

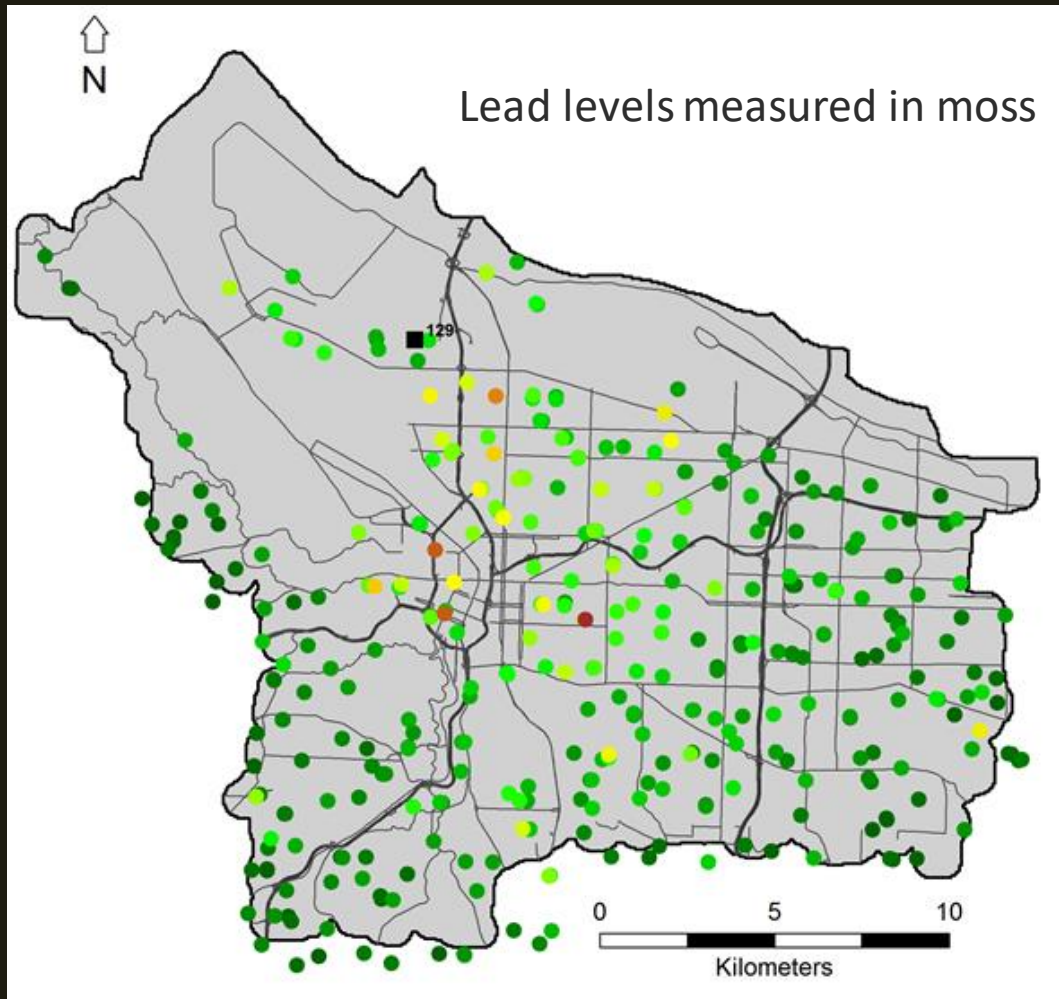


# Lessons Learned: Creating an Air Toxics Emissions Reporting Program for Oregon

## Cleaner Air Oregon

Clara Funk  
September 28, 2023  
International Emissions Inventory Conference  
Seattle, WA

