



IOWA DEPARTMENT OF NATURAL RESOURCES

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Air Quality Update

Iowa Environmental Conference

Johnston, Iowa

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Iowa DNR - Air Quality

Program Development (Planning) Section

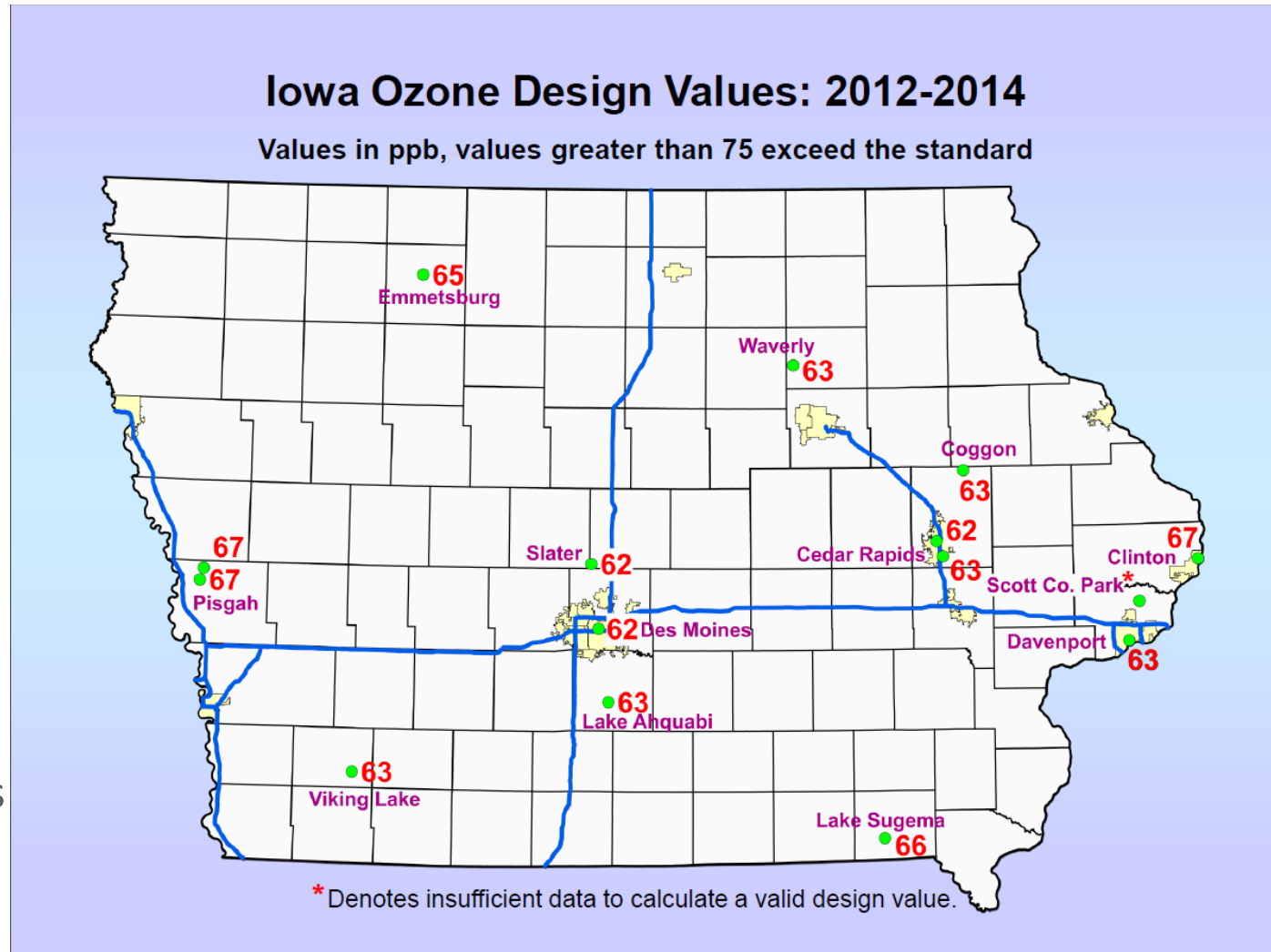
Overview

- National Ambient Air Quality Standards (NAAQS)
- State Implementation Plan (SIP) actions
- Modeling update

NAAQS – Ozone (O₃)

NAAQS revision

- Final decision required by Oct 1, 2015
- Proposal 65 – 70 ppb
- Designations by Oct 2017, using 2014-2016 data (unless EPA takes additional year)





NAAQS – Sulfur Dioxide (SO₂)

- 1-hr 75 ppb standard established in June 2010
 - 3 year average of the annual 99th percentile of daily 1-hour max values
 - Much remains to implement 2010 standard
 - Most areas in the state not yet designated
 - Muscatine County (portion) the exception
 - Nonattainment designation October 2013
 - Attainment plan (SIP) submission expected this fall
- SO₂ Data Requirements Rule (DRR):
 - Modeling or monitoring approach to designations
 - Proposed May 13, 2014 (79 FR 27445)
 - Final rule expected this summer
 - Emissions thresholds, methods, timelines

NAAQS – SO₂ (cont.)

