



IOWA DEPARTMENT OF NATURAL RESOURCES

LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES

Dispersion Modeling

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Program Development Supervisor

Presentation Outline



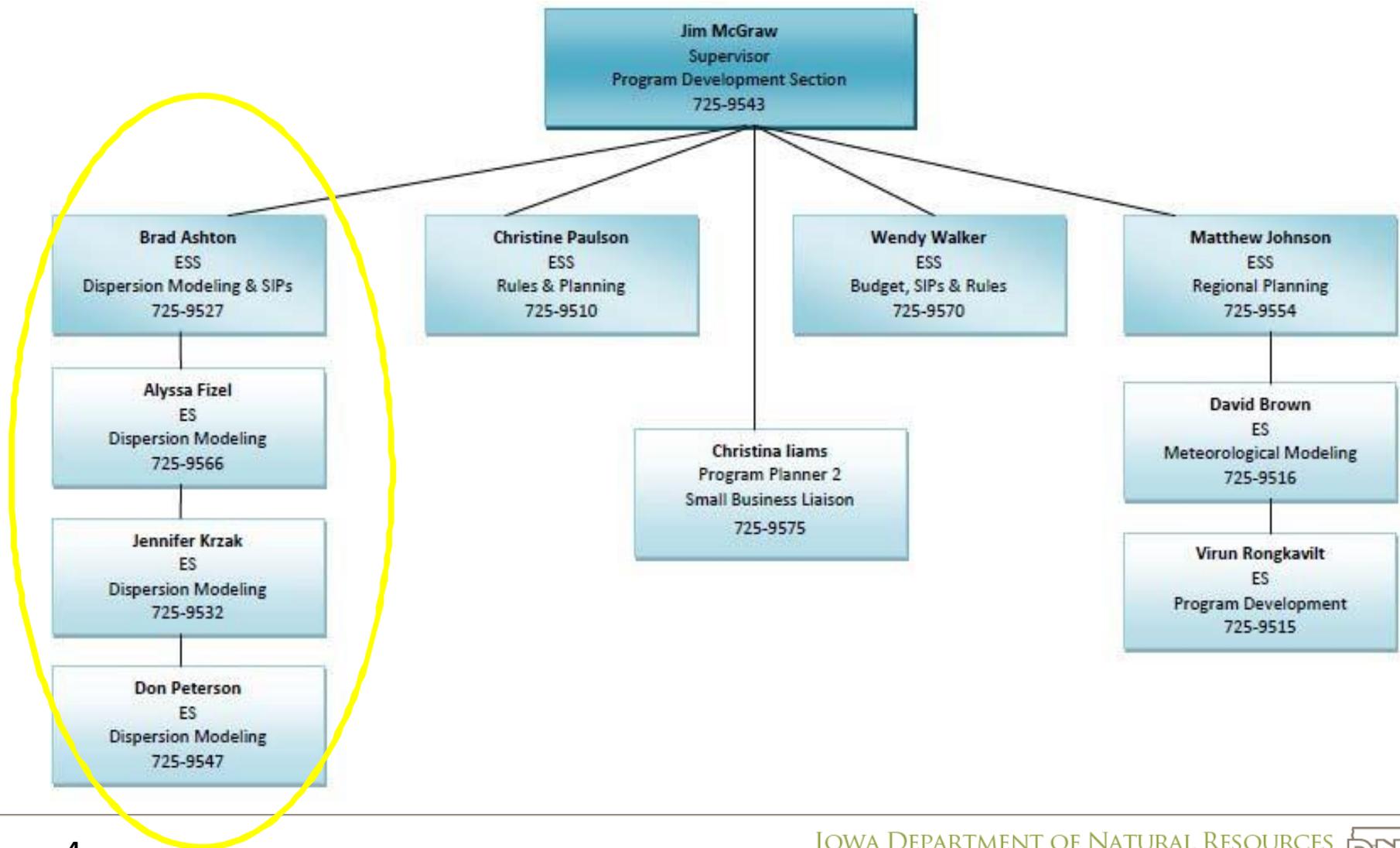
- Iowa DNR Dispersion Modeling Services
- Modeling Overview
- Making Modeling Faster and Easier



Modeling Services for Permitting

- DNR conducts modeling if modeling not submitted for projects at non-major sources
- DNR conducts modeling if staffing allows for minor projects at major sources
- DNR assists in development of protocols and provides on-going project assistance for PSD projects

