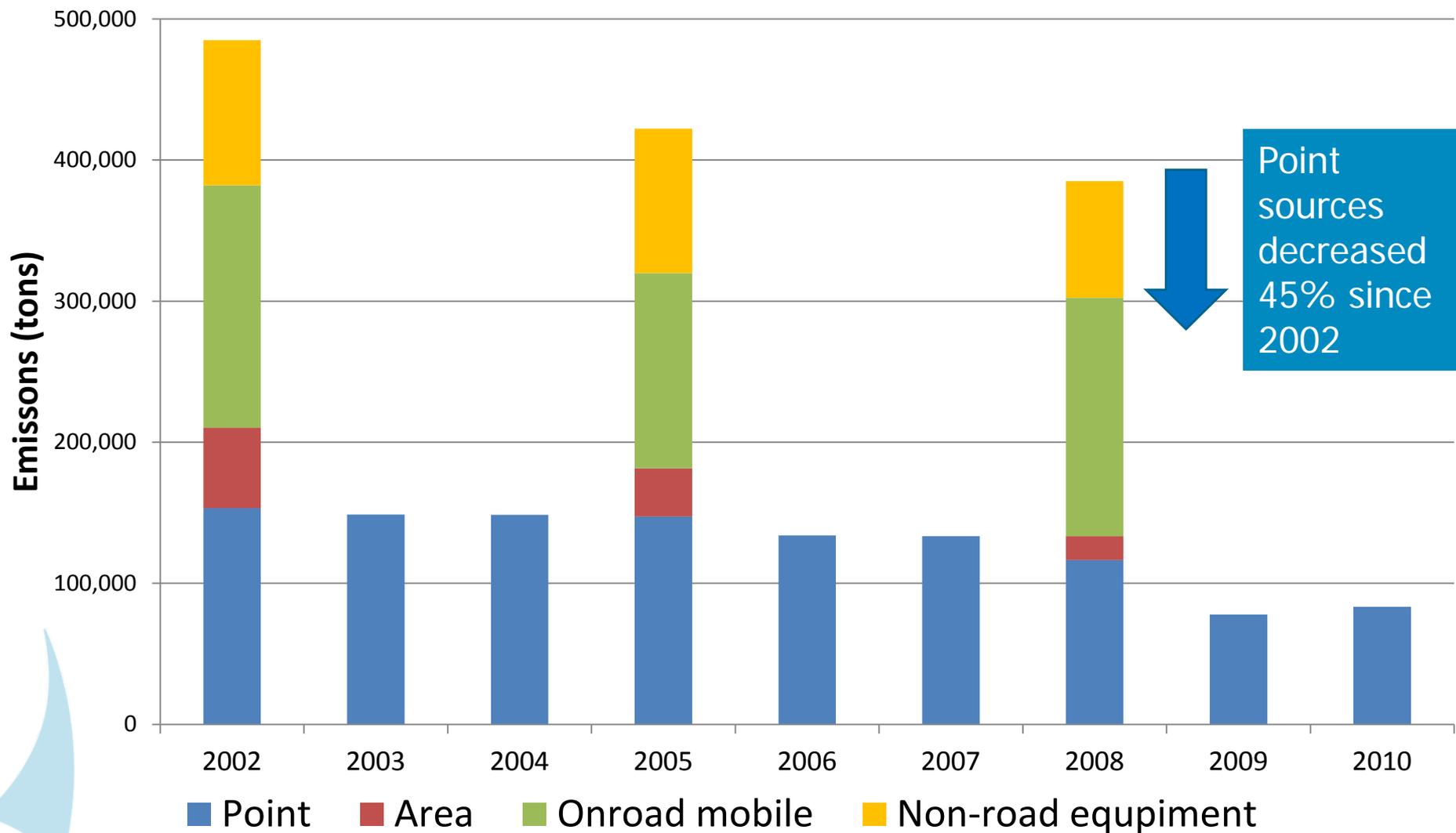
Nitrogen Oxides (NO_x)



VOC Emission Trends



NOx Emission Trends



What is Minneapolis Doing to Reduce Ozone?

- One of the cleanest public fleets in the nation
- Clean Energy Partnership
- Climate Action Plan
- Clean Air Minnesota
- Additional Monitoring: City study
- Green Business Matching Grant Program will have reduced 30,000lbs of emissions



Summary & Challenges

- Standards more stringent & harder to meet
 - Focus: NO_x, VOCs and direct PM_{2.5} emission reductions
- Voluntary reduction efforts
 - Avoid high regulatory costs of nonattainment
 - Reap health benefits of cleaner air now
- Existing regulatory structure will continue to reduce permitted smokestack emissions
- Need to work differently to address small sources



For More Information:

Link to MapIT Minneapolis:

<http://tinyurl.com/MinneapolisAirQuality>

Environmental Services

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<http://www.minneapolismn.gov/environment>

Minneapolis Health Department

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<http://www.minneapolismn.gov/health>

Information for this presentation was taken from EPA's website as well as personal communications with MPCA staff.