Emissions Mapping and Information Tool (EMIT)

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18th International Emission Inventory Conference
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"Comprehensive Inventories - Leveraging Technology and Resources"

Background

- In Canada:
  - Comprehensive air pollutant emission data are generally only available at the National or Provincial/Territorial level.
  - The demand from scientists, policy analysts, and the general public for up to date emissions information and emissions maps is increasing.
  - Environment Canada staff needed a tool to navigate through and query emissions data and generate results and maps of emissions data in a consistent and timely manner.

The EMIT Tool

- Emissions Mapping & Information Tool (EMIT).
- Toolbar Extension to ESRI's ArcMap platform.
- Can be used to load, query, map, and report on pre-compiled Canadian and US national emissions inventories at a number of geo-political levels.
- The simple query 'wizard' means no need for advanced knowledge of databases, query language(s), or ArcGIS.

Emissions Inventories

EMIT is currently populated with:

- Canadian 2002 CAC EI by CSD.
- DRAFT Canadian 2005 CAC EI by CSD.
- US 2002 NEI by County.
- Plans to update in future with:
  - EC 2006 (by CSD)
  - US 2005 NEI (by County)
  - Others (e.g., 2000 CAC EI, 1995 CAC EI)

Spatial Resolution

Air pollutant emissions can be queried and mapped to the following levels:

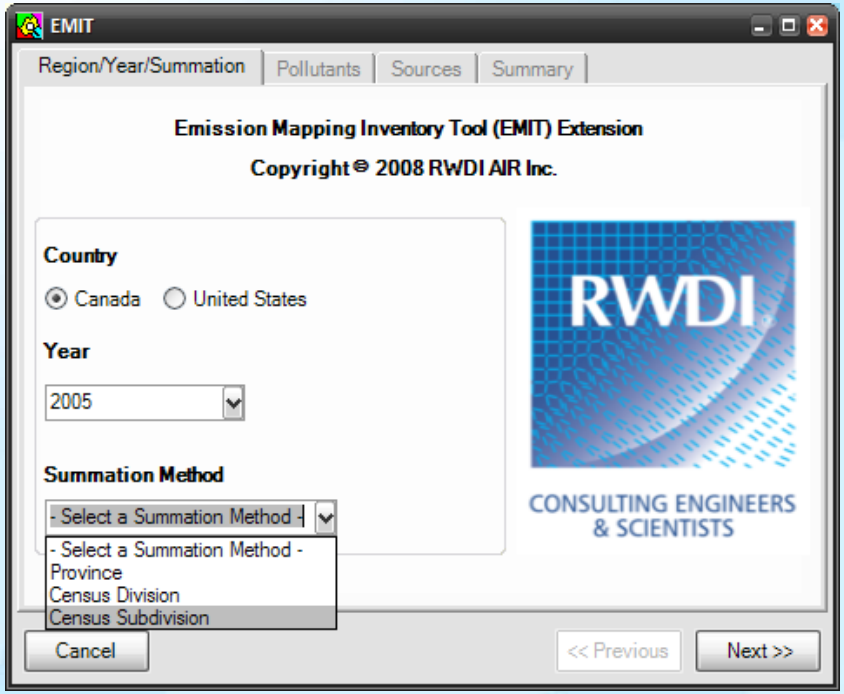
- → CANADA
  - → PROVINCE
    - → CENSUS DIVISION
      - → CENSUS SUBDIVISION
- → US
  - → STATE
    - → COUNTY

‘Wizard’ Paradigm

Drop-down lists auto-populated and inventory dependent…

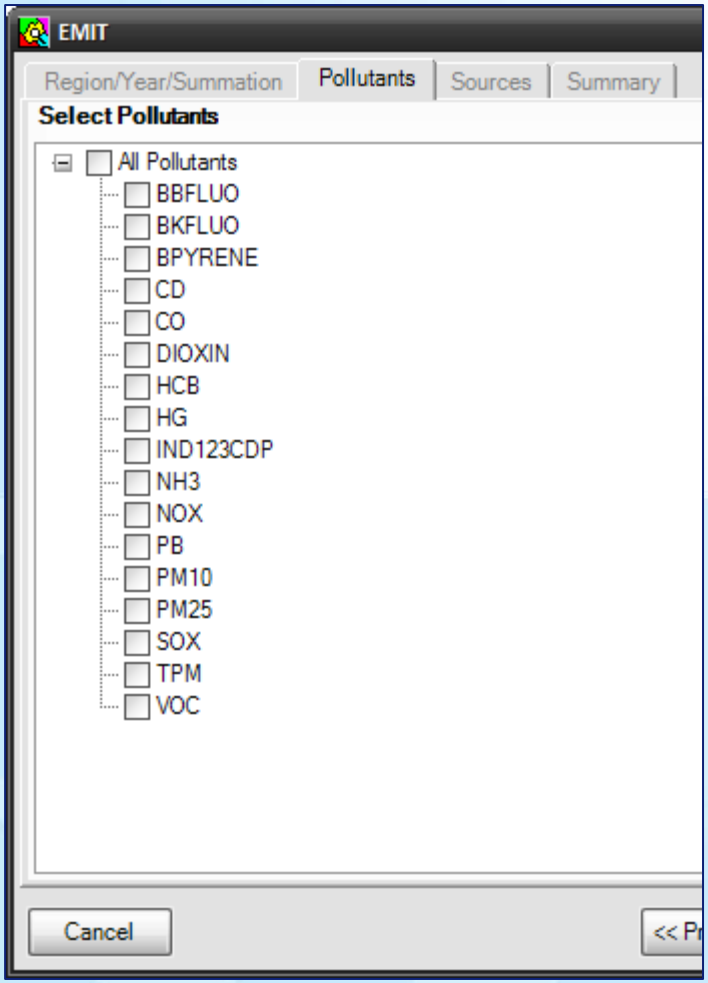
Example: When a Province is selected, users can compute emission summaries by any one of:

