East-West Gateway Council of Governments
Air Quality Advisory Committee

Illinois Air Program Overview

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Topics

- *Ozone NAAQS Update*
- *PM2.5 NAAQS Update & Designation Impact*
- *SO_2 NAAQS Update & What's Next*
- *Cross State Air Pollution Rule (CSAPR)*

Ozone NAAQS Update

- Two Nonattainment Areas for 2008 Ozone NAAQS
  - Chicago and Metro-East St. Louis
    - Both Marginal nonattainment
    - However, neither area met attainment deadline using 2012-2014 monitor data (court decision does <u>not</u> allow use of 2015 data)
    - St. Louis area can apply for a one-year extension; Chicago area *cannot* and may face a bump-up
    - If 2015 data brings the Chicago area into attainment, may be able to request redesignation at almost the same time as a bump-up
  - Precursor Inventory sent to USEPA
    - This fulfills Illinois' requirements at this time
- Chicago & Metro-East St. Louis areas previously redesignated attainment for 1997 standard

Hot Spring + Summer = Ozone Exceedances

Illinois Statewide Ozone Exceedance Days

Year	Days	Site Exceedances
2007	32	36
2008	4	5
2009	4	9
2010	23	41
2011	27	80
2012	45	254
2013	8	15
2014	5	16

Top 5 IL Exceedance Years (since 1998 at 75 ppb)

