Development of a LADCO Total Risk Air Quality Management Framework

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LADCO | LAKE MICHIGAN AIR DIRECTORS CONSORTIUM


Isle Royale NP, MI


Boundary Waters Wilderness, MN

Objective

Enhance knowledge at LADCO to include decision support capabilities for considering health risks and emissions control costs for multiple air pollutants

Approach

- History Lesson
  - Review the evolution and current state of multi-pollutant air quality management (MP-AQM)
- Self Discovery
  - Review LADCO technical capacity in the context of MP-AQM
- Capacity Building
  - Work with EPA to augment LADCO's technical capabilities to support the MP-AQM life-cycle
- Make Friends
  - Develop relationships with EPA, SLTs, and stakeholders

Key Moments in MP-AQM History

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- Technical and Policy Recommendations
  - Air Quality Management in the United States (NRC, 2004)
  - Technical Challenges of Risk and Results Based Multi-pollutant Air Quality Management (NARSTO, 2007)
  - Recommendations to the Clean Air Act Advisory Committee (AQM Subcommittee, 2007)
  - Multi-pollutant Air Quality Management (Hidy and Pannell, 2010)
- Pilots and Case Studies
  - A Multi-pollutant, Risk-based Approach to Air Quality Management: A Case Study for Detroit (Wesson et al., 2010)
  - St. Louis Air Quality Management Plan (MDNR and IEPA, 2010)
  - U.S. EPA – South Carolina Collaboration to Develop a Multi-pollutant, Risk-based Air Quality Management Strategy for the Upstate South Carolina Region (SCDHEC and EPA, 2016)
  - SCAQMD and BAAQMD Air Quality Management Plans

MP-AQM Framework

SCDHEC & EPA (2016) MP-AQM project template

1. Project planning and team building
2. Data acquisition
3. Develop emissions control strategies
4. Calculate emissions control costs (CoST)
5. Air quality modeling (CMAQ/CAMx/AERMOD)
6. Adjust NATA with local emissions controls
7. Acquire local health data
8. Analysis, results, and conclusions
9. Craft and implement air quality management strategy

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LADCO's Current (2018) Capabilities

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LADCO's Current (2018) Capabilities

Where we will need outside collaboration

2016-18 Preliminary O_3 DVs

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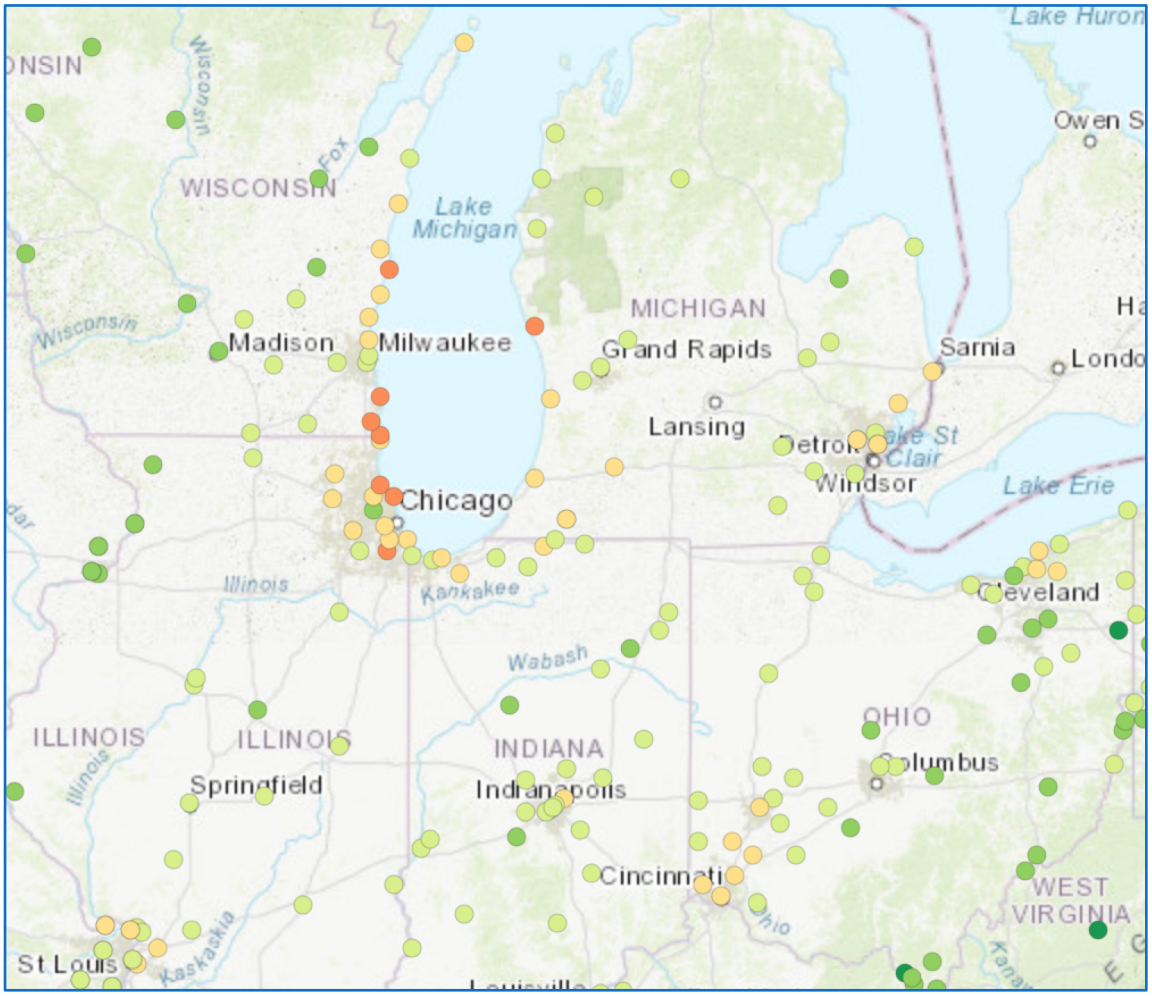
- > 0.08 – 0.088
- > 0.075 – 0.08
- > 0.07 – 0.075
- > 0.065 – 0.07
- > 0.06 – 0.065
- 0.049 – 0.06



