Oregon DEQ AQ-Technical Services

Lessons Learned: Creating an Air Toxics Emissions Reporting Program for Oregon

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2019 International Emissions Inventory Conference

Dallas, TX

Brandy Albertson | Oregon Department of Environmental Quality

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Overview

1. What are we talking about here?
2. How did this all get started?
3. Why does Oregon need an Air Toxics Emissions Inventory?
4. What kind of information did DEQ request?
5. State of the data received
6. Lessons Learned

1. What are we talking about here?

AIR TOXICS REPORTING

What are we talking about here?

The purpose of this presentation is to share “lessons learned” and provide a different perspective on data collection.

What are we talking about here?

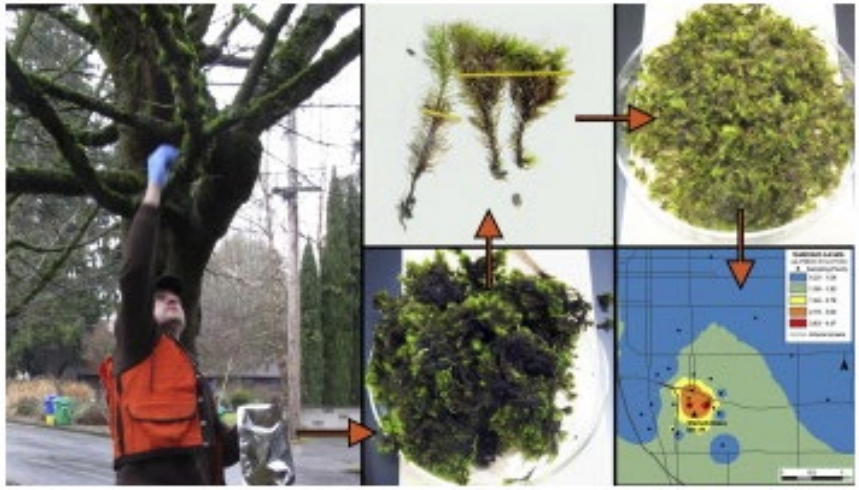
We will discuss various components of a reporting program such as:

- Identifying facilities for reporting
- Establishing data requirements for reporting
- Choosing suitable emission factors and estimation methodologies for use
- Data quality issues discovered during QA/QC process.

2. How did this all get started?

USFS Moss Study Reveals Metal HAPS

Portland Moss Study



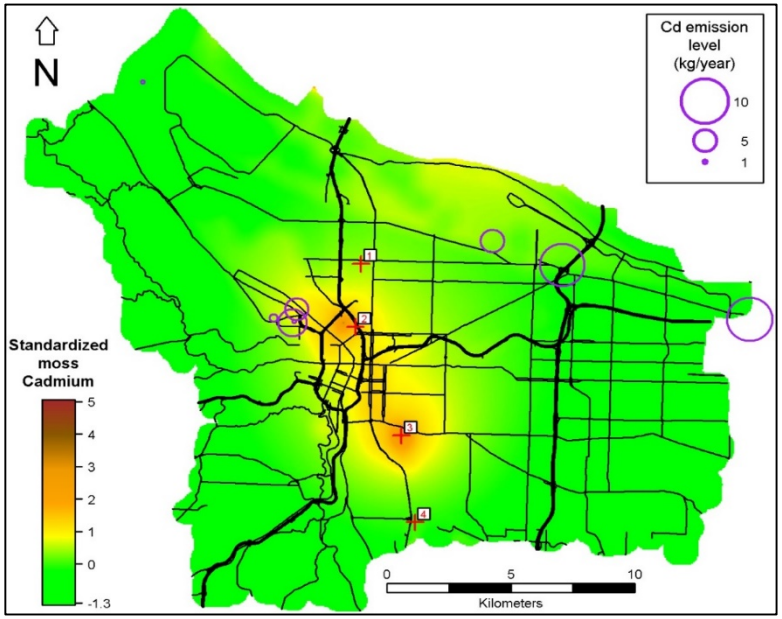
Using an epiphytic moss to identify previously unknown sources of atmospheric cadmium pollution☆

