E-Enterprise for the Environment
Combined Air Emissions Reporting (CAER)

Research and Development Project:
Program Comparisons for the Toxics Release Inventory (TRI), the National Emissions Inventory (NEI), and State/Local/Tribal (SLT) inventories

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Background

- EPA's Toxics Release Inventory (TRI)
  - Tracks the management of certain toxic chemicals that may pose a threat to human health and the environment.
  - U.S. facilities in certain industry sectors must report how much of each chemical is recycled, burned for energy recovery, treated, or released to the environment.
  - A release of a chemical in TRI means that it is emitted to the air or water, or placed in some type of land disposal.

- EPA's National Emissions Inventory (NEI)
  - Estimates of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants (HAPs) from air emissions sources.
  - Based primarily upon data provided by SLT air agencies for sources in their jurisdictions and supplemented by data developed by the US EPA.
  - Built using the Emissions Inventory System (EIS) first to collect the data from State, Local, and Tribal air agencies and then to blend that data with other data sources.

TRI/NEI/SLT Project: Purpose and Scope

- Purpose:
  - Identify and evaluate consistencies and possible workflows for sharing emissions data between TRI, SLTs, and NEI.
- Scope:
  - Identify differences in terminology used to define reporting requirements in each program.
  - Identify pollutants that are common between the TRI and NEI, and specify how they relate to each other if there is not a one-to-one match.
  - Research how states use TRI data for their NEI submissions.
- Team Members:
  - States: MN, SC
  - EPA: Office of Pollution Prevention & Toxics (OPPT), Office of Air Quality Planning & Standards (OAQPS), Office of Environmental Information (OEI)

TRI/NEI/SLT Project: Research and Analysis Steps

- Identify differences in terminology used and reporting requirements in each program.

- Create a pollutant crosswalk between TRI and NEI.
  - Start with existing pollutant cross walk
  - Update list of chemicals from each program
  - Reconcile outstanding questions on particular chemicals and chemical groups
  - Quality assurance and quality control (QA/QC) crosswalk

- Survey states to see if and how they use TRI data in their Emissions Inventory (EI) submissions.
  - Ask all states if they use TRI data in their EI submission
  - Follow up with states that use TRI data to ask how the data are used
  - Compile and summarize responses

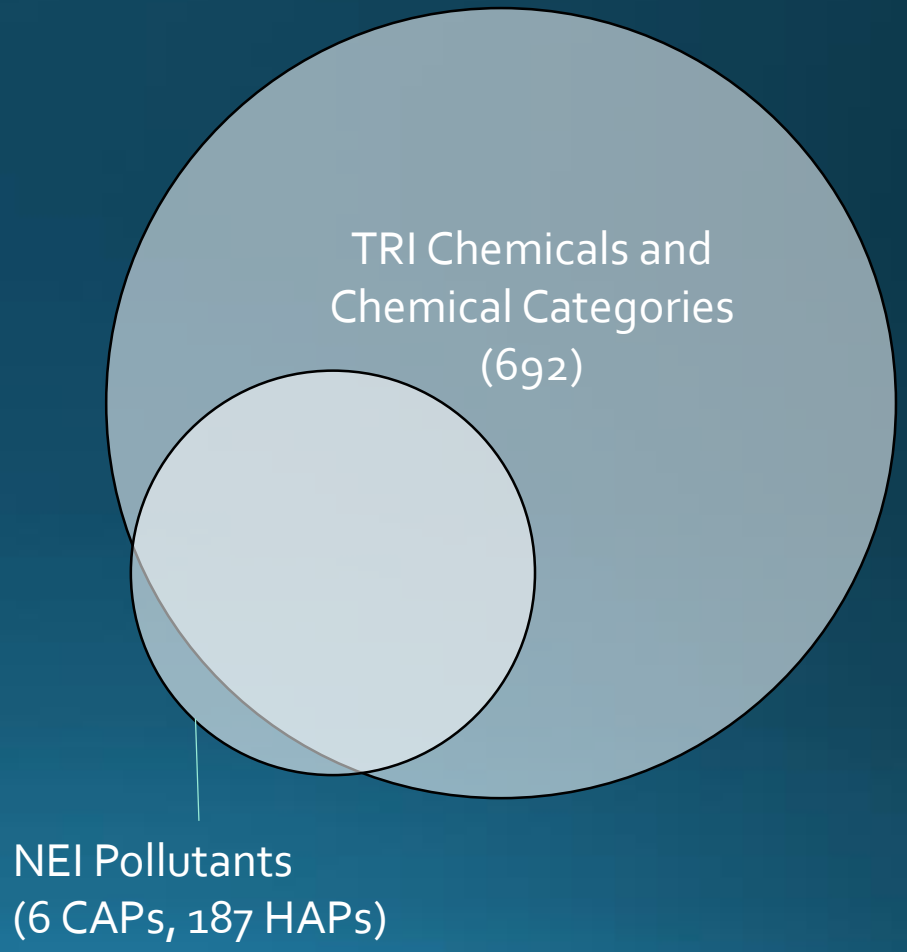
TRI/NEI/SLT Project: Results and Findings

