NATA Update

Air Toxics Summit

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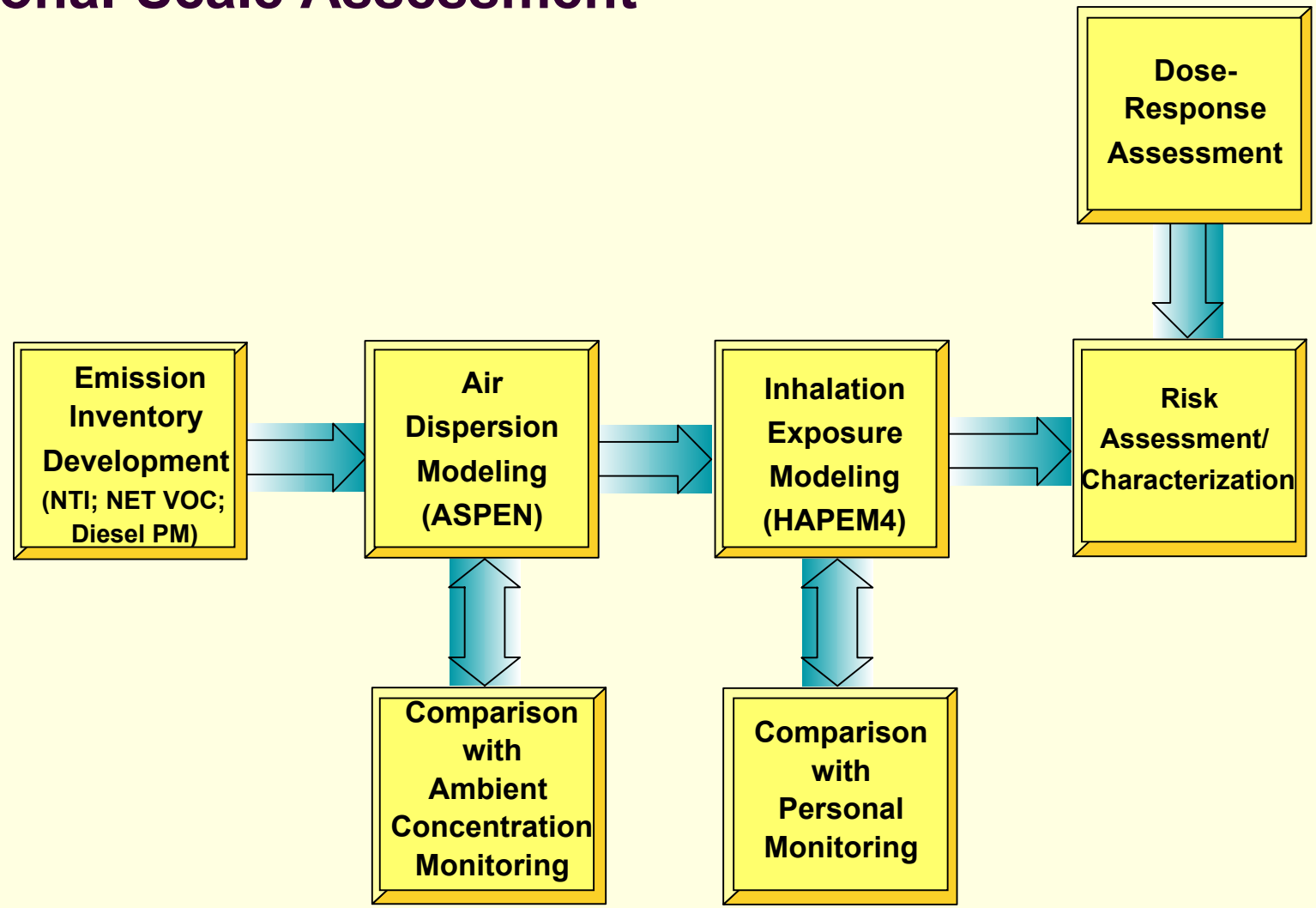
June 2004