Dispersion Modeling Unit Staff



Modeling Project Statistics

January 1, 2013 – July 1, 2014

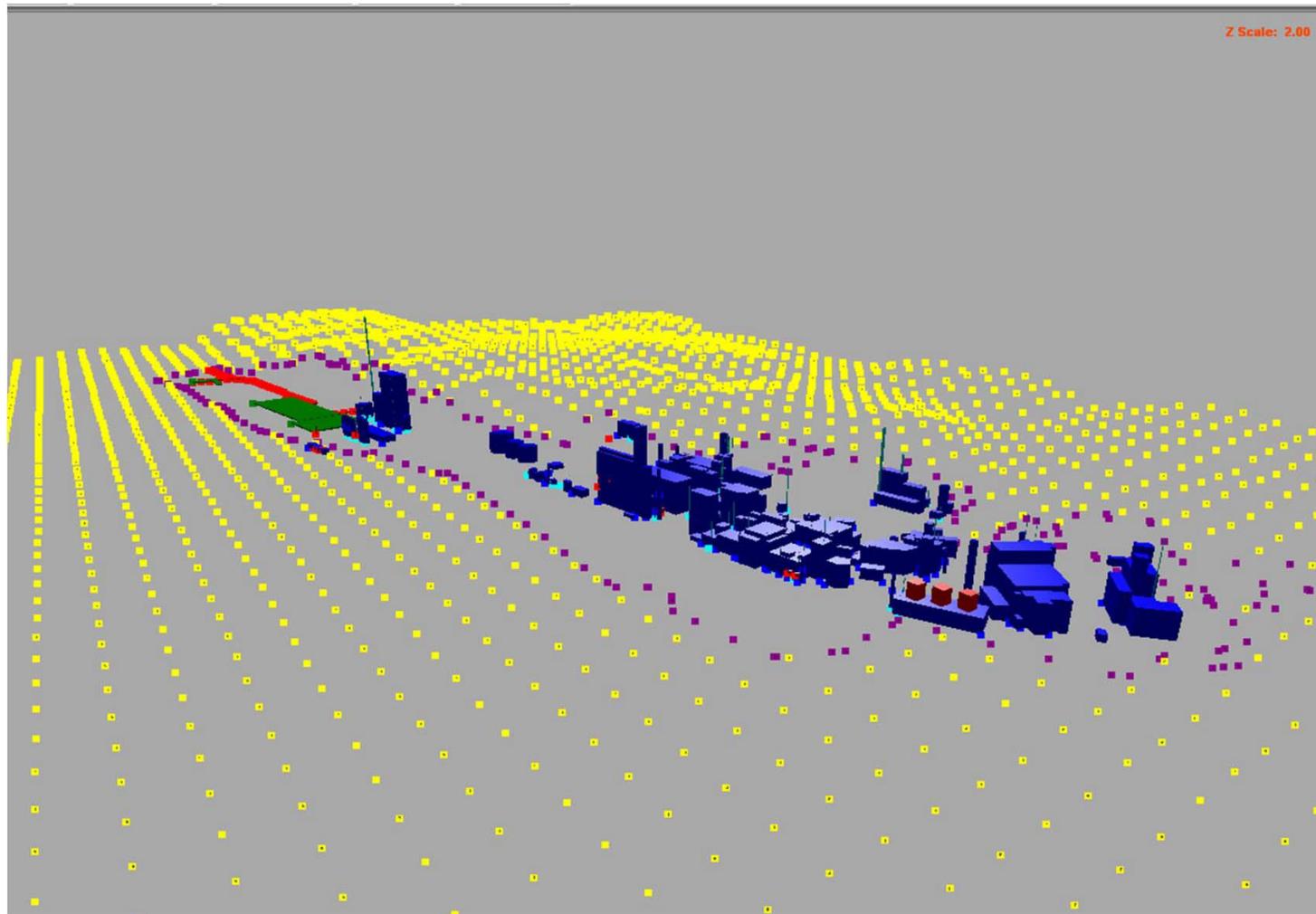
	Number of Projects Modeled	Number of Projects Permitted	Percent Projects Modeled
Standard Construction Permit Projects	87	588	14.8
Complex Construction Permit Projects (Non-PSD)	12	36	33.3
Complex Construction Permit Projects (PSD)	11	24	45.8
Total	110	648	17.0