- NEI and TRI terms and requirements comparison

	TRI	NEI
Who reports the data to EPA	The facility itself	State, local, and tribal agencies as well as EPA
Frequency of Reporting	Annually	Annual for largest sources only, every three years for all sources
Industries covered	TRI-covered sectors (e.g., manufacturing, waste management, metal mining, electric utilities)	No restrictions based on industry sector
Guidance for calculating emissions	Use best readily available information	Use best readily available information
Pollutants covered	TRI-listed chemicals (generally chemicals that cause cancer or other chronic human health effects, acute human health effects, and/or environmental effects.)	Criteria air pollutants and precursors required. Hazardous air pollutants submitted voluntarily by SLT, and estimated by EPA every three years.

TRI/NEI/SLT Project: Results and Findings

- Pollutant Crosswalk
  - NEI:
    - 6 criteria air pollutants (CAPs)
    - 187 HAPs
  - TRI:
    - 2 of the 6 criteria air pollutants: lead (which is both a HAP and CAP) and ammonia
    - Almost all (about 96%) of the 187 HAPs
    - In all, 692 chemicals and chemical categories



TRI/NEI/SLT Project: Results and Findings

- Pollutant Crosswalk
  - TRI pollutants to NEI pollutants and vice versa
  - Identified overlap in categories of chemicals
  - Discovered and corrected issue with NEI glycol ethers

NEI Typ	NEI Pollutant Category Name	TRI poll from TRI xwalk (vlookup or matched by har
HAP	4-Nitrophenol	4-NITROPHENOL
HAP	Glycol Ethers	Does this overlap with TRI "Certain Glycol Ethers"?
HAP	Ethylbenzene	ETHYLBENZENE
HAP	Styrene	STYRENE