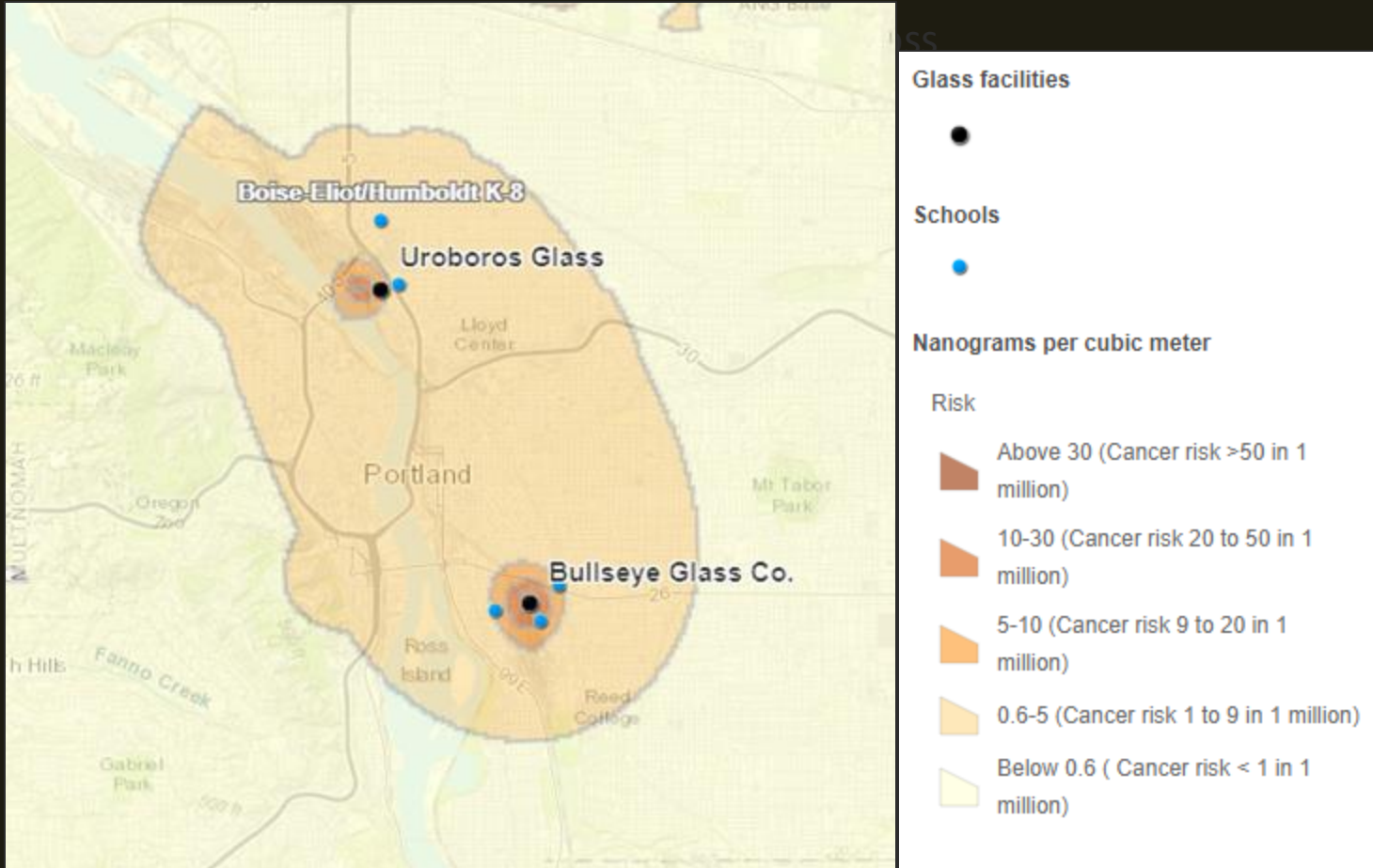
# US Forest Service Moss Study



- 2013 – DEQ partnered with USFS to investigate heavy metals in moss (Pb, Cd, As, Se, Ni, Cr)
- Elevated metal concentrations found near glass manufacturers:
  - Cadmium ~159X SB [1]
  - Arsenic ~49X SB
- Metal levels confirmed by ambient monitoring