- Province
- Census Division
- Census Subdivision

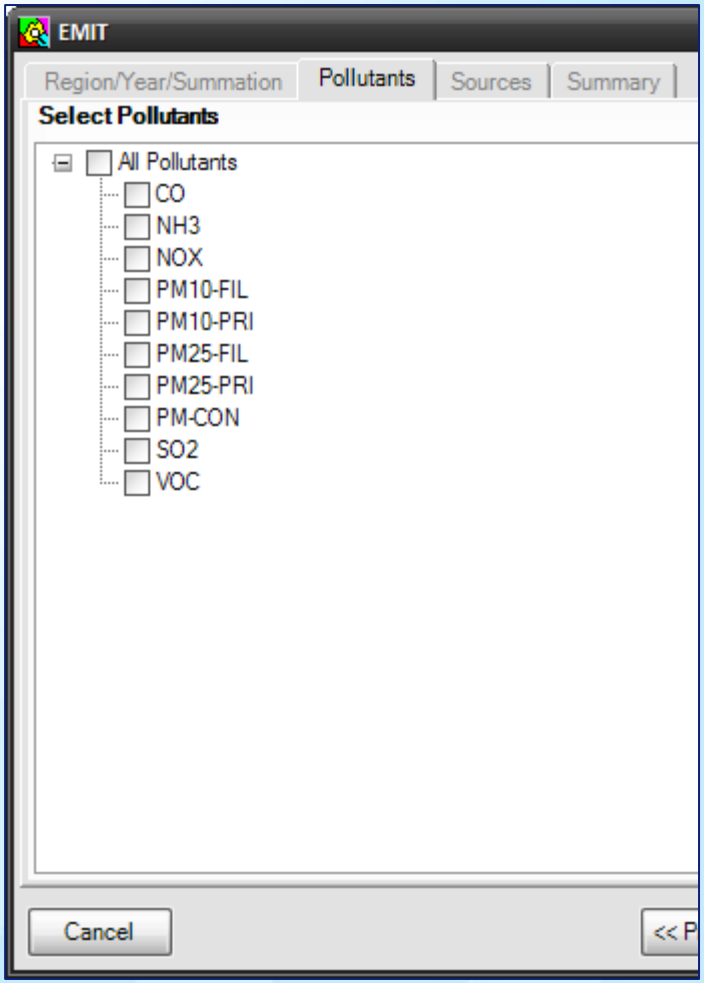


Pollutants

Canada