TRI/NEI/SLT Project: Results and Findings

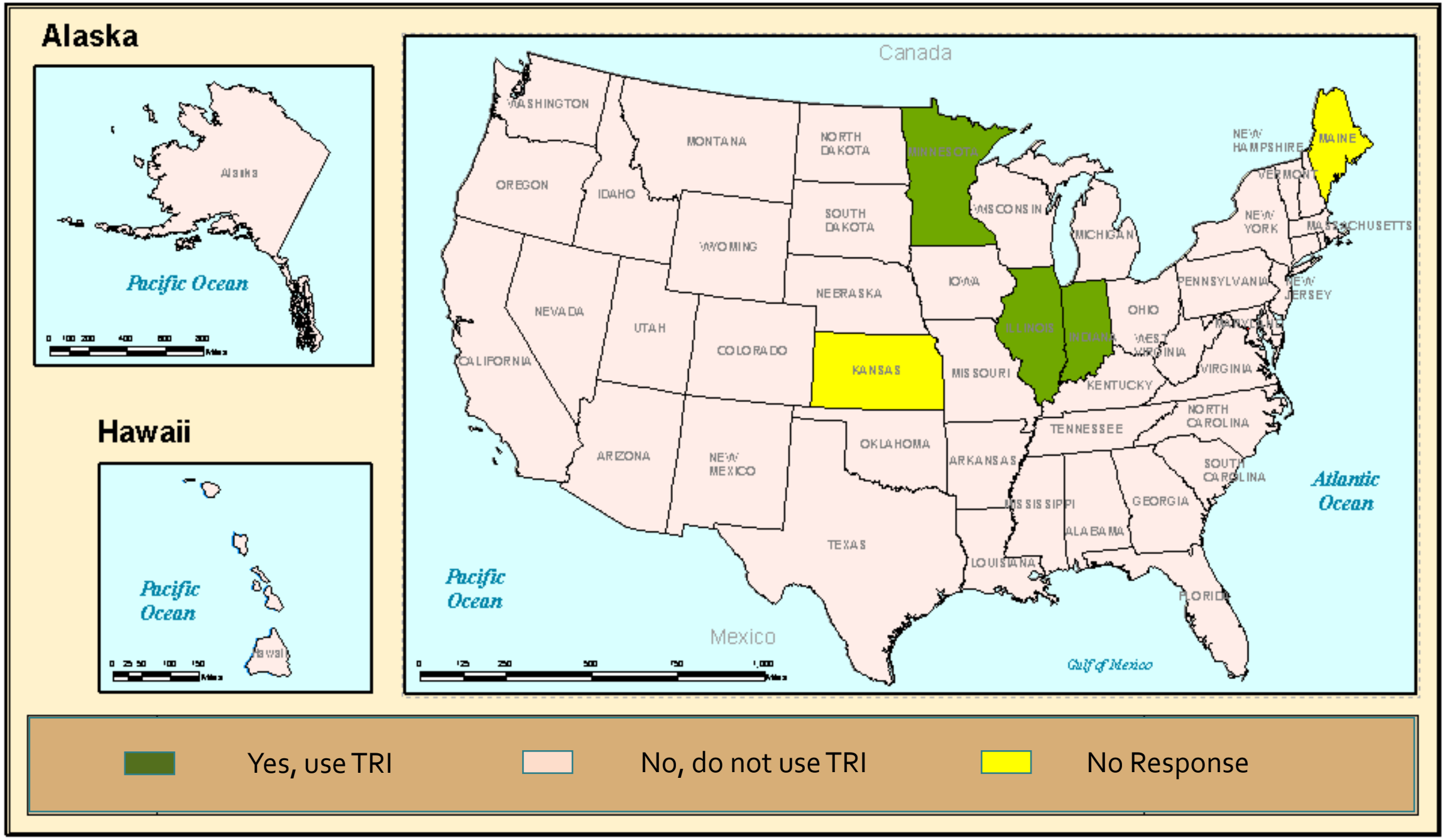
- Pollutant Crosswalk
  - Pollutant crosswalk QA/QCed and finalized
  - Use pollutant crosswalk to update EPA's Substance Registry Services (SRS)

EPA's Substance Registry Services (SRS)

Statutes/Regulations	Synonym
FIFRA-Inerts	Hydrogen chloride
CAA 112R	Hydrochloric acid (anhydrous)
CWA 311	Muriatic acid
CERCLA	Hydrogen chloride
SARA 110	Hydrochloric acid
CWA 311	Hydrochloric acid
EPCRA 313	Hydrochloric acid (acid aerosols)
TSCA Inv	Hydrochloric acid
CAA 112R	Hydrogen chloride (anhydrous)
CAA 111	Hydrogen chloride
CERCLA	Hydrochloric acid
CWA 311	Hydrogen chloride
EPCRA 302	Hydrogen chloride (gas only)
CAA 112R	Hydrochloric acid (conc 37% or greater)
2016 CDR TSCA Inv	Hydrochloric acid
CAA112(b) HAP	Hydrochloric acid