[1] – State Benchmarks in 2016

# US Forest Service Moss Study



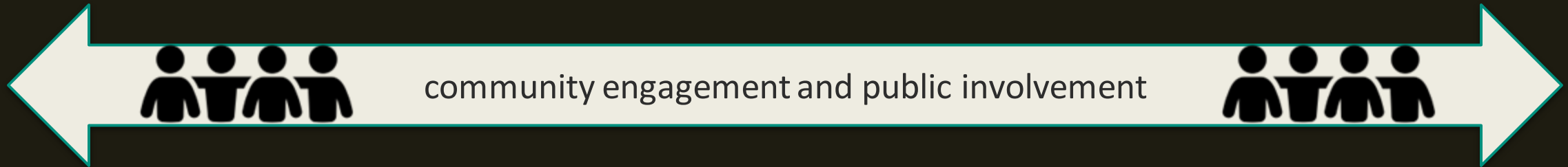
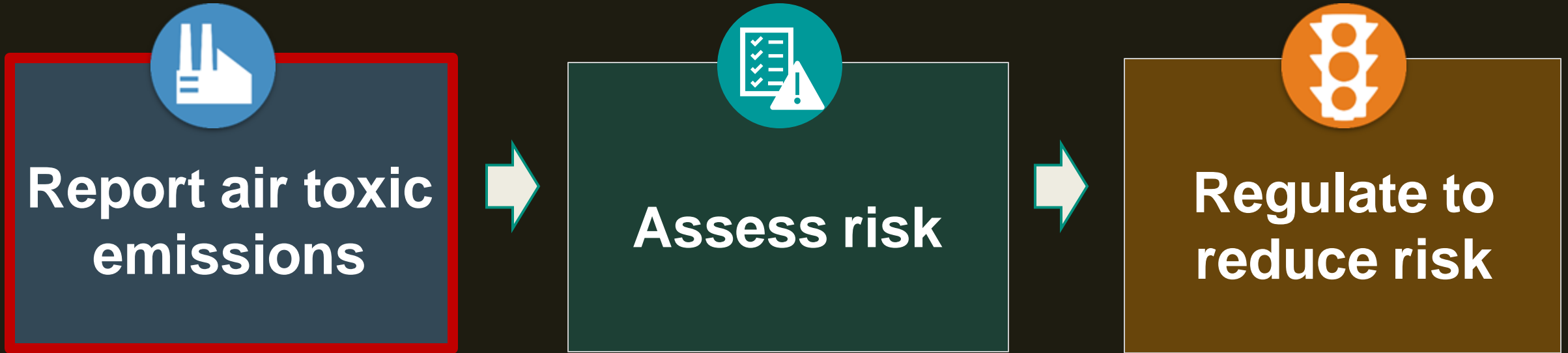
- 2013 – DEQ partnered with USFS to investigate heavy metals in moss (Pb, Cd, As, Se, Ni, Cr)
- Elevated metal concentrations found near glass manufacturers:
  - Cadmium ~159X SB [1]
  - Arsenic ~49X SB
- Metal levels confirmed by ambient monitoring

[1] – State Benchmarks in 2016



... Never waste a crisis....

# Cleaner Air Oregon Permitting





**Report air  
toxic  
emissions**



**EI to Assess Risk  
for CAO Permit**

- Highly detailed
- Often requires source testing
- Can take years



**Periodic state-  
wide EI**

- All permit holders
- Best available data
- Performed every 3 years

# Periodic State-wide EI

- Performed every three years (2020, 2023, 2026, etc.)
- ~400 facilities (100 TV, 300 state permits)
- 600+ Toxic Air Contaminants, 250 have regulatory Risk-Based Concentrations (RBCs)
- Administered by HQ EI Team, support from regional PWs
- Used to maintain call-in prioritization for the CAO permitting program

# Successes

- 
- 
- 
- 
- 



ses

EJScreen)