Modeling Overview

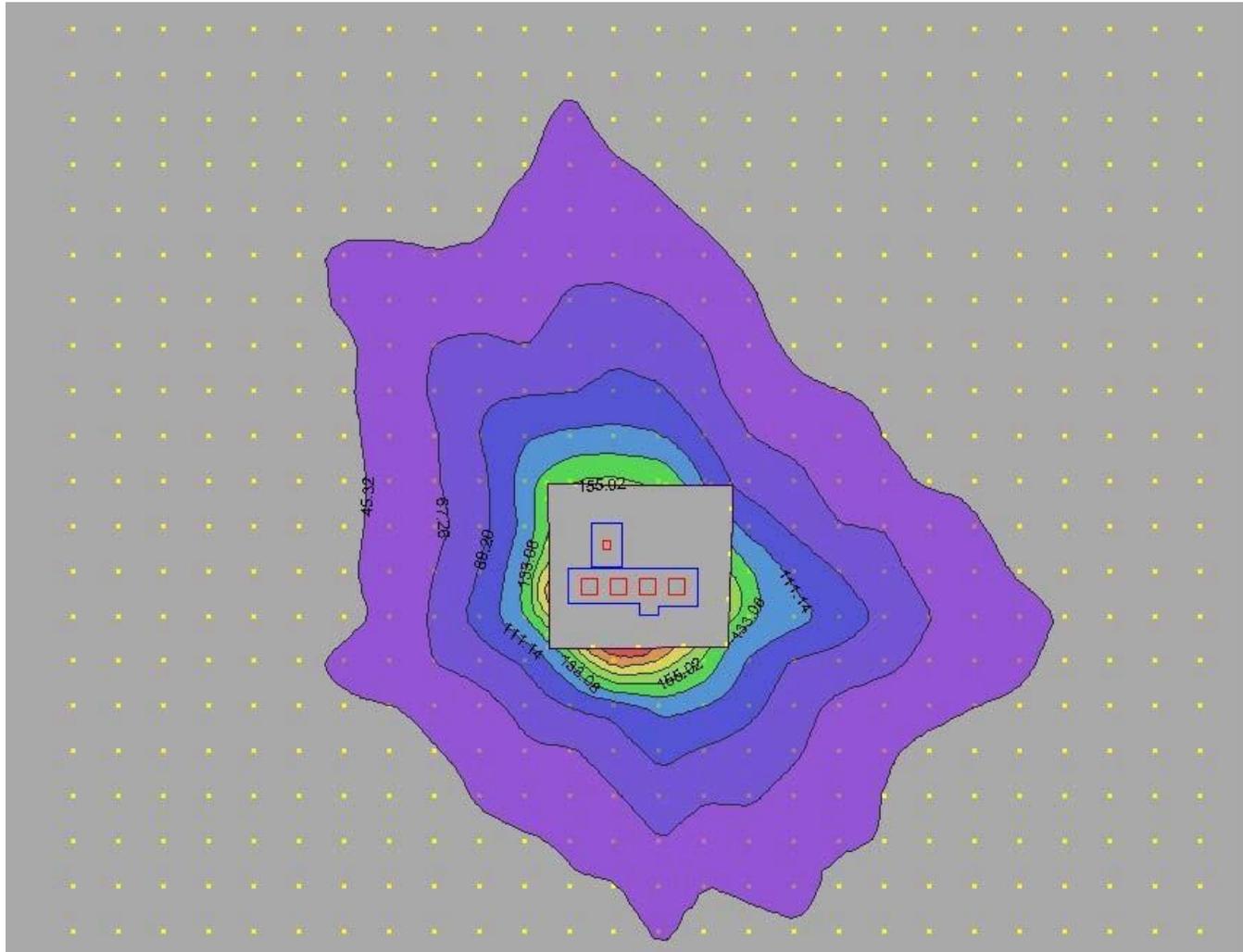
Purpose and Application

- Assist in permit issuance by predicting ambient impacts from one or more facilities
 - Verify project will not exceed air quality standards
 - Generate alternatives to meet air quality standards
 - Help prevent costly retrofits by designing appropriate pollution controls prior to construction
 - Partner in management of air resource
- Also used for:
 - Development of nonattainment area control strategies
 - Ambient monitor placement
 - Investigate impact of proposed rules or legislation

The Modeler's View of Facility:



Modeler's View of Air Quality



Basis for Modeling

Clean Air Act

- Section 110(a)(2)(K)

Minor NSR Permitting Projects

- 567 IAC 22
- Form MD
- DNR Dispersion Modeling Guidelines (Non-PSD)

Major NSR Permitting Projects

- 40 CFR 51.166 and Appendix W
- 567 IAC 33
- EPA & DNR PSD Modeling Guidance
- Modeling Protocol

Non-Attainment SIPs and NAAQS Maintenance Areas

- 40 CFR 51.165
- 567 IAC 31
- Applicable EPA Guidance
- Modeling Protocol

Making Modeling Faster and Easier

Improved Project Tracking and Run Times Yields Faster Turnaround Times

- Efficient Project Tracking
 - Focus on review time, balancing workloads, and modeler expertise
 - Track current and expected modeling projects
 - Started after original CP Process Event (2003)
- Complete runs up to 12X faster
 - Implementation of Modeling Computer Array
 - Allows modelers to work on two or more projects at same time

Increased Data Availability Reduces Permit Issuance Time

- Input Ready Modeling Data
 - Preprocessed Meteorological Data
 - 19 Iowa meteorological stations ensure statewide coverage
 - Digital Terrain Elevation Data
 - Available for all Iowa counties
 - Background Data
 - Statewide default backgrounds



