EPA’s Draft Regional Greenhouse Gas Inventory Guidance

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Overview

- Background
- Approach
- Data availability and methodology
- Level of disaggregation
- Timing and scope
- GHG inventory sources
- Significant sources
- Conclusion

Background

- Increasing number of regional groups creating GHG inventories
  - Greater pool of resources
  - Distribute mitigation and research costs
  - Knowledge sharing
- EPA developed methods based on:
  - SIT, IPCC, U.S. Inventory
  - Regional data availability
  - Regional efforts underway

Approach

- Evaluate sources of emissions at local levels
  - Relative importance
  - Availability of data and methods
- Review of MWCOG and DVRPC efforts
  - Different stages of development
- Comparison of:
  - Applicable sources and magnitude
  - Data availability and methodology
  - Level of disaggregation
  - Timing and scope
  - Method of estimating significant sources

Data Availability and Methodology

- Bottom-up estimates
  - Data are from individual sources, and sum to represent a regional total
  - Examples: electricity consumption, transportation
- Top-down estimates
  - Data are aggregated for the region or state, and downscaled to determine county totals
  - Examples: ozone depleting substances, aviation

Level of Disaggregation

- MWCOG
  - ✓Region
  - County
  - Municipality
- DVRPC
  - ✓Region
  - ✓County
  - ✓Municipality

Timing and Geographic Coverage (Scope)

- MWCOG
  - 2005 base year, 2050 projections
  - Parts of 3 states
  - Nineteen jurisdictions
- DVRPC
  - 2005 base year, 2035 projections
  - Parts of 2 states
  - Nine counties, 364 minor civil divisions (MCD)

GHG Inventory Sources: Regional Applicability

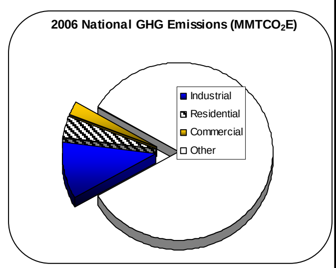
Source	MWCOG	DVRPC
Direct Fuel Use and Electricity		
Residential	✓	✓
Commercial	✓	✓
Industrial	✓	✓
Electric Power	✓	✓
Transportation		
Highway Vehicles	✓	✓
Aviation	✓	✓
Rail	✓	✓
Marine		✓
Industrial Processes		
Ozone Depleting Substitutes	✓	✓
Iron and Steel		✓
Cement		✓
Agriculture		
Agricultural Soils		✓
Manure Management		✓
Enteric Fermentation		✓
Waste		
Solid Waste Management	✓	✓
Wastewater	✓	✓
Land Use, Land-Use Change, and Forestry		
Forest Carbon	✓	✓
Urban Trees		✓

Regional Methodology: Significant Sources

- Direct fuel use
- Electricity consumption
- Transportation
- Industrial processes
- Agriculture
- Waste
- Land use, land-use change, and forestry

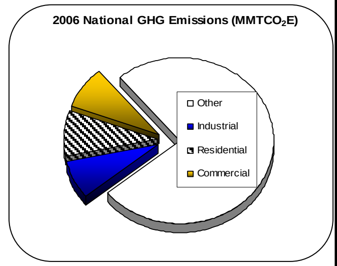
Regional Direct Emissions from Fuel Combustion

- Significant at the regional level
- Data collected from fuel providers



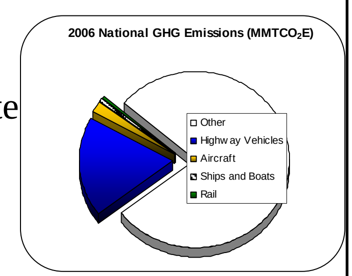
- Alternate methodology varies
  - Residential
  - Commercial
  - Industrial
- Apply U.S. specific emission factors

Indirect Emissions from Electricity Consumption



- Significant at the regional level
- Data collected from electric distribution companies
- Alternate methodology varies
  - Residential
  - Commercial
  - Industrial
- Apply EGrid regional emission rate

Transportation Emissions

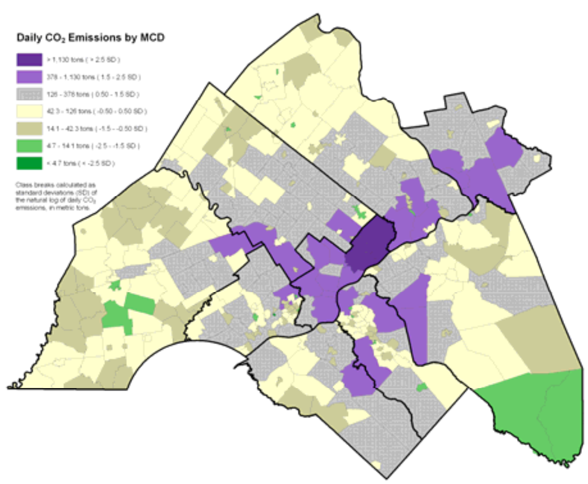


- Fastest growing source
- Regional models estimate VMT, key driver of highway emissions
- Data sources for non-highway emissions:
  - Air Statistics Database
  - National Transit Database
  - Freight Analysis Framework
  - EPA's NONROAD Model

Using DVRPC's Transportation Model

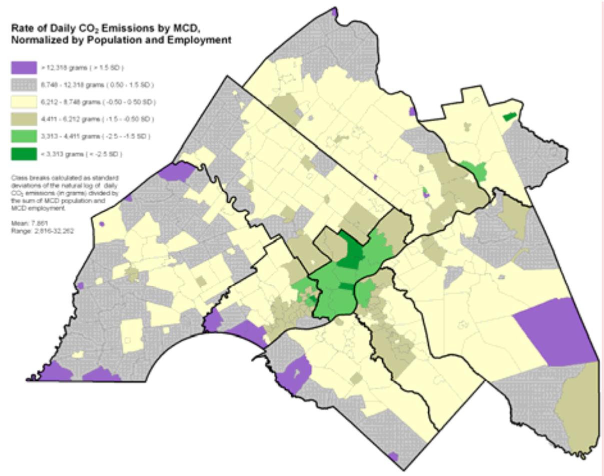
- Total VMT estimated using transportation demand model and HPMS data
- Allocated VMT to municipalities
  - Split VMT equally between origin and destination
  - Omitted through traffic from allocation
- Impact of different transportation actions can be considered

Emissions by MCD, Total



Source: DVRPC

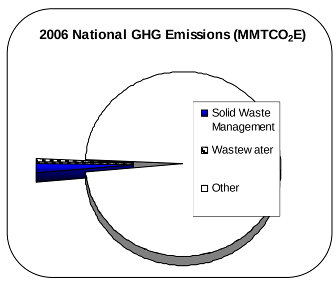
Emissions by MCD, Normalized by Population and Employment



Source: DVRPC

Direct and Indirect Emissions from Waste

- Direct
  - Site-specific data
  - Identify LFGTE potential
- Indirect
  - Population-based
  - Cost-effective mitigation options



Conclusion

- Many benefits to creating regional GHG inventories
- Regional inventories vary based on:
  - Applicable sources, data availability, scope, timing, and level of disaggregation
- Significant sources in all regions include:
  - Direct fuel use
  - Electricity consumption
  - Transportation

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