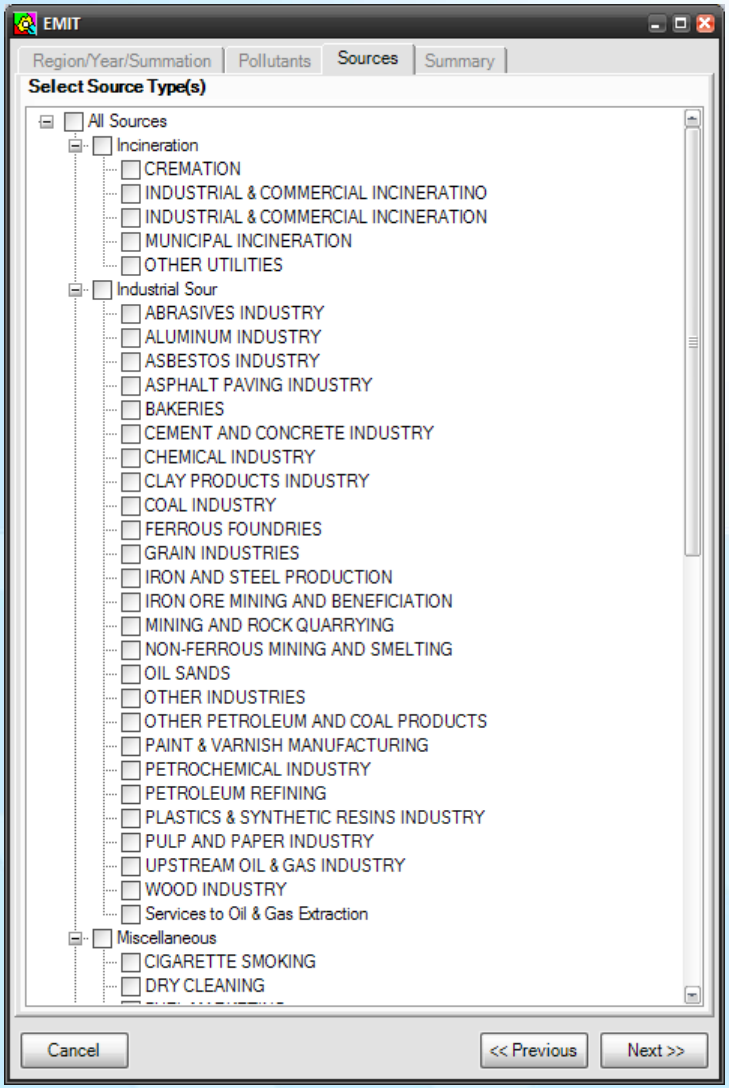


US

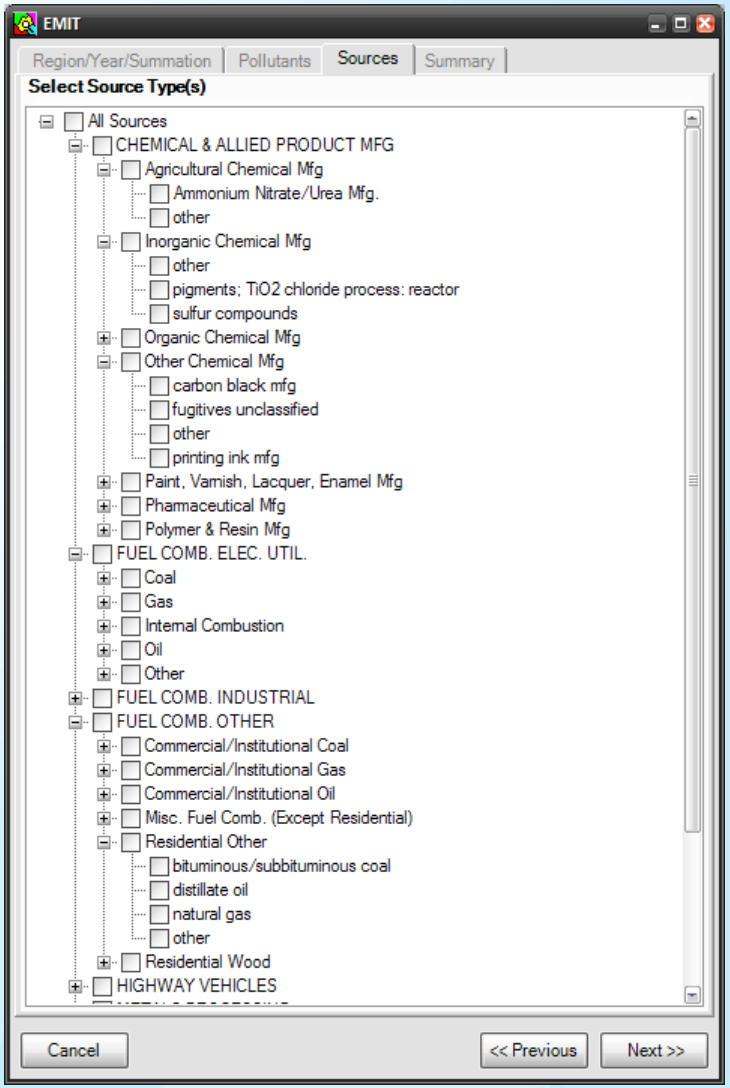


Source Sectors

Canada = EC Report