Reduced Regulatory Uncertainty

- Readily available on-line DNR guidance documents and tools

<http://www.iowadnr.gov/InsideDNR/RegulatoryAir/Modeling/DispersionModeling.aspx>

- General Guidance
 - 8 documents
- PSD Guidance
 - 5 documents, 3 tools
- Source Characterization
 - 11 documents, 2 tools

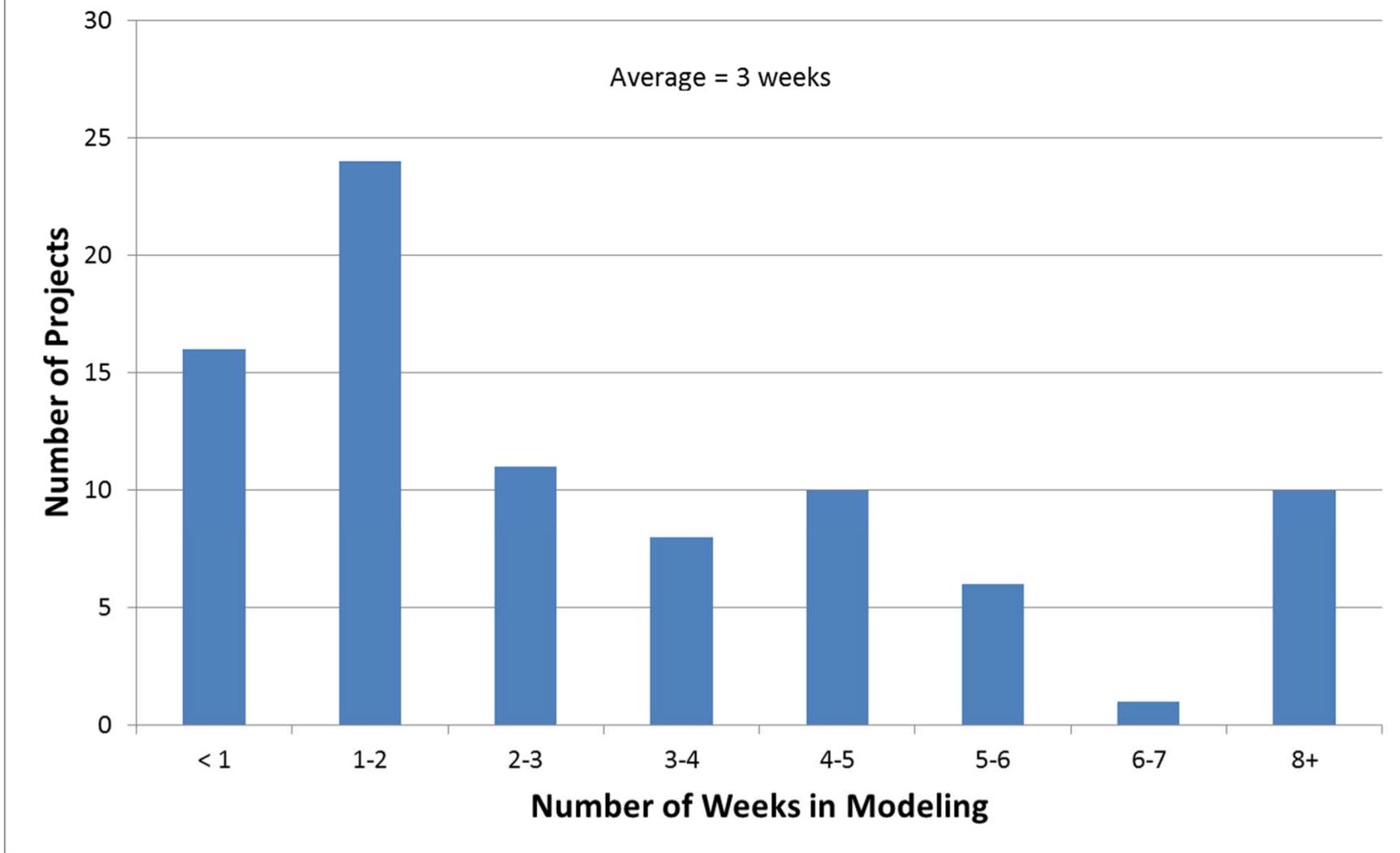


Reduced Regulatory Burden While Ensuring Air Quality Protection



- Modeling Workgroup - 2012
 - Reduced the number of unnecessary modeling reviews while still protecting public health
 - Jointly developed approach based on review of past modeling projects and modeling survey of other states
- Collaboratively developed modeling guidance for implementation of new/revised NAAQS

Time Spent in Modeling - Standard Projects (if required) (1/1/2013 - 7/1/2014)



Questions?

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