1.	51	1999
2.	48	2002
3.	45	2012
4.	45	1998
5.	43	2005

Region 5 Ozone Three-Year Design Values

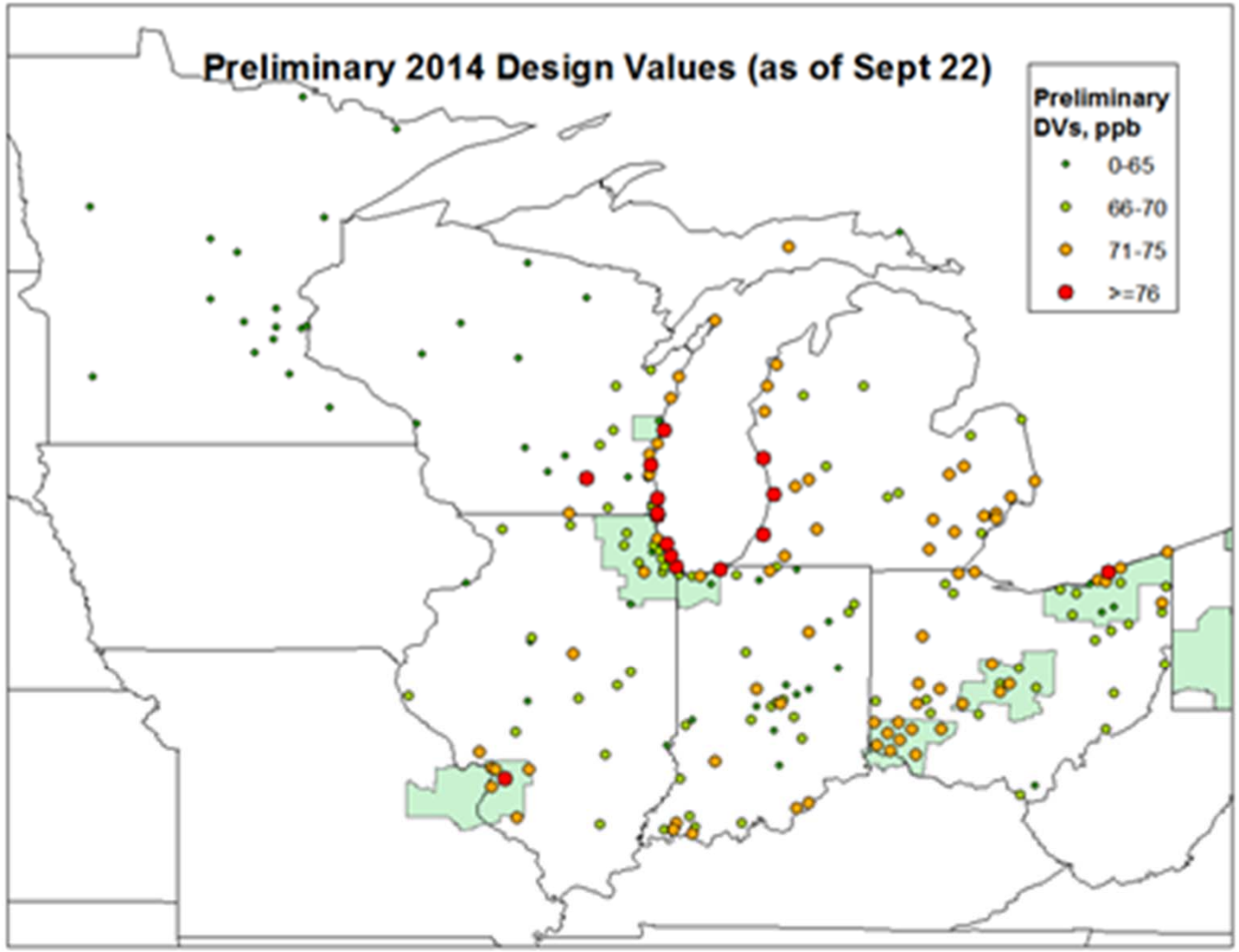
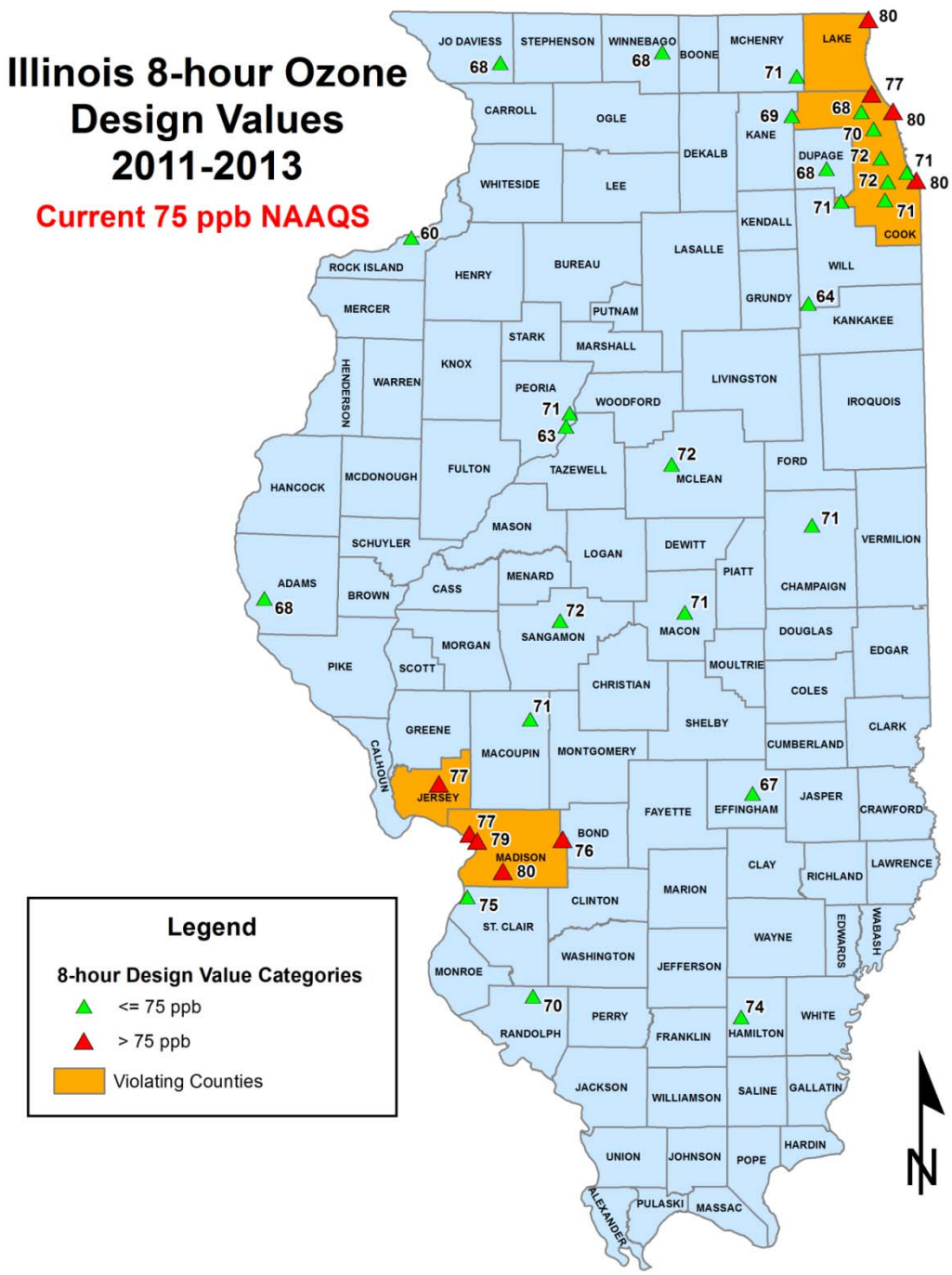


Image Courtesy of LADCO

New Ozone Nonattainment Areas?