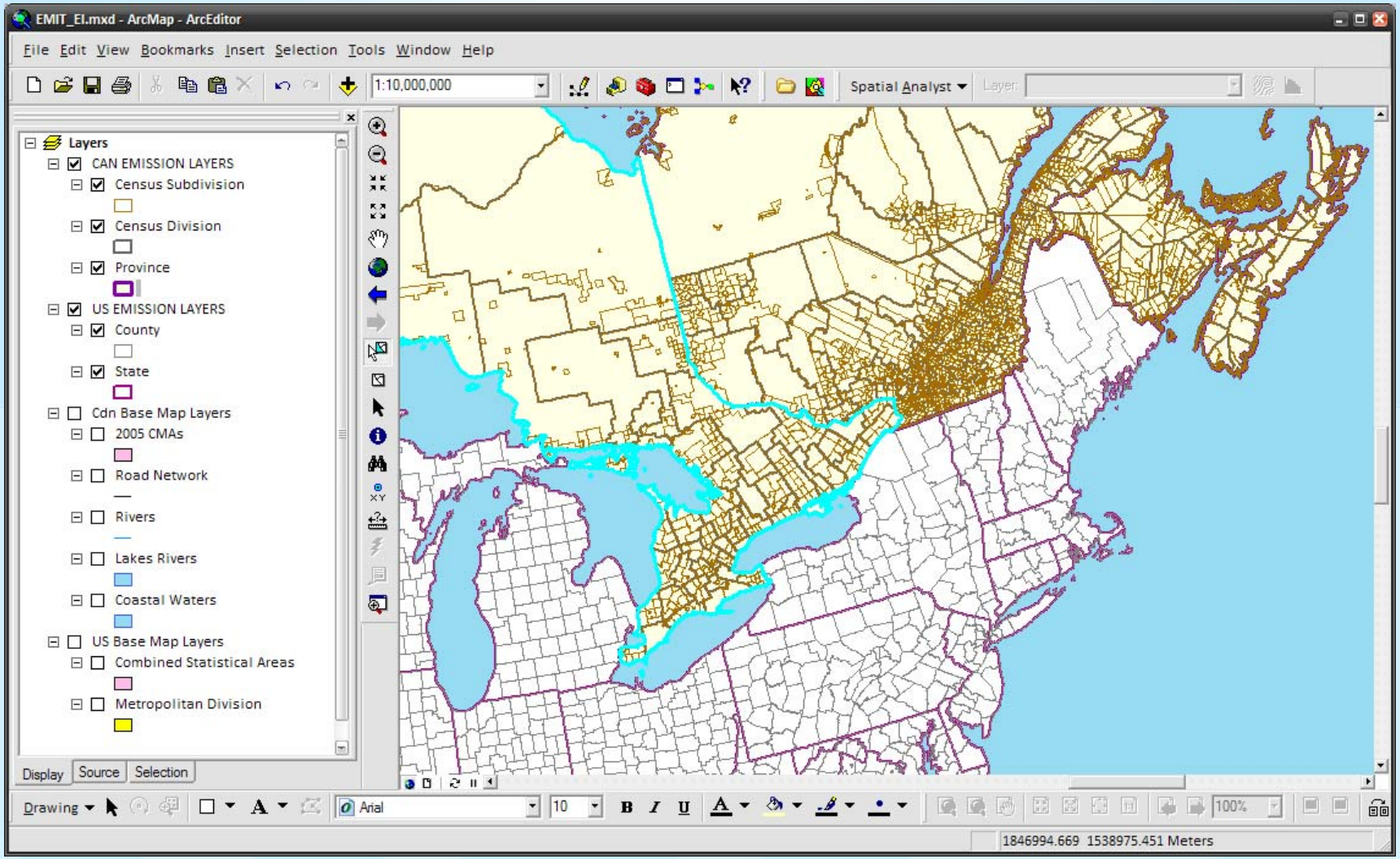


US = EPA Tier III



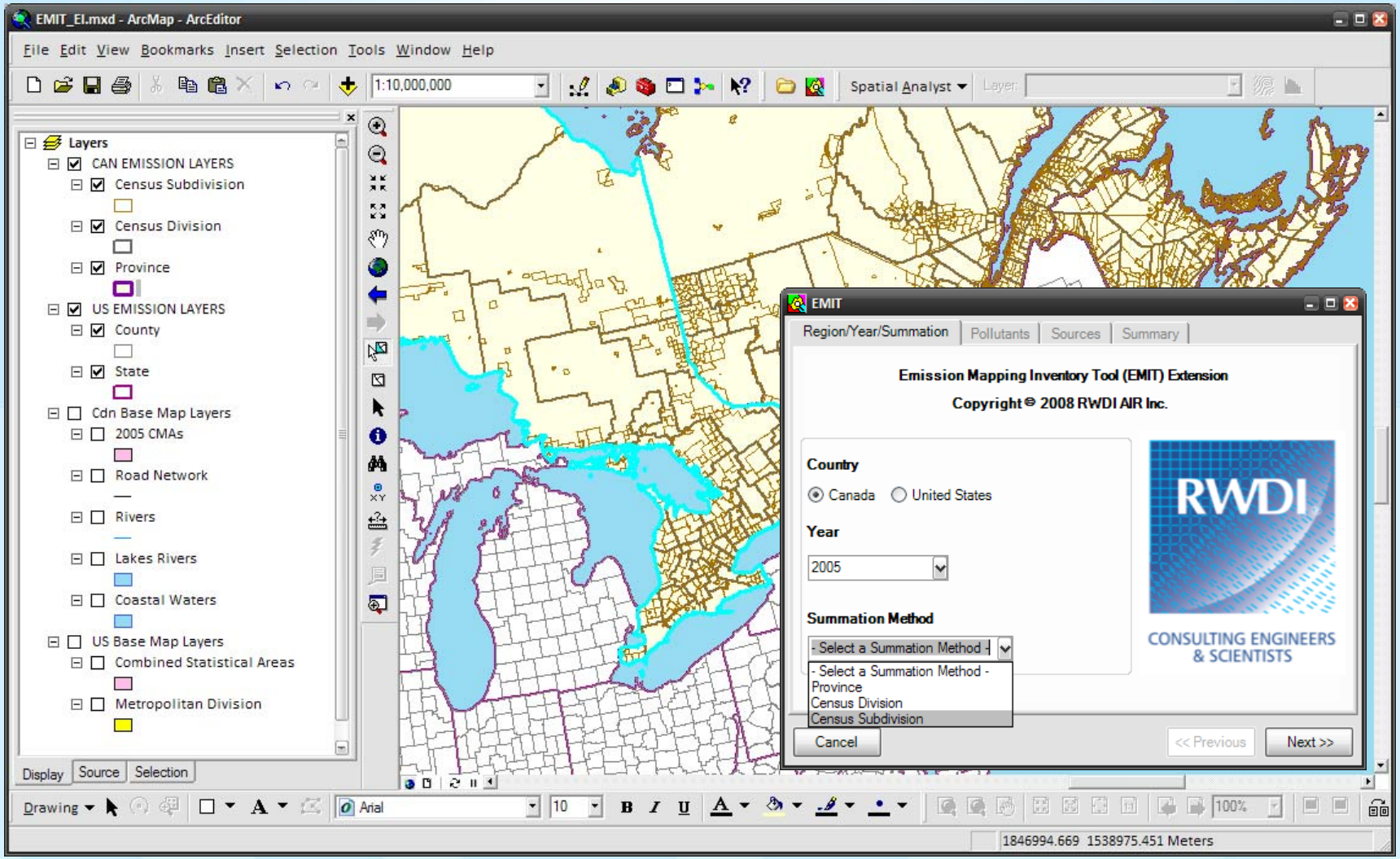