Geoffrey H. Donovan [a], Sarah E. Jovan [a,*], Demetrios Gatziolis [a], Igor Burstyn [b], Yvonne L. Michael [b], Vicente J. Monleon [c]

[a] USDA Forest Service, PNW Research Station, 620 SW Main, Suite 400, Portland, OR 97205, USA
[b] Dornsife School of Public Health, Drexel University, Nesbitt Hall, 3215 Market St, Philadelphia, PA 19104, USA
[c] USDA Forest Service, PNW Research Station, 3200 SW Jefferson Way, Corvallis, OR 97331, USA

http://www.sciencedirect.com/science/article/pii/S0048969716306052
http://www.fs.fed.us/pnw/research/2016/mar/index.shtml

Cadmium Concentrations in Moss



Source: USFS

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Public Out Cry

Political Will Emerges – Gov. Brown's Mission

4/6/2017

"Clean air is fundamental to good health. I am deeply concerned that federal and state air quality programs do not directly consider public health in regulating certain classes of industrial air emissions. This must change."

- Protective of health
- Grounded in science
- Predictable

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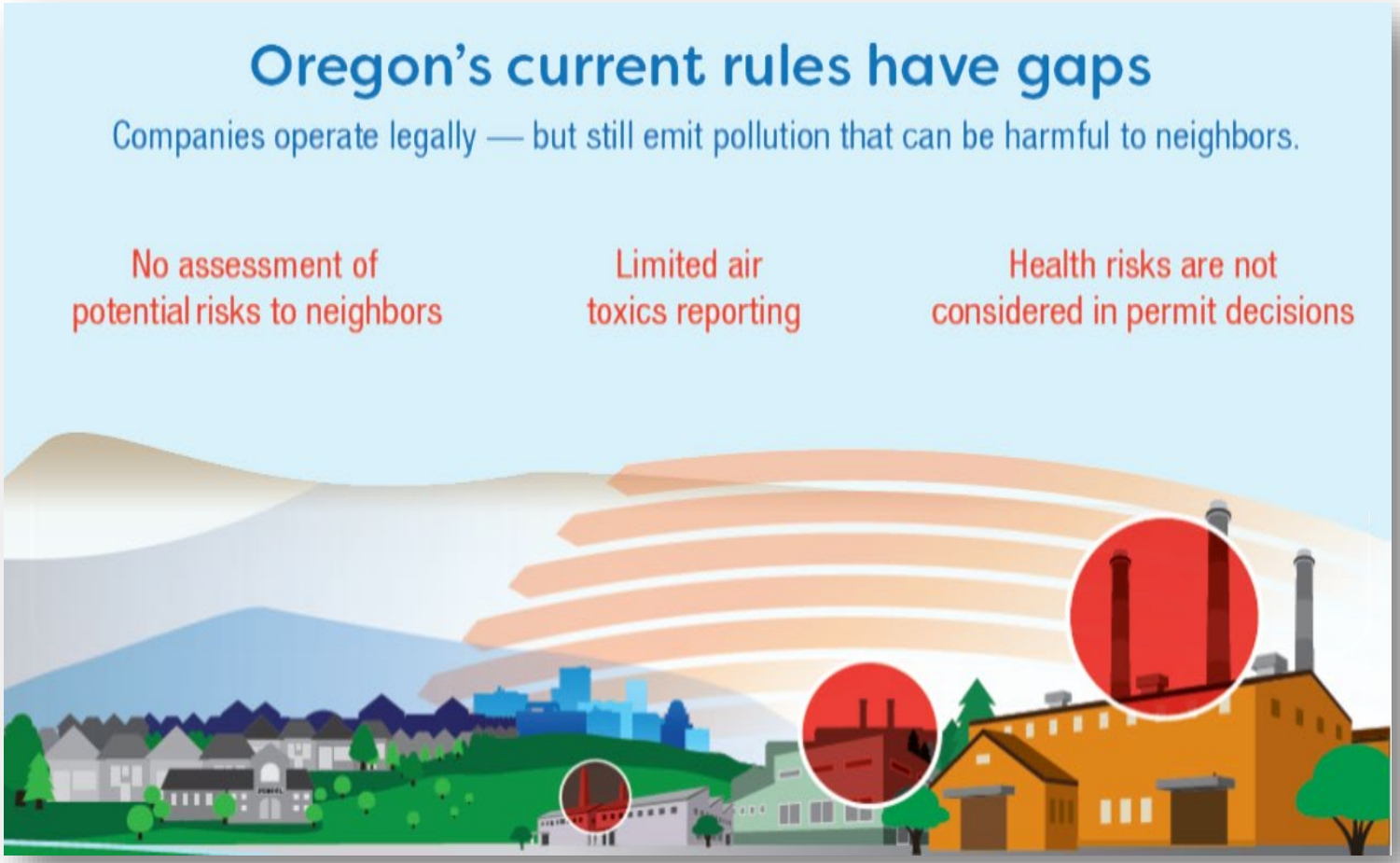
Why Cleaner Air Oregon?