- USEPA proposed a range of possible new standards.
- USEPA will finalize by October 1.
- What will the new level be? 70? 65? 60?

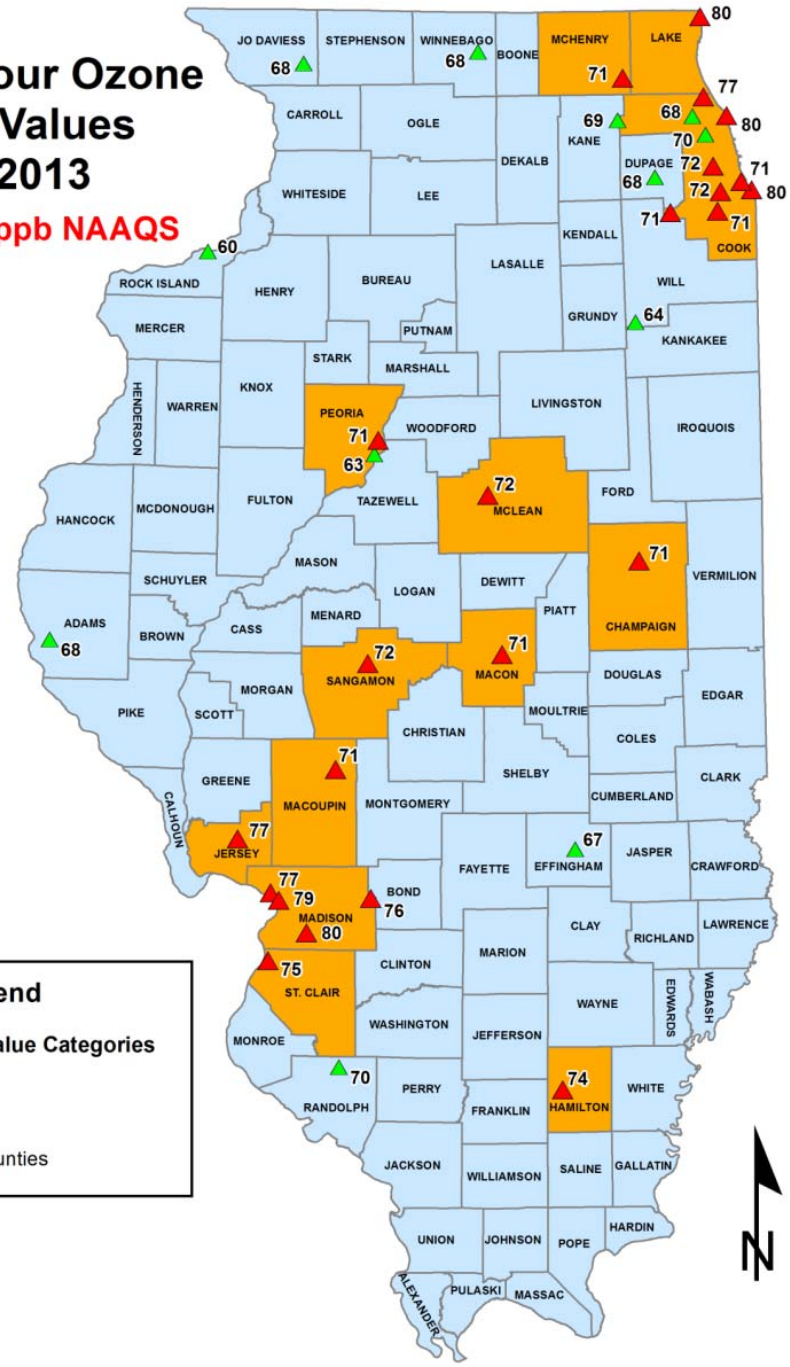
Note that these maps show only the counties with monitored values, not the full areas as they would be designated.



Source: USEPA's AQS Ozone Design Value Report for 2013.

