Spatial Integration of Tribal Inventories into Regional Photochemical Models

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Background

• Midwest RPO Needs to seamlessly integrate tribal inventories into Photochemical model process.
• Need to recognize the differences and similarities between the tribal inventories and the state inventories.
• New methods must recognize the sovereignty of the tribes while keeping inventory continuity.
• Agreement to a set of unique alpha numeric tribal identifiers
• Enhancement of the RPO data exchange protocol to include tribal and alternate jurisdiction codes.
• Agreement on the correct methods for removing state developed inventories from tribal lands when tribal inventories are available.
• Development of a set of spatial surrogates for the nation that include tribal identifiers.
Tribal ID’s

• Use the BIA Tribal Codes
• Modified for tribal bands (sub-areas) that intend to build inventories.
• 3 digit code
RPO Data Exchange Protocol

- Protocol will be modified to include “Alternate Jurisdiction Code” (AJC)
- 5 Digit code in RPO Protocol but 3 digits in NIF3.0
- Need the extra digits to cover complex spatial events (vessels, census tracts)
RPO Data Exchange Protocol

- Tribes fill out Country Code “US”, FIPS State/County code as “00000” and Tribal code in AJC
- If state and county are used in FIPS field models will think it is seeing a subsection of a county
  - city, pollution control district, zip code, or individual census tracts.
- New CONCEPT Emissions model will need to be modified to include AJC
Spatial Processing

- Activity of Chemical Transport Emissions Models.
- Task is to take emissions from whatever spatial scale they are received in and fit them onto a photochemical modeling grid.
Problem of Spatial Allocation

- Most States do not "Actively Remove" tribal lands from their inventories.
- If tribal inventories are submitted, we need to remove state inventory from tribal lands before we add tribal emissions.
- Reason we do not say that the states "include" tribal lands is that some surrogate data sets may not fully represent tribal lands (vehicle registration, census).
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What Tribes Need to Know

- Use state/county code of 00000
- Match State SCC Code or make sure there are “0” records using state SCC’s where you want state emissions removed.
- We have to retain surrogate values because this method can be used for tribal inventories that cross state/county boundaries.
- If a state “Actively Removes” tribal emissions then appropriate flags need to be included on EP or equivalent record.
Fundamental Assumptions

• State inventories do not “Actively Remove” Emissions so if A stgat
Spatial Processing Logic

State Derived Emission Estimates

Are Tribal emissions removed from state estimates?

NO

Tribal emissions available for county and SCC

NO

Are Tribal emissions removed from state estimates?

YES

Type 1. Separate state estimates from tribal lands. Do not decrease state emissions.

Include Tribal emissions on tribal lands. If none exist leave “empty” cells.

NO

Tribal Derived Estimates

Tribe Derived Estimates

YES

Type 2 Separate state estimates from tribal lands and decrease state emissions by a proportional amount.

Include Tribal emissions on tribal lands.

NO

Type 3. Do not change state emissions estimates. Put state emissions on tribal and non-tribal lands.

Include Tribal emissions on tribal lands.
MWRPO Has contract with Alpine Geophysics to develop new national Surrogates with CONCEPT’s Spatial Processor with new tribal surrogate methodology.

Completed in September/October

SMOKE/EMS/EPS do not currently have automated methods to include tribal inventories.
Where We Go From Here?

- MWRPO volunteered to do this 18 months ago.
- Talked with EPA, ITEP, MWRPO.
- Need to bring it to other RPO’s
  - Tribes, FLM’s, States, EPA.
- Modify RPO Protocol to version 1.1