Walk-through

Loading the base map layers & database…



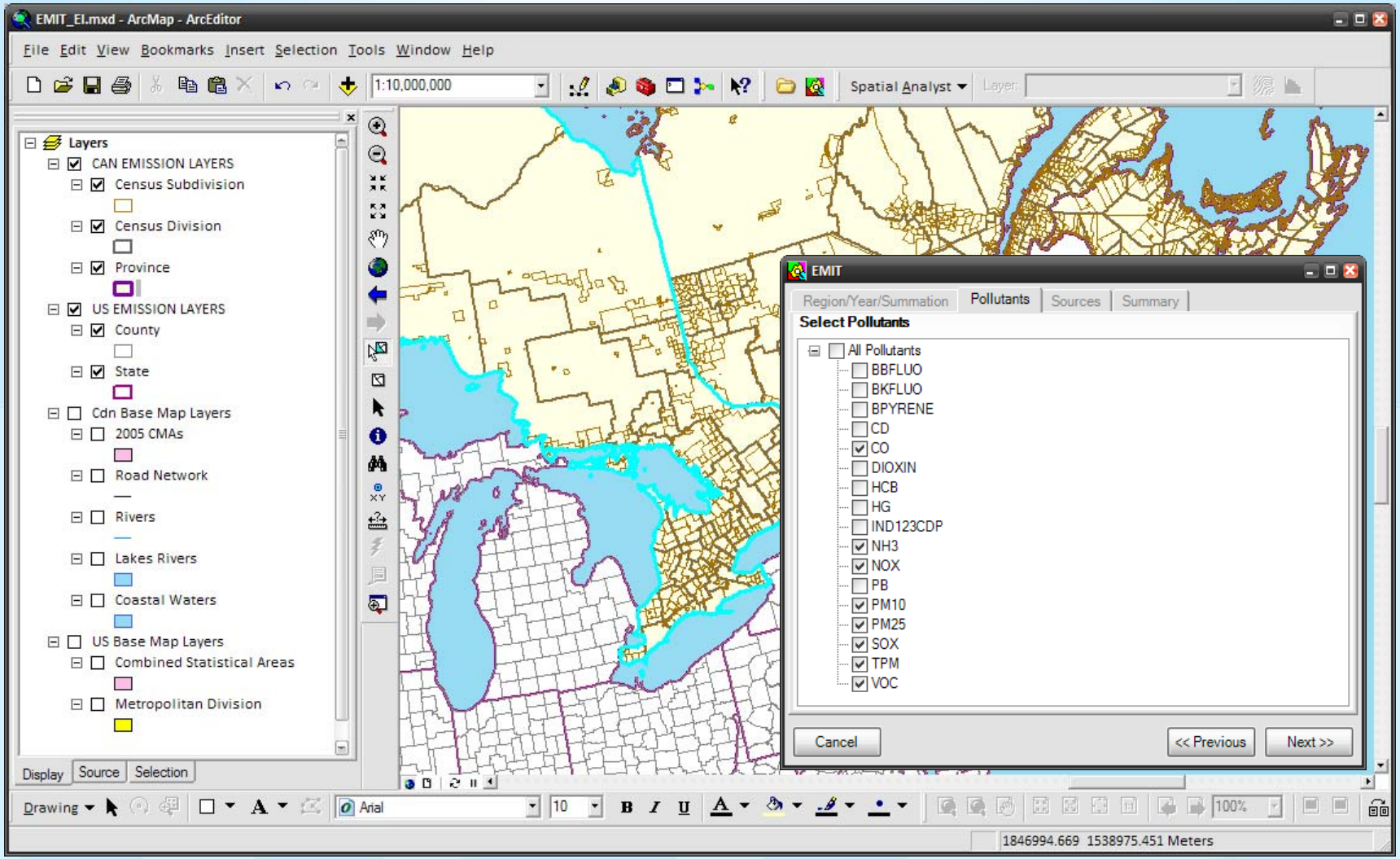
Walk-through (Cont'd)