Illinois 8-hour Ozone Design Values 2011-2013

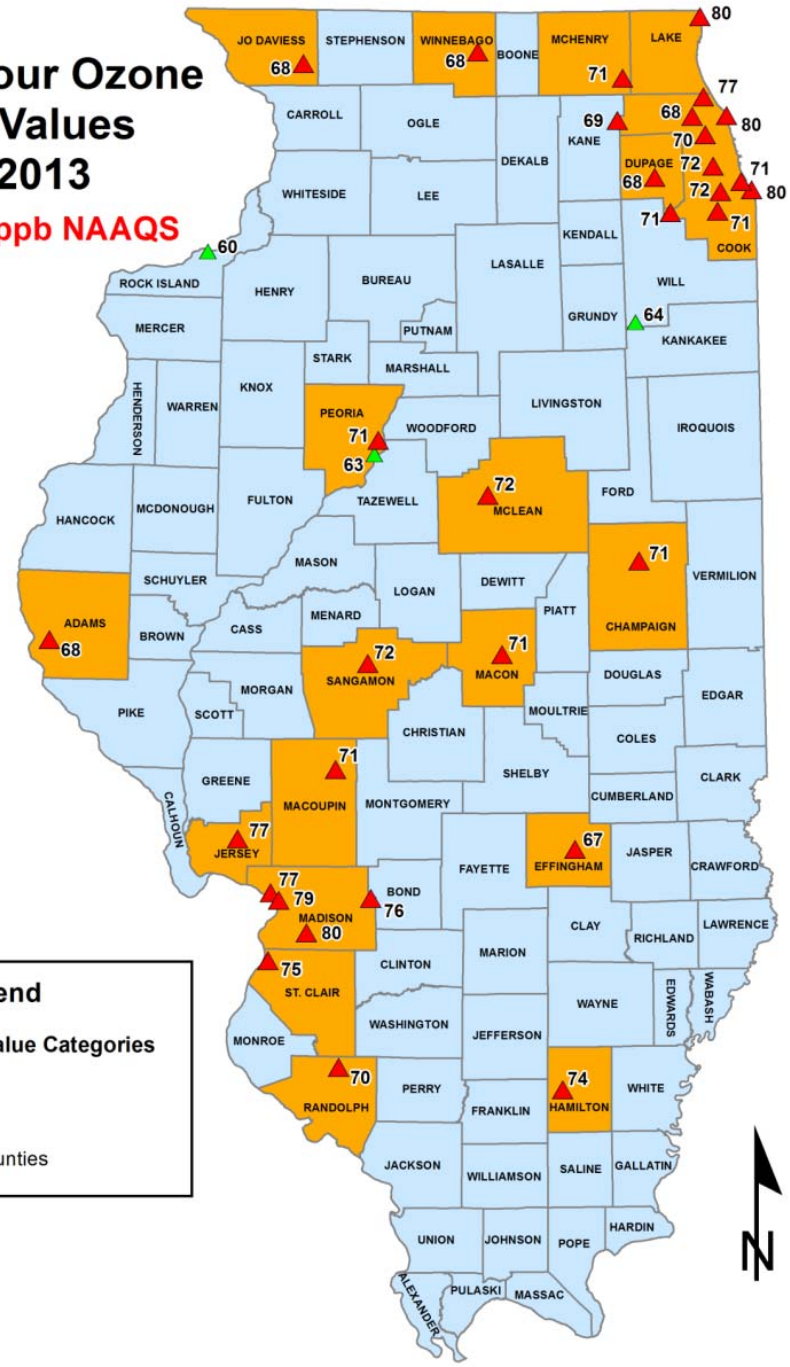
Proposed 70 ppb NAAQS



Source: USEPA's AQS Ozone Design Value Report for 2013.