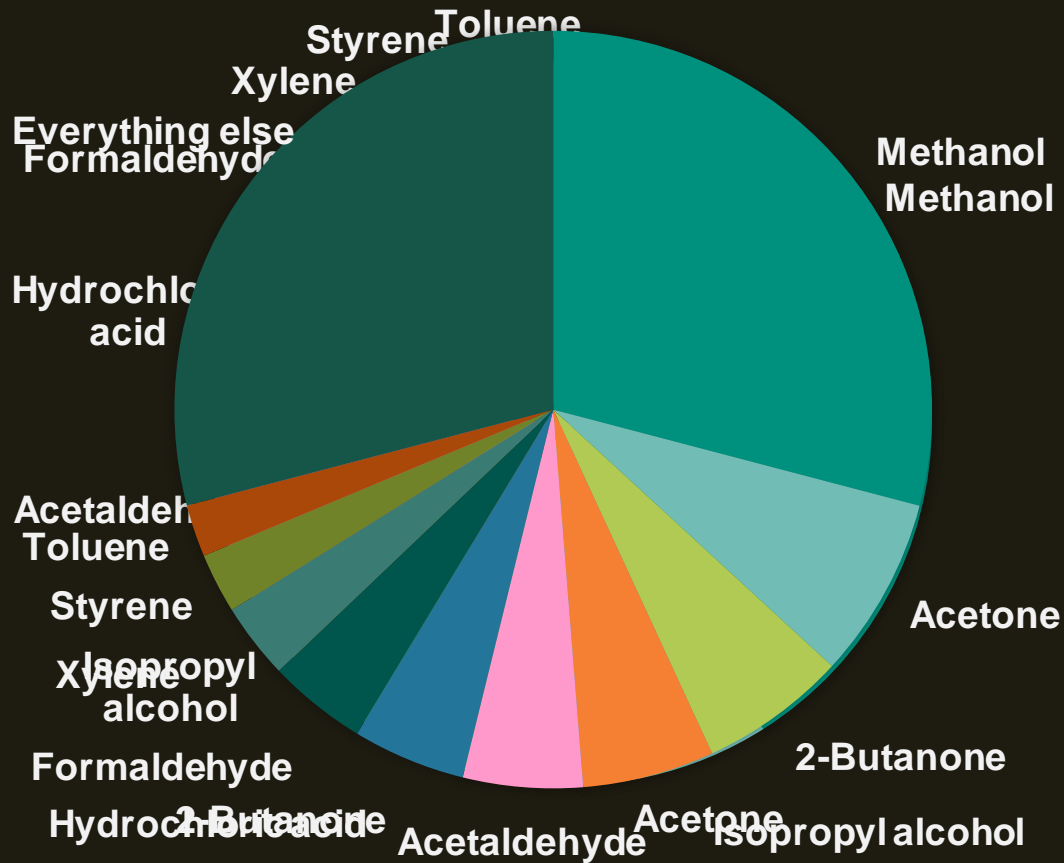
# Programmatic Lessons

- Huge learning curve for sources and DEQ staff.
- Establishing a uniform reporting template is critical.
- Material balance reporting is challenging.
- Developing educational resources and tools to facilitate reporting is critical.
- Challenging to estimate emissions data for some activities.