Selecting a region…



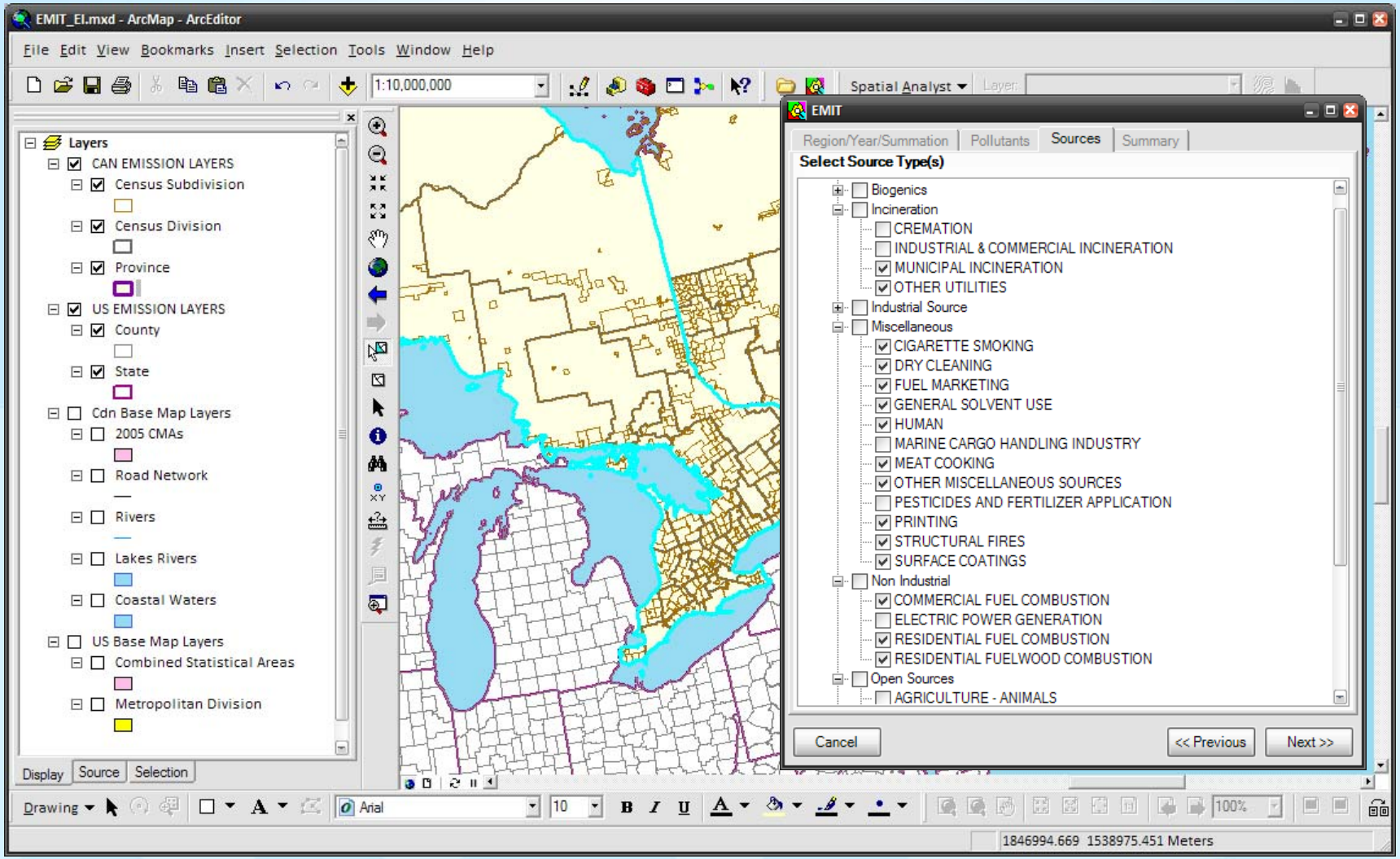
Walk-through (Cont'd)