Illinois 8-hour Ozone Design Values 2011-2013

Proposed 65 ppb NAAQS



Legend

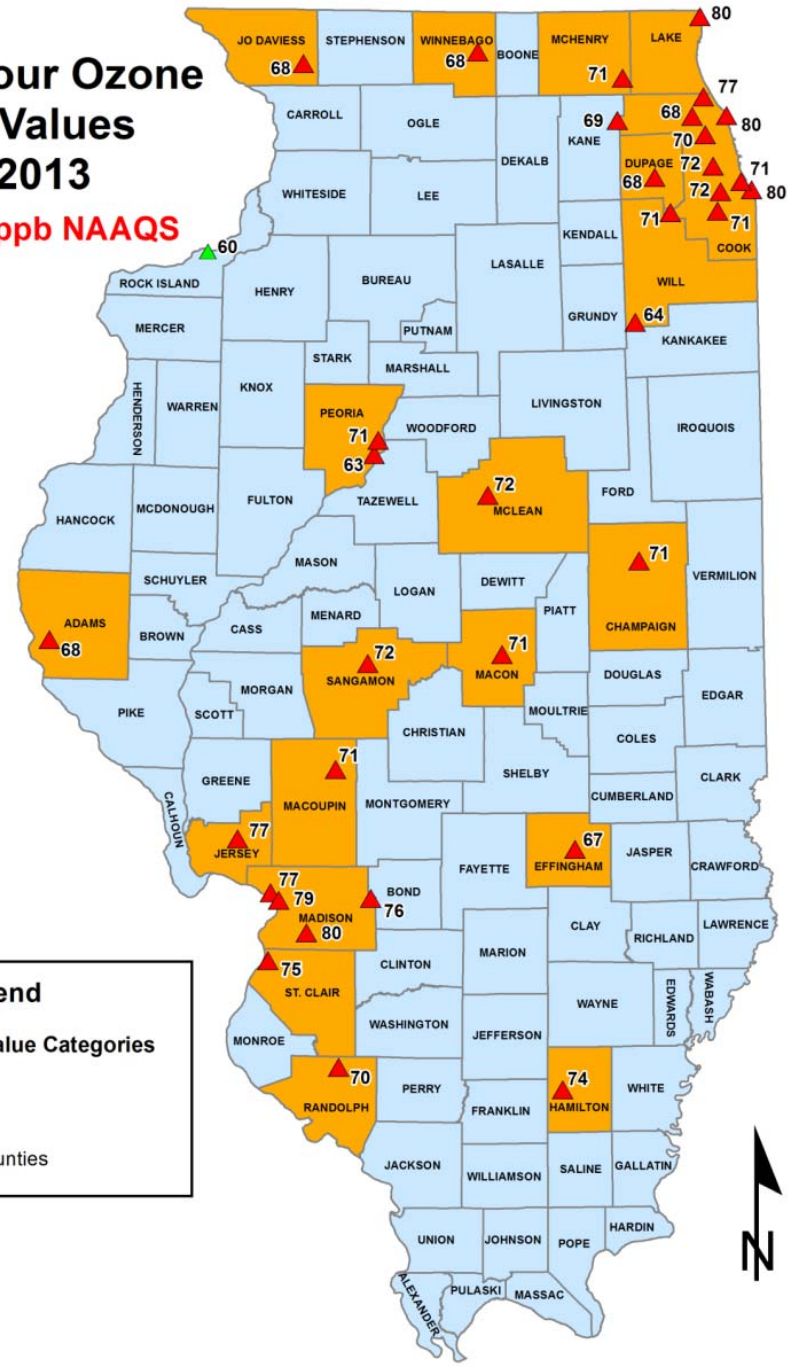
8-hour Design Value Categories

- <= 65 ppb
- > 65 ppb
- Violating Counties

Source: USEPA's AQS Ozone Design Value Report for 2013.

Illinois 8-hour Ozone Design Values 2011-2013

Proposed 60 ppb NAAQS



Legend

8-hour Design Value Categories

- <= 60 ppb
- > 60 ppb
- Violating Counties

Source: USEPA's AQS Ozone Design Value Report for 2013.

Other New Ozone Nonattainment Areas?

- In addition to the areas noted on the previous maps, ozone design values (monitored values) in surrounding states may cause additional areas of Illinois to be considered nonattainment even if Illinois monitors don't exceed the new NAAQS level
  - For example, parts of Southern Illinois and/or Rock Island County could be included

PM2.5 NAAQS

- New 2012 PM2.5 standard
  - 12 μg/m^3
  - Illinois NAA designation recommendations submitted in Dec. 2013
    - "Classic" Chicago NAA and Metro-East NAA

BUT…

The entire State of Illinois was categorized by USEPA as "Unclassifiable"

PM2.5 Data Quality Issues

- PM2.5 in Illinois is currently measured via filter-based monitors
- Cook County's Lab analyzes all of Illinois' PM2.5 samples statewide
- For period of 2011-2013, a USEPA audit found 61% of samples analyzed did not meet criteria for proper analysis (humidity, temperature, holding times, or recordkeeping related to these)
- Invalid data cannot be used for attainment classifications; therefore there was insufficient valid data available to make classifications

PM2.5 Data Quality Issues, cont.