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Cleaner Air Oregon - Overview

Report air toxics

Companies to report use of 630+ pollutants to state regulators via EI

Assess risk

Facilities calculate potential health risks to people who live, work, and go to school nearby

Regulate to reduce risk

Companies would have to act if the levels of air toxics they emit exceed health risk action levels (RALs)

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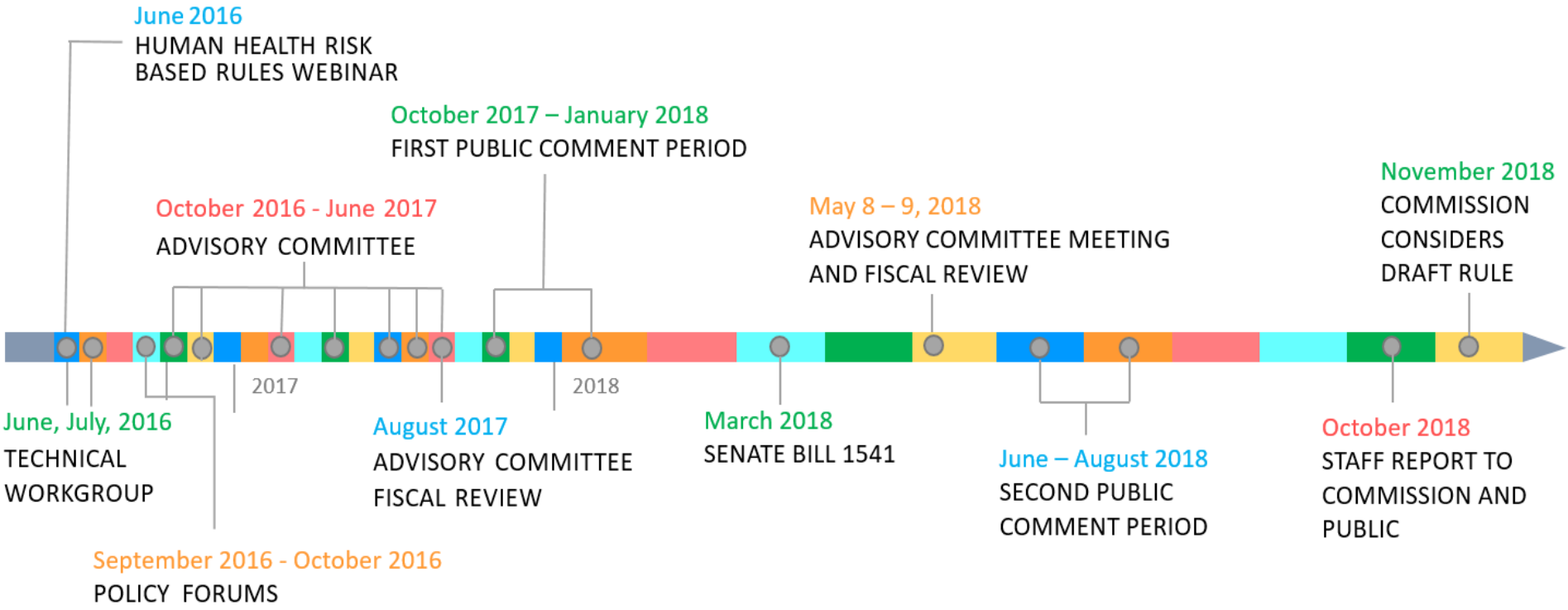
Cleaner Air Oregon - Rulemaking



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3. Why does Oregon need an Air Toxics Emissions Inventory?