Selecting pollutants…



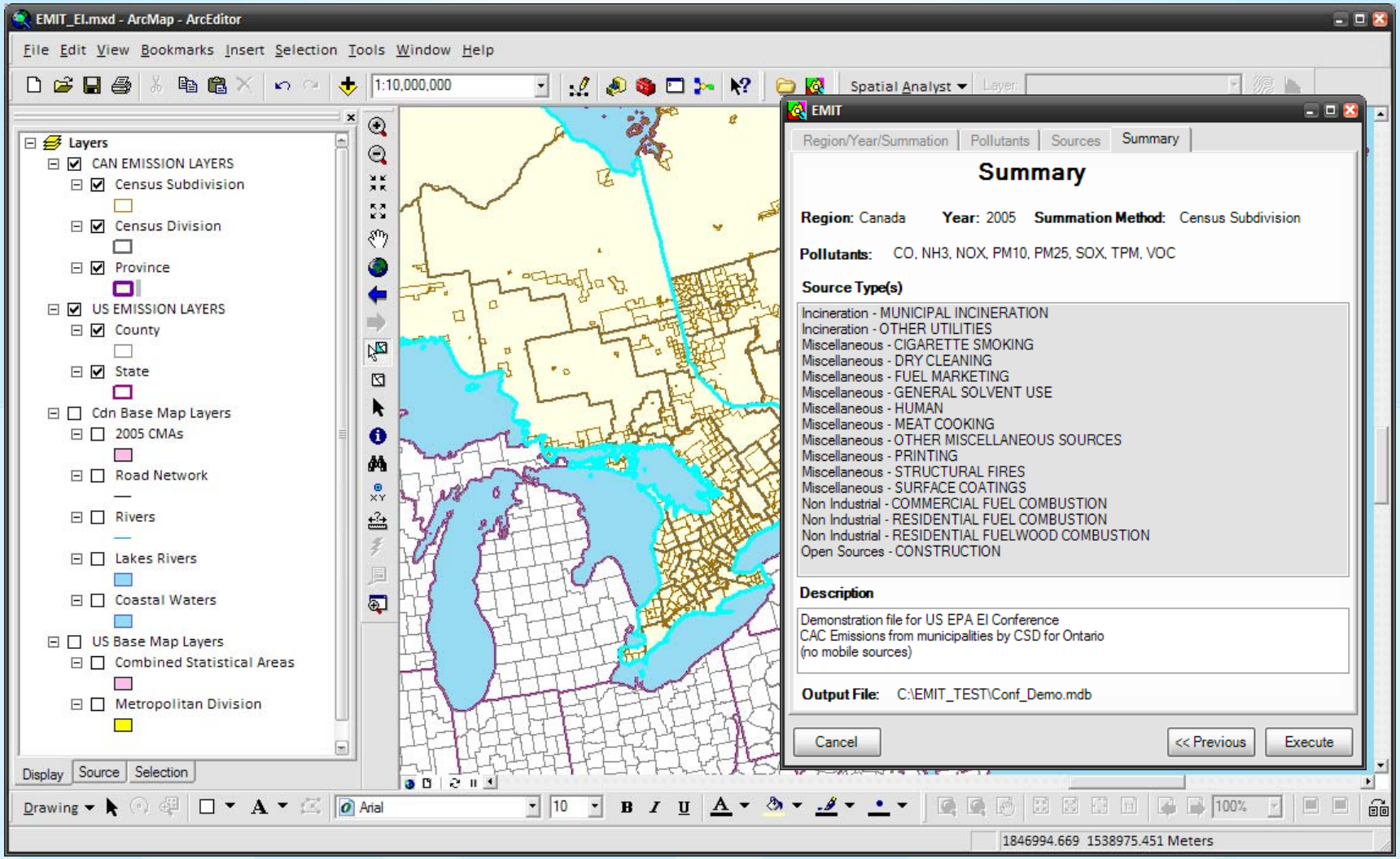
Walk-through (Cont'd)

Selecting source sectors…



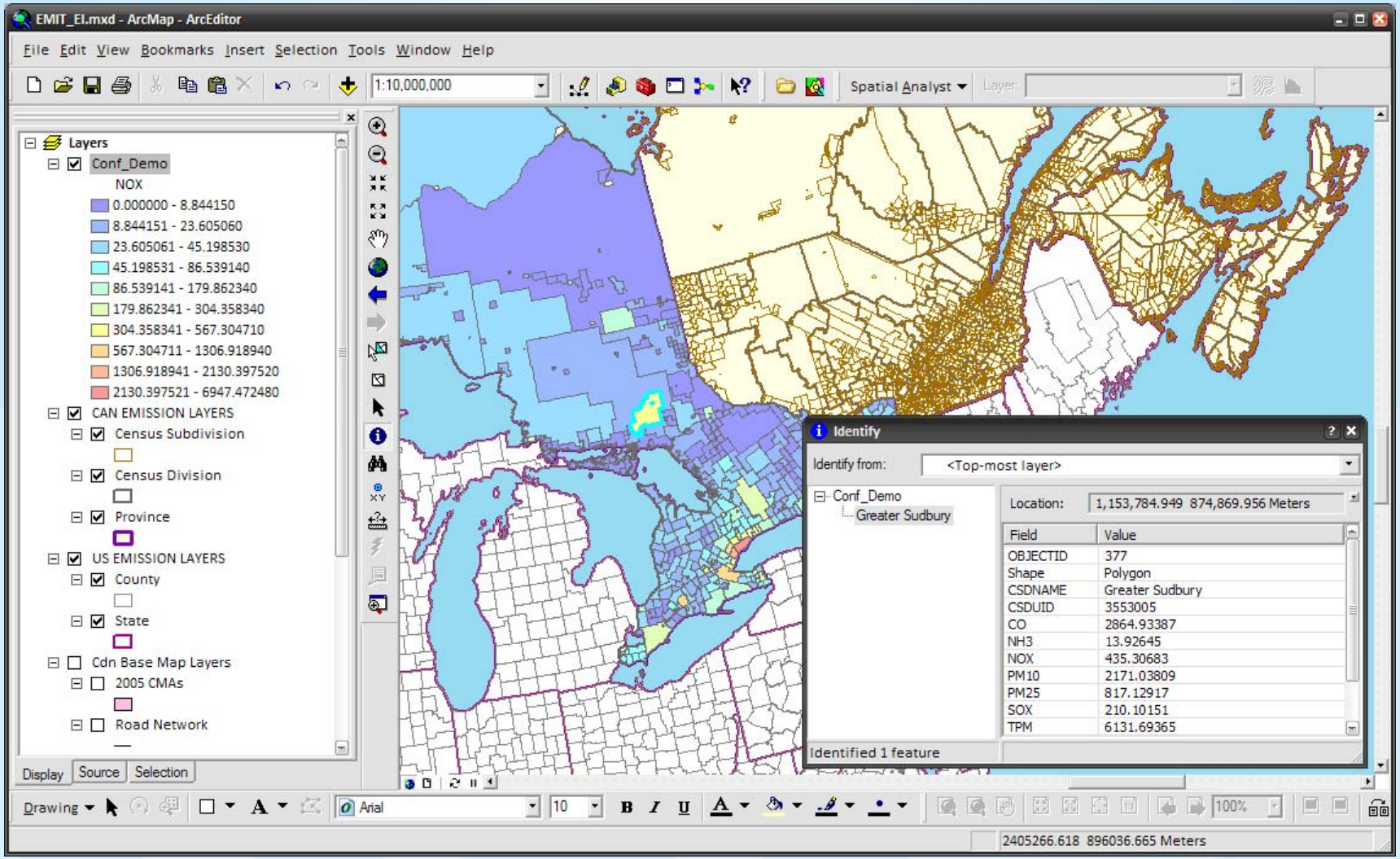
Walk-through (Cont'd)