- USEPA uses “Unclassifiable" when it cannot be determined, based on available information, whether or not the area is meeting the NAAQS or if the area contributes to a nearby violation

- In addition to all of Illinois, two areas linked to Illinois – including St. Louis (and Indiana counties near Chicago) – are designated “Unclassifiable”

“Unclassifiable”?

- “Unclassifiable” – USEPA can later classify the area to attainment or nonattainment with 3 full calendar years of data
- “Unclassifiable/Attainment” – requires additional justification to be submitted to USEPA to redesignate if later data shows nonattainment
- Permitting and other implications still being reviewed and discussed with USEPA

The Current PM2.5 Situation

- Chicago area redesignated attainment for 1997 standard in October 2013
  - “Unclassifiable” does not add any requirements that would be attached to a “Nonattainment” designation
- Metro-East St. Louis area has a Clean Data Finding but Illinois EPA has not yet sought redesignation to attainment due to modeling issues
  - Thus, that area is still considered “Nonattainment” and will continue to be subject to requirements appropriate to nonattainment areas

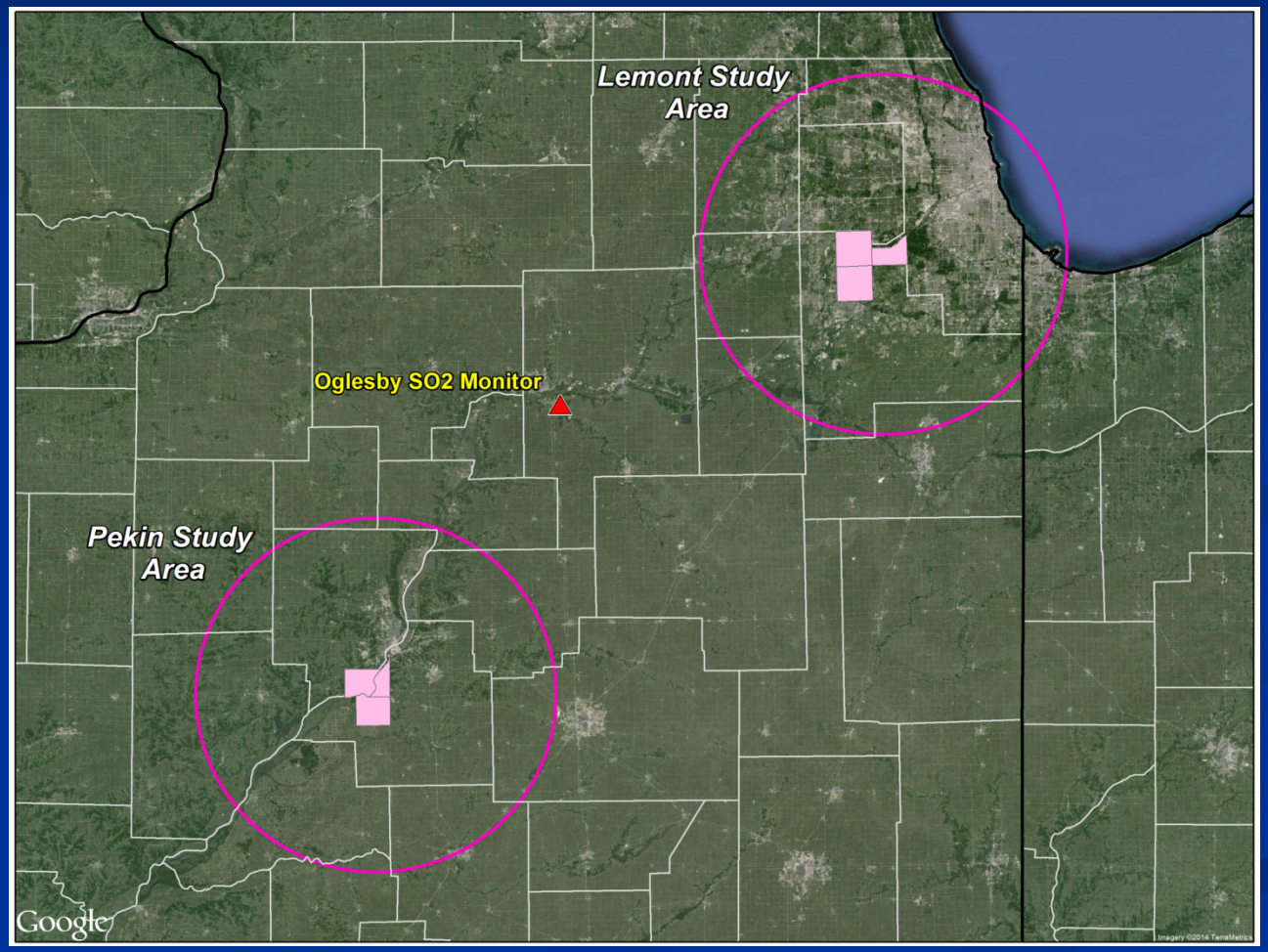
PM2.5 – Moving Forward

- Illinois EPA, USEPA, and Cook County have been working together to fix the Cook County lab problems and guard against them recurring in the future.
- Recent USEPA and contractor audits of the Cook County lab had no negative findings.
- USEPA has determined that Illinois PM2.5 data is valid as of mid-July.

SO_2 NAAQS – Nonattainment Areas

- Two Illinois Nonattainment Areas for 2008 SO_2 NAAQS
  - Peoria/Pekin area & Lemont area
- Modeling
  - Extensive modeling has been done to identify all "culpable" sources of nonattainment within the NAAs
  - Discussions with sources
- Next Steps
  - Propose statewide rule for sulfur content in fuel oil
  - Move forward with rules covering specific sources impacting the NAAs

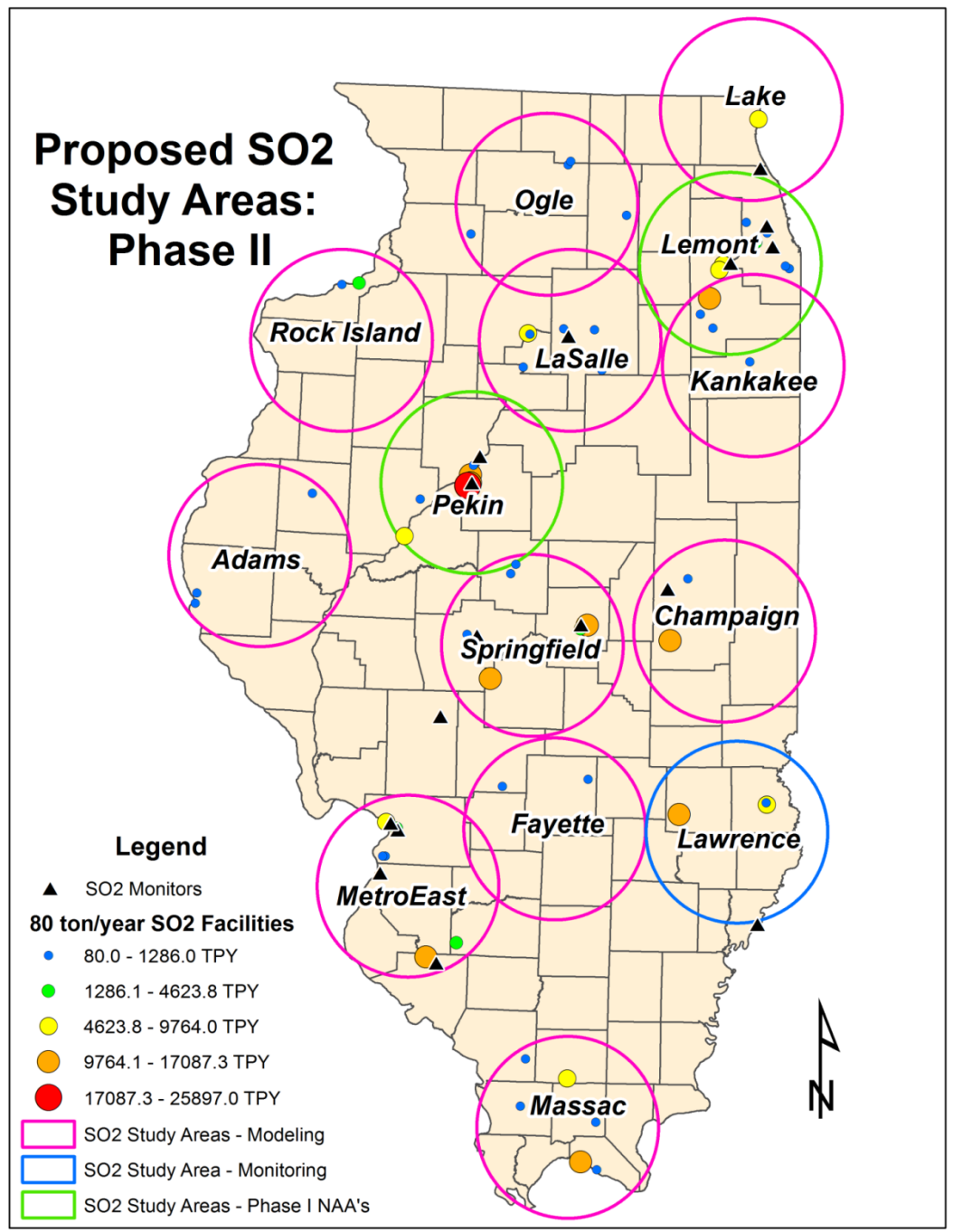
SO_2 Modeling Domains and Background Monitor