- Consent Decree – constrains the DRR timelines
 - Sierra Club/NRDC, Filed 3/2/2015 N. California U.S. District Court
 - 3 designations deadlines (EPA signature dates)
 - July 2, 2016: EGUs meeting certain requirements
 - Three affected EGUs in Iowa, work underway
 - » Locations: Burlington, Ottumwa, Sergeant Bluff
 - December 31, 2017: areas not using monitoring data
 - December 31, 2020: all remaining undesignated areas

NAAQS – SO₂ (cont.)

- Assuming a 2000 tpy threshold
 - ~7 facilities affected (using 2013 data), mostly EGUs
- Modeling likely used by affected sources
 - Modeling will be conducted by facilities
 - After DNR and EPA approval of protocols
- Monitoring option would not be funded by the State
 - Modeling likely used to site monitor

NAAQS – SO₂ (cont.)

- Anticipated timelines
 - **September 2015:** Deadline for states to make designation recommendations for areas affected by the Consent Decree
 - **2015:** Determine modeling or monitoring approach for remaining areas
 - **January 2016:** (1) identify sources to be characterized with monitoring data; and (2) provide modeling protocols for other sources
 - **July 2, 2016:** EPA finalizes designations for EGU consent decree areas
 - **January 2017:** Submit modeling and designation recommendations for areas modeled; any new monitoring sites must be operational
 - **December 31, 2017:** EPA signs designations for areas modeled
 - **Early 2020:** Submit designation recommendations for monitored areas
 - **December 31, 2020:** EPA signs designations for areas monitored

NAAQS – EPA’s Review Schedules

	Lead	Primary NO ₂	Primary SO ₂	Secondary NO ₂ and SO ₂	PM	CO
Last Review Completed (final rule signed)	Oct 2008	Jan 2010	Jun 2010	Mar 2012	Dec 2012	Aug 2011
Upcoming Milestones	2016 Final Rule Expectation: retain as-is	Aug 2017 Final Rule	Jul 2019 Final Rule	TBD	TBD	TBD

- Future dates subject to change
- TBD = to be determined
- Additional NAAQS review information: <http://www.epa.gov/ttn/naaqs/>
- (Ozone discussed previously - final rule due by Oct 1, 2015)



SIP Updates: SSM

- Startup/Shutdown/Malfunction (SSM)
 - SIP Call signed May 22, 2015 (80 FR 33839, June 12, 2015)
 - Affects Iowa + 35 other states
 - Iowa impacts
 - 567 IAC 24.1(1): exempts excess emissions during startup or shutdown
 - November 22, 2016: Deadline to submit SIP revision
 - DNR evaluating the SIP Call and options
 - Stakeholder discussions expected this fall

SIP Updates: 2006 PM_{2.5} Infrastructure SIP

- Proposed Consent Decree (6/24/2015; 80 FR 36335)
 - By September 30, 2016, EPA must either:
 - Approve 2006 PM_{2.5} Infrastructure SIP (iSIP)
 - Issue Federal Implementation Plan (FIP)
 - SIP approval expected
 - 2013 SIP submitted; EPA has necessary information
 - No implementation changes anticipated
 - History
 - 2006 PM_{2.5} NAAQS revision → iSIPs due in 2009
 - Delayed pending EPA regulations (e.g. stack test methods)
 - 2010 workgroups and 2012 rule adoptions precede SIP submittal

SIP Updates: 2012 PM_{2.5} Infrastructure SIP

- EPA revised the annual standard in December 2012
 - Lowered primary standard from 15 to 12 $\mu\text{g}/\text{m}^3$
- Infrastructure SIP due December 2015
 - Permitting and modeling implementation will begin
 - Minor NSR (PSD already implemented)

SIP Updates: 2008 Ozone – Interstate Transport

- Clean Air Act §110(a)(2)(D)(i)(I): “Good Neighbor”
 - Prohibits emissions which contribute to downwind nonattainment or interfere with maintenance
 - Required part of iSIPs
 - Federal programs often used (NO_x SIP Call, CAIR, CSAPR)
- 2008 O₃ “Good Neighbor” SIPs
 - June 30, 2015: EPA signed finding of failure to submit
 - Iowa + 23 other states
 - Options: Approved SIP by mid-2017 or federal rule (FIP) issued
 - New federal interstate transport rule expected
 - Proposal this fall/winter
 - Likely will affect only EGUs