Metadata entry and QA/QC…



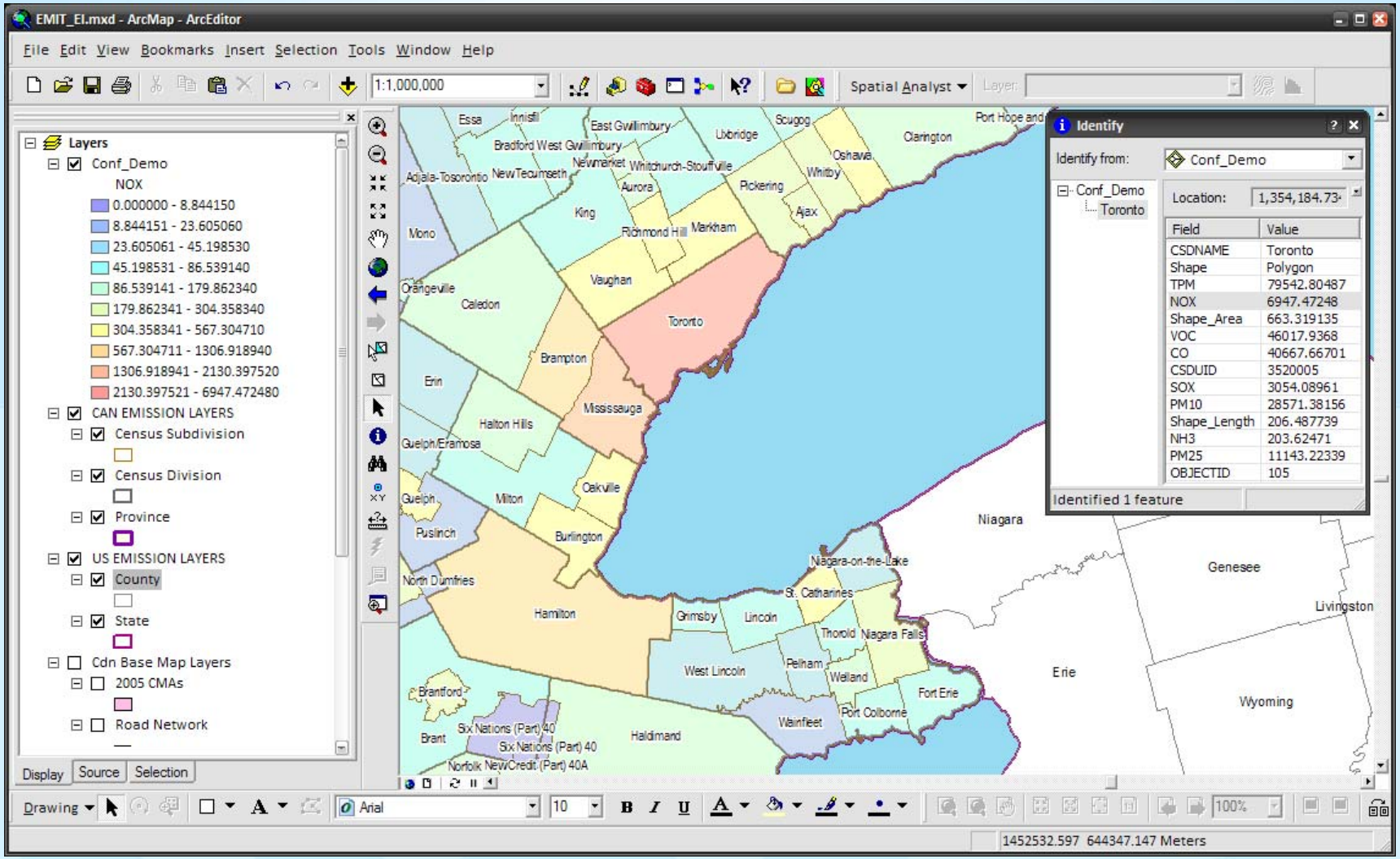
Walk-through (Cont'd)

Mapping the results…



Walk-through (Cont'd)

Mapping the results…



Next steps

- Feature enhancements (e.g., auto-compute emissions per unit area, tabular outputs, more robust error-checking, etc.)
- Include additional functionality and more inventory years (including projections) for Canada and the U.S. so that trends and forecasts can also be assessed.
- Update Canadian inventories to reconcile change in census boundaries (2006 vs 2001)

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