SO_2 NAAQS – Undesignated Areas & Data Requirements Rule

- All other areas in the State are "undesignated"
- Monitoring and/or modeling will determine which new areas become nonattainment (modeling is the default)
- Expected implementation timeline for States:
  - 2015: Decide on modeling vs. monitoring for each area.
  - January 2016: Provide modeling protocols & identify monitoring areas
  - January 2017: Have new monitoring sites operational and submit modeling analyses & NAA boundary recommendations.
  - December 2017: USEPA designates new areas based on modeling.
  - 2020: Submit NAA boundary recommendations for monitored areas.
  - December 2020: USEPA designates new areas based on monitors.
- Attainment dates no later than five years after designations.

** Federal court case settlement may cause some power plant areas, including one in the Metro-East, to be modeled on an accelerated schedule.*


Proposed SO2 Study Areas: Phase II
Lake
Ogle
Lemont
Rock Island
LaSalle
Kankakee
Pekin
Adams
Champaign
Springfield
Fayette
Lawrence
MetroEast
Massac
Legend
SO2 Monitors
80 ton/year SO2 Facilities
80.0 - 1286.0 TPY
1286.1 - 4623.8 TPY
4623.8 - 9764.0 TPY
9764.1 - 17087.3 TPY
17087.3 - 25897.0 TPY
SO2 Study Areas - Modeling
SO2 Study Area - Monitoring
SO2 Study Areas - Phase I NAA's
N

SO_2 NAAQS – Early Reductions to Avoid Nonattainment

- Sources can work with Illinois EPA to potentially avoid nonattainment designations by establishing enforceable emission limitations to show modeled attainment prior to the 2017 designations – sources should contact us if interested!
- It appears USEPA will allow these limits to be deemed enforceable via permit, SIP, consent decree, etc.
- Sources can take into consideration emission reductions that will be implemented due to MATS and other rules.

SO_2 NAAQS – Monitoring

- Sources/areas that are monitored instead of modeled have *three extra years* to determine attainment designation.
- Any company interested in monitoring should contact me as soon as possible.
- Monitors will need to be funded by sources.
  - The existing presence of a monitor in a given county/area does not guarantee that monitor can be used to determine the attainment designation relative to a source.
- Proposed Data Requirements Rule: Monitors may need to stay beyond three years. A monitor must have a three-year design value no greater than 50% of the NAAQS (though 80% is a possibility for the final Rule).

Cross State Air Pollution Rule

- *aka* CSAPR, “CAIR Replacement,” or “Transport Rule”
- Addresses Ozone and PM2.5 Transport (upwind states to downwind state problems)
- Rule targets coal-fired power plants but affects everyone because sufficient emission reductions are needed to reach attainment and if not from this rule (these sources) then EPA needs to look elsewhere = new rules impacting other sources of NOx and SO2

CSAPR Is Back!

April 29, 2014: U.S. Supreme Court overturned Appeals Court that had vacated CSAPR.

USEPA is aware of unmeetable implementation deadlines, changes in attainment status and overall emissions, and other now-outdated information used for CSAPR since the original date of promulgation. Rule addressed now outdated 1997 and 2006 standards.

- But CSAPR is in effect as of January 1, 2015!
- On January 22, USEPA issued a memo to help states address SIP requirements. Illinois EPA is reviewing.

Other Transport Efforts

- In preparation for CSAPR returning and other transport efforts, various states and organizations have been investigating and modeling different scenarios
- LADCO helping to lead efforts for better power plant growth & control forecasting with ERTAC
- LADCO also analyzing source apportionment by category to determine what is most impacting nonattainment in Northeast, Wisconsin, etc.
- Various states investigating EGUs that are not fully operating controls at certain times. USEPA also raised this issue.

Thank You

- Any Questions?

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