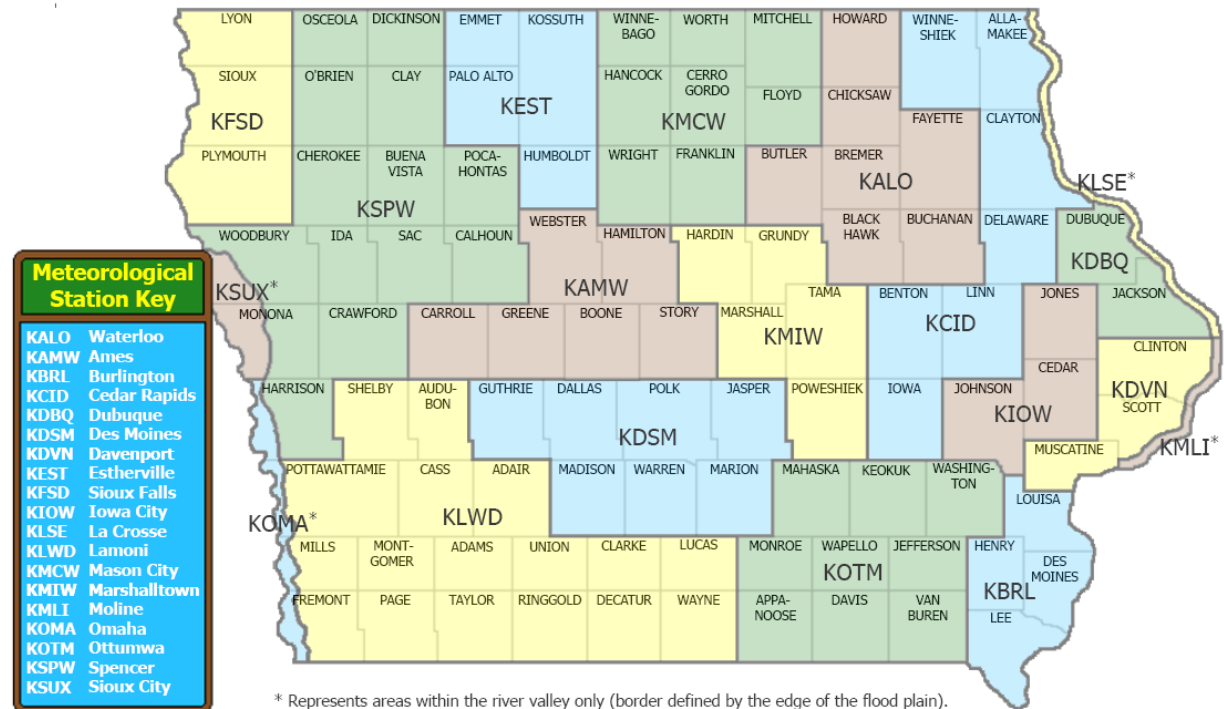
Modeling Updates

- Meteorology
 - DNR updating 5-year dataset: 2010-2014
 - Expected late summer
 - Completed analyses won't require use of new met data
- Backgrounds
 - Also being updated



2005 - 2009 AERMOD Meteorological Data

Map shows which surface meteorological station to use for AERMOD modeling in various areas of Iowa



Modeling Updates (cont.)

- PM_{2.5} Secondary Formation (5/20/2014 Guidance)
 - In IA: case-by-case, nothing complex (cases 3 & 4) encountered yet

Assessment Case	Description of Assessment Case	Primary Impacts Approach	Secondary Impacts Approach
Case 1: No Air Quality Analysis	Direct PM _{2.5} emissions < 10 tpy SER Both NO _x and SO ₂ emissions < 40 tpy SER	N/A	N/A
Case 2: Primary Air Quality Impacts Only	Direct PM _{2.5} emissions ≥ 10 tpy SER Both NO _x and SO ₂ emissions < 40 tpy SER	Appendix W preferred or approved alternative dispersion model	N/A
Case 3: Primary and Secondary Air Quality Impacts	Direct PM _{2.5} emissions ≥ 10 tpy SER Both NO _x and/or SO ₂ emissions ≥ 40 tpy SER	Appendix W preferred or approved alternative dispersion model	<ul style="list-style-type: none"> • Qualitative • Hybrid qualitative / quantitative • Full quantitative photochemical grid modeling
Case 4: Secondary Air Quality Impacts Only	Direct PM _{2.5} emissions < 10 tpy SER Both NO _x and/or SO ₂ emissions ≥ 40 tpy SER	N/A	<ul style="list-style-type: none"> • Qualitative • Hybrid qualitative / quantitative • Full quantitative photochemical grid modeling

Modeling Updates (cont.)

- EPA to propose “Revision to the Guideline on Air Quality Models” (Appendix W overhaul)
 - Analytical methods to address O₃ & secondary PM_{2.5}
 - Updates for modeling 1-hour NAAQS
 - Update models, as appropriate, for input/science issues
 - Significant concentration gradients (background/sources)
 - might be guidance instead
 - Should be proposed before “11th Conference on Air Quality Models” meeting Aug 12-13 in RTP, North Carolina
 - Final rule expected: 2016

Questions?