TRI/NEI/SLT Project: Survey States

- Purpose: see if and how states use TRI data in their EI submissions
- Step I - One question survey for "if"
  - State team members distributed survey to NEI program contacts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PENNSYLVANIA
NEW YORK
VERMONT
NEW HAMPSHIRE
MAINE
MASSACHUSETTS
NEW JERSEY
Pacific Ocean
Atlantic Ocean
Gulf of Mexico
Mexico
Yes, use TRI
No, do not use TRI
No Response

TRI/NEI/SLT Project: Survey Step I

- Reasons for "no"
  - TRI data are handled by a different state agency
  - Do not have HAP emissions in the state EI system
  - Only use HAP emissions in the state EI system
  - TRI data are incorporated into the NEI by EPA
  - Difficult to use due to considerable differences in reporting and regulatory requirements
  - State inventory is more comprehensive than the TRI
  - May look at TRI data for comparison or QA/QC

TRI/NEI/SLT Project: Survey States

- Purpose: see if and how states use TRI data in their Emissions Inventory (EI) submissions
- Step I - One question survey for "if"
- Step II – Telephone survey for "how"
  - Interactive
  - In depth
  - State team member conducted the survey
  - 8 Questions
  - EPA also filled up the survey form

TRI/NEI/SLT Project: Survey Step II Results

- Two approaches in states
  - Incoorprate TRI data to NEI submittal: IL & MN
    - Generally similar
  - Delete state emissions for pollutants where they think TRI is more complete/accurate: IN

TRI/NEI/SLT Project: Survey Step II Results

Question	IL	IN	MN	EPA
When?	Complete before the deadline	Complete before the deadline	Aim to before the deadline	After the deadline
What TRI Facilities?	Under state EI requirement	Under state EI requirement	TRI facilities	TRI facilities
What TRI Pollutants?	HAPs, No NH3	HAPs, No NH3	HAPs + NH3	HAPs + NH3
Emissions Calculation Method Code?	Engineering judgement	N/A	Engineering judgement	Engineering judgement

Question	IL	MN	EPA
What TRI emissions?	1. Not shown at a facility 2. Not shown at processes that could possibly emit the pollutants 3. When large differences are observed with the TRI and state EI	1. Not shown at a facility 2. Not shown at processes that could possibly emit the pollutants 3. When large differences are observed with the TRI and state EI, contact facility to confirm	1. Not shown at a facility
SCC?	Best judgement based on existing processes	Best judgement based on existing processes Create new processes and assign SCCs	Best judgement based on existing processes Create new processes and assign SCCs
Release Characteristics?	Use stacks already in the state inventory Treat all emissions as stack emissions	Use existing stacks for existing processes Use defaults for new processes Treat all emissions as stack emissions	Use tallest stack already at facility for stack emissions If no stack already, create one with 100 ft ht, 1 ft diam, 50FPS, 300 F Assign fugitive release points for fugitive emissions

TRI/NEI/SLT Project: Survey Comments

- TRI data
  - Not 100% accurate
  - A good resource and reference point
- Challenges in TRI data
  - Lack of process information
  - Range reporting options in TRI
  - Different facility definition from NEI
- TRI data to state inventories
  - Manual work
  - Time consuming
  - A lot of effort to confirm with facilities when TRI <> state inventories
- Future - TRI emissions can be used in NEI for all sources with CAER project

Next Steps

- Develop recommendations for near and future efforts to harmonize and utilize both systems towards the CAER goals (Part 2)
  - Develop EPA guidance for states on how to use TRI data in NEI submissions
  - Investigate reporting guidance used in NEI and TRI and harmonize
  - Explore the option to expand SLT capacity to provide review capabilities of TRI reported data
  - SLT/NEI/TRI case studies to demonstrate workflows and data sharing in a test environment

Questions

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