CLEANER AIR OREGON

Why is this information needed?

DEQ has found gaps in state and federal emissions reporting:

- Inconsistencies in reporting, recordkeeping, and monitoring requirements for permitted facilities for certain pollutants and activities.
- Need to evaluate a more comprehensive list of air toxics than EPA's list of 187 HAPs.
- Not enough available information to develop an in-house emissions inventory

How will the Air Toxics Emissions Inventory be used?

- Identify what is being emitted, how much, and by whom
- Identify pollutants and geographic areas of concern
- Inform air toxics policy and permitting program development
- Identify which facilities to call into the program and when
- Use as a tool to track efficacy of the permitting program

4. What kind of information did DEQ request?

REQUEST FOR INFORMATION

Who Submitted Information

Facilities with the following air permits or registration:

- Area Source Registrants
- Basic and General ACDPs
- Simple and Standard ACDPs
- Title V

Exceptions:

- Gasoline Dispensing Facilities
- Drycleaners

Classifying Reporting Sources and Requirements

- ~ 1,300 State and Federal Permitted facilities in OR
- Classified into two reporting groups:

1. Group 1 - Generals and Basics (~915):

   Required to report:

   - Only activity rates (i.e. fuel usage, production, etc.) and material balance estimates for emissions units or activities
   - Control devices and efficiencies

2. Group 2 – TV, ACDP Standard/Simples (~385):

   Required to report:

   - All relevant emissions units
   - Activity rates for each unit and material usage rates
   - Control devices and efficiencies
   - Calculated emissions including material balance

Quantify Emissions

What information should be used:

- Existing emission factors from permit
- Source test data, if available
- Equipment Vendor's test data, if available
- Material balance
- AP42, trade or technical association data, or other regulatory agencies emission factors or estimation methodologies
- Engineering judgement

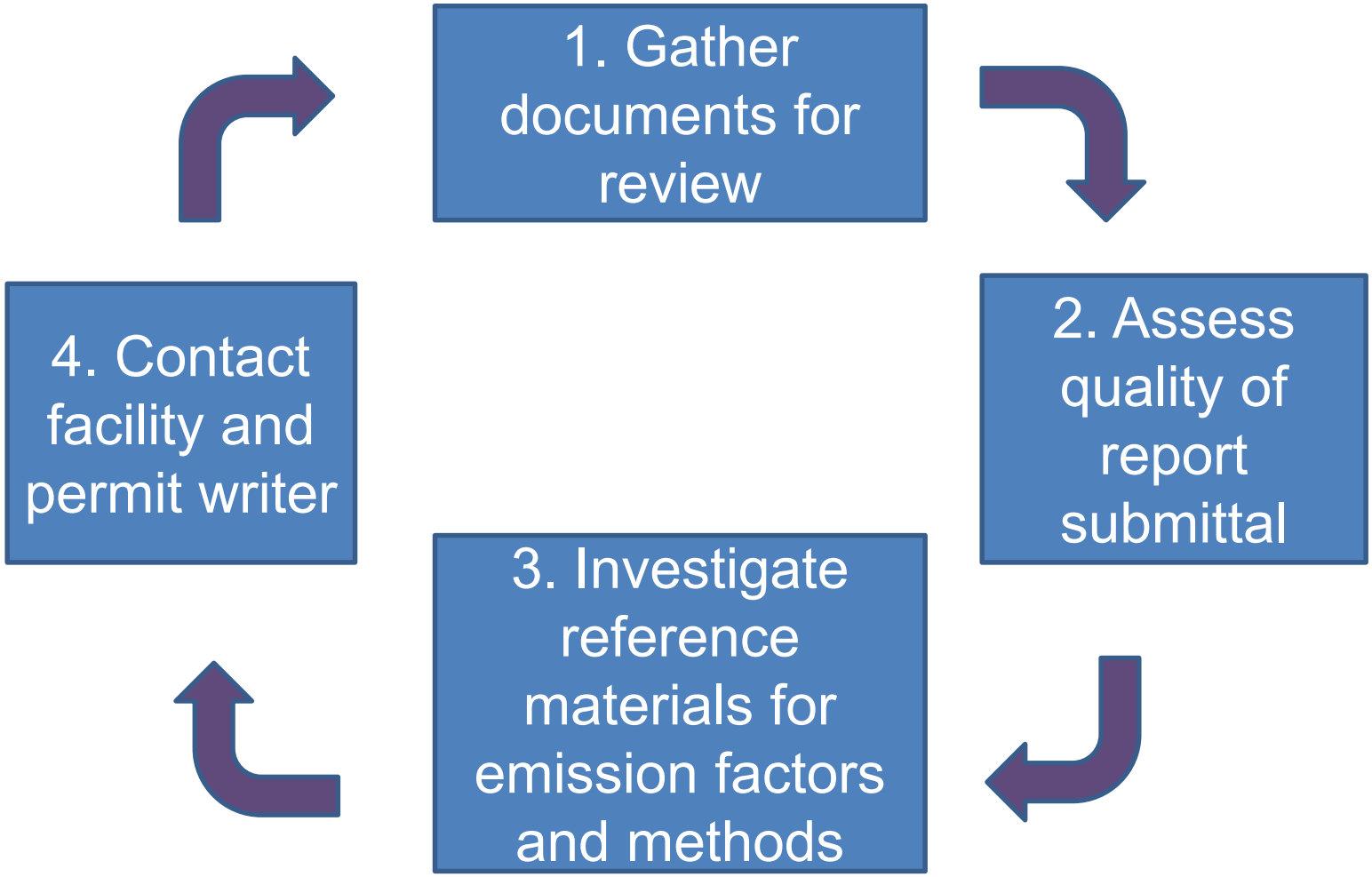
How DEQ Prepared Facilities for Reporting