# The data...

1. Emissions
2. Toxicity
3. Risk

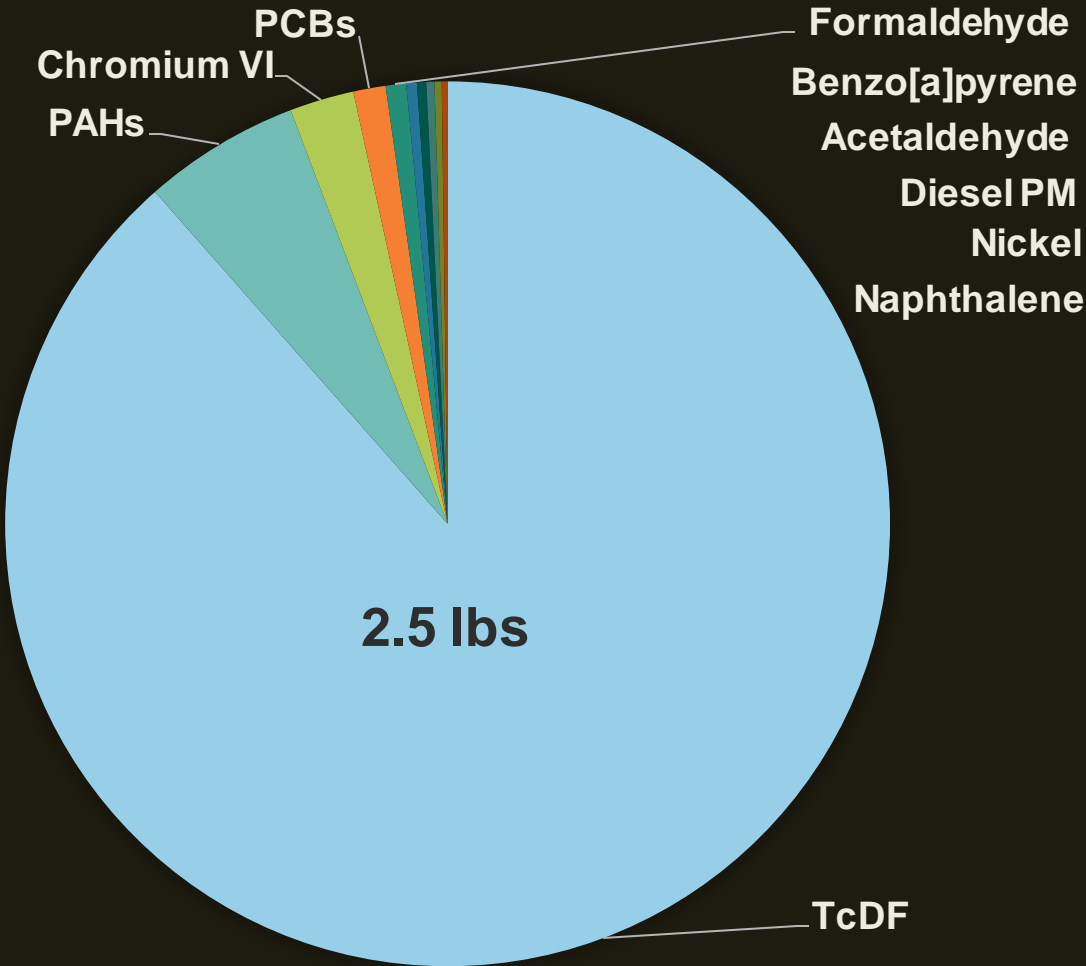
# Top 10 emitted TACs by mass (lbs)



Q: What industries emit the most of a single TAC?

A: In Oregon, wood products and pulp/paper drive MeOH emissions.

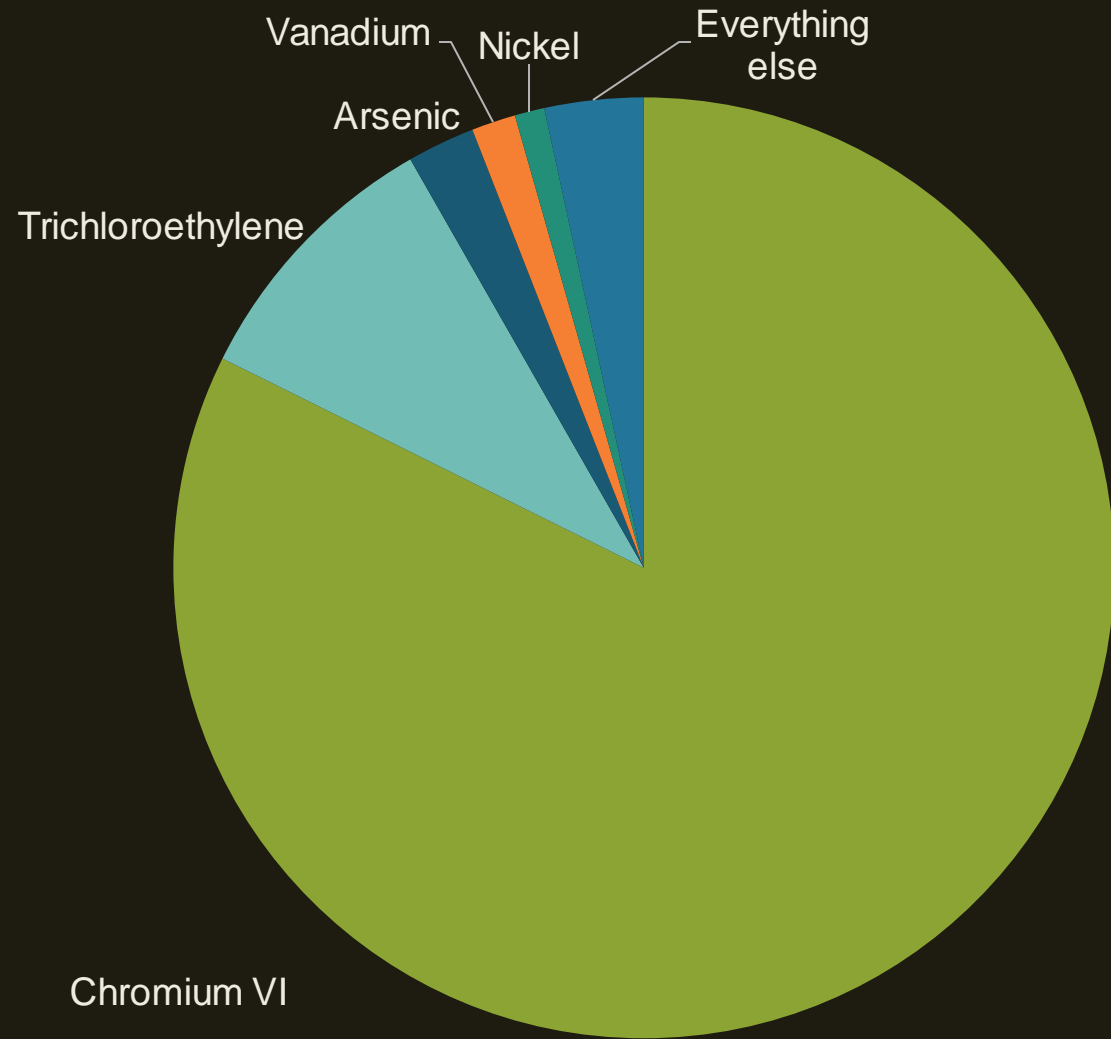
# Top 10 emitted TACs, weighted by Toxicity



Q: By weight, which TACs have the greatest potential health impact?

A: In Oregon, Dioxins and Furans from wood biomass boilers drive toxicity.

# Risk drivers from CAO Prioritization



Top five TACs from top 20 facilities prioritized for potential risk



# Looking forward

- Iterative reporting process will allow continual refinement of emissions basis
- 2023 Periodic EI is coming up fast! Submissions will be due in mid-2024
- 2024 launch online reporting with integrated permitting platform
- AERR Final rule implementation

# EI Team, Oregon DEQ

Clara Funk, [Clara.Funk@deq.Oregon.gov](mailto:Clara.Funk@deq.Oregon.gov)

Air Toxics EI

David Broderick,  
[David.Broderick@deq.Oregon.gov](mailto:David.Broderick@deq.Oregon.gov)

Point Source EI

Brandy Albertson,  
[Brandy.M.Albertson@deq.Oregon.gov](mailto:Brandy.M.Albertson@deq.Oregon.gov)

Nonpoint and SIP EI

James Powell,  
[James.Powell@deq.Oregon.gov](mailto:James.Powell@deq.Oregon.gov)

Mobile Source EI

JR Giska, [JR.Giska@deq.Oregon.gov](mailto:JR.Giska@deq.Oregon.gov)

CAO Program Manager

# Title VI and alternate formats

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities.

Visit DEQ's [Civil Rights and Environmental Justice page](#).

[Español](#) | [한국어](#) | [繁體中文](#) | [Русский](#) | [Tiếng Việt](#) | [العربية](#)  
Contact: 800-452-4011 | TTY: 711 | [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us)



# Appendix

# CAO Program Staff

- 4 Engineering Project Managers
- Modeler
- Risk Assessor
- Source Test Coordinator
- Air Toxics Emissions Inventory Analyst
- Area Risk Coordinator
- Program Coordinator
- Toxicologist partners from Oregon Health Authority

# Air Toxics Emissions Inventory

OAR 340-245-0040(2)

(2) Periodic state-wide emissions inventory.

(a) DEQ may require the owners and operators of all permitted and unpermitted sources to submit an updated toxic air contaminant emissions inventory of all toxic air contaminants emitted by the source listed in OAR 340-247-8010 Table 1. The reporting year will generally correspond with EPA's National Emissions Inventory reporting year (2020, 2023, 2026, etc.);

How do you know what facilities pose the greatest risk to their community when you don't have any information with which to make that determination?