Persistent attainment issues for the 2008 and 2015 O_3 NAAQS

Recent $PM_{2.5}$ Design Values

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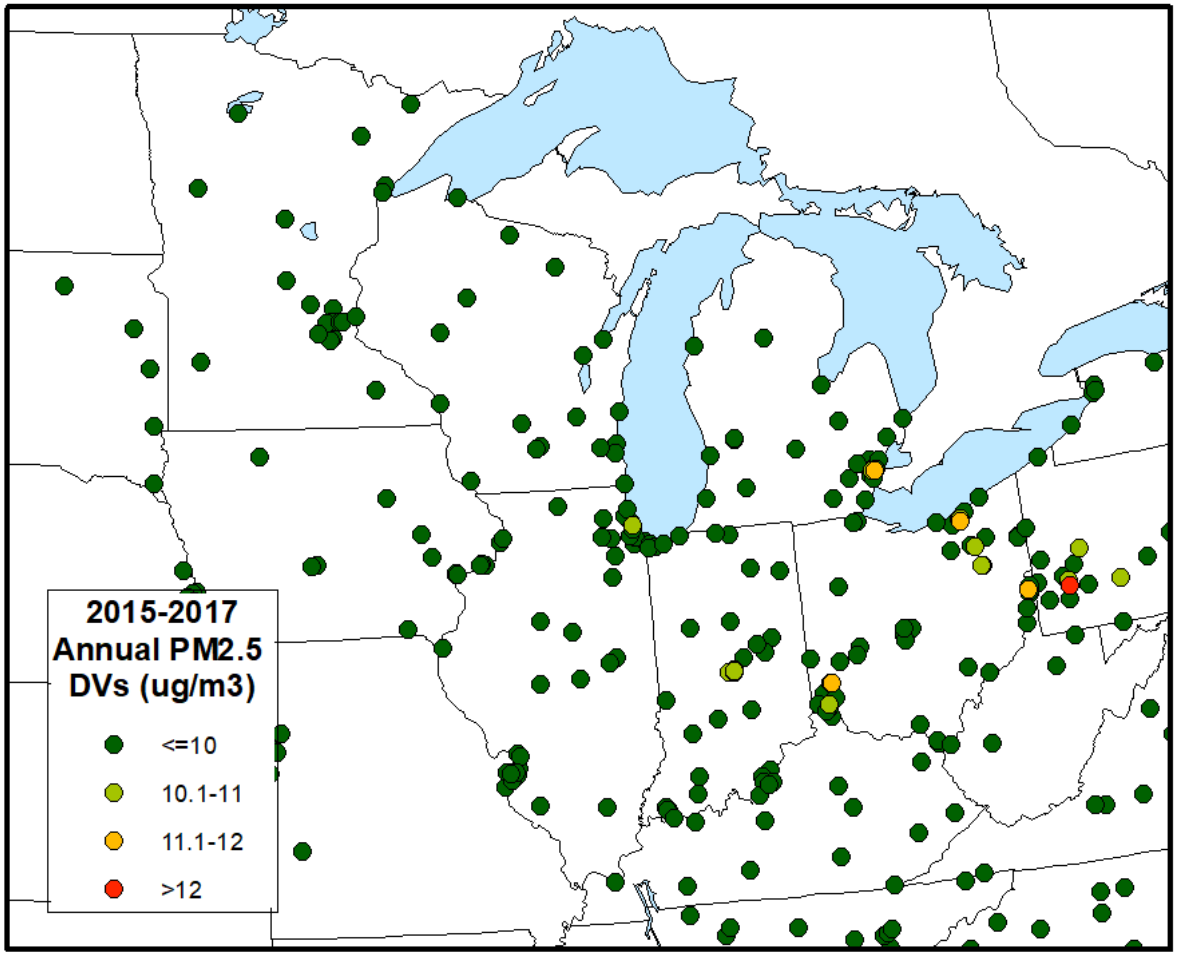
$PM_{2.5}$ NAAQS progress is good; indication that local/seasonal PM issues (hotspots) continue to be a problem in some areas



2014 National Air Toxics Assessment

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Elevated air toxics risks in urban areas and in the southern part of our region.

Beyond the Pilot

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Leverage LADCO technical capabilities to support MP-AQM planning across the region

Beyond the Pilot

- Is there interest/capacity in the states to pursue MP-AQM?
- What has happened since St. Louis and Detroit?
  - What did these states learn?
- Now that we have a technical roadmap for MP-AQM support, is there also a regulatory roadmap for states?
  - What statutory flexibilities are available for a state air program that wants to use MP-AQM?
- Is there space for MP-AQM in EPA's back-to-basics approach to clean air regulations?

LADCO's Next Steps

- **Manage expectations**
  - MP-AQM support is a 5 year plan for LADCO
- **Transparency**
  - Maintain a constant dialogue with our states to keep them informed about our work in this area
- **Tread lightly**
  - All technical planning and analysis will be passed by our states before discussions in a wider forum
- **Capacity Building**
  - Develop air toxics, emission control cost, and health impacts modeling capacity at LADCO