- Website including interactive video
- Two webinar training sessions
- LOTS of technical assistance by emissions inventory staff and permit writers statewide

5. State of the data

EI QA/QC PROCESS

QA/QC Process Flow



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Challenges

- Emissions Units & Activities:
  - Coordination with sources to obtain reference materials
  - Consistency across industry/emissions units
  - Variability of reporting competency
  - Process changes – either material, emission unit, or controls
  - Insufficient information
- Material Balance:
  - Reporting of SDS and material composition
  - Chemicals not reported as they fell under aggregate CAS registry numbers – e.g. Petroleum distillate mixture (CAS 68477-31-6)
  - Insufficient information and/or materials tracking by source

Successes

- Collaborative spirit with sources, consultants, and permit writers
- Highlighted gaps in current permits and/or Annual Reporting
- Provided deeper technical insight into industrial sources and processes
- Working with industry groups to obtain researched and statistically vetted emission factors
- Oregon's first detailed, statewide QA/QC AT EI

Successes

Oregon first detailed, QA/QC'd Air Toxics EI (Group 2):

Reported emissions from ~360 facilities with:

- Air Toxics ranging from 20-60 species
- Up to 40 Emissions Units
- Material Balances of up to 200 materials

6. Lessons Learned

FUTURE OF AIR TOXICS REPORTING

Lessons Learned

Things to consider about potential air toxic reporters:

- Computer access
- Level of experience using computer software
- Level of experience estimating emissions and reporting
- Access to SDS or other reference materials
- Current recordkeeping requirements of the permit
- Current monitoring equipment required by the permit (Ex. Plating Facilities)
- Limited availability of emission factors and estimation methodologies for some emission activities

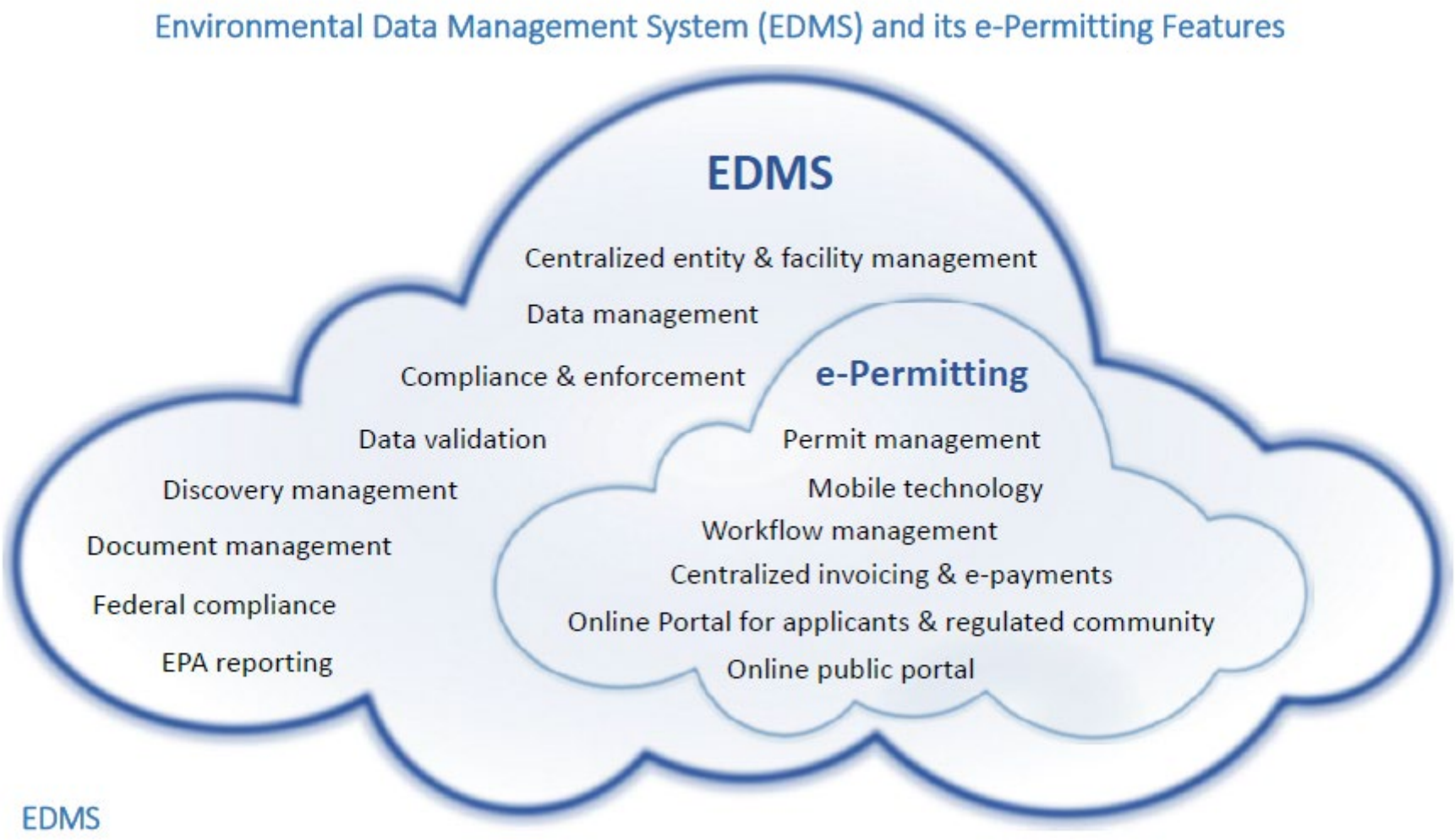
Lessons Learned

- Developing a reporting program has to be a collaborative effort between emission inventory staff, permit writers, and rulemaking team
- Sync air toxics reporting with air permit monitoring and recordkeeping requirements as possible
- Standardize emission factors and methodologies for similar equipment within the same industry
- Evaluate source test data to develop industry specific emission factors and estimation protocols

Moving Forward

- Estimate 2016 emissions and QA/QC Group 1 facilities
- Finalize 2016 air toxics emissions inventory of both Groups 1 and 2 facilities and publish on DEQ website.
- Prepare for next round of triennial air toxics reporting (CAO rules require all permitted facilities to report every 3 years starting with 2020)
- Move to electronic reporting and user-friendly interface for public disclosure - EDMS

Future Looks Bright



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Questions

Brandy Albertson

Senior Emissions Analyst

Email me at albertson.brandy@deq.state.or.us

or call (503)229-6459

For more info, visit cleanerair.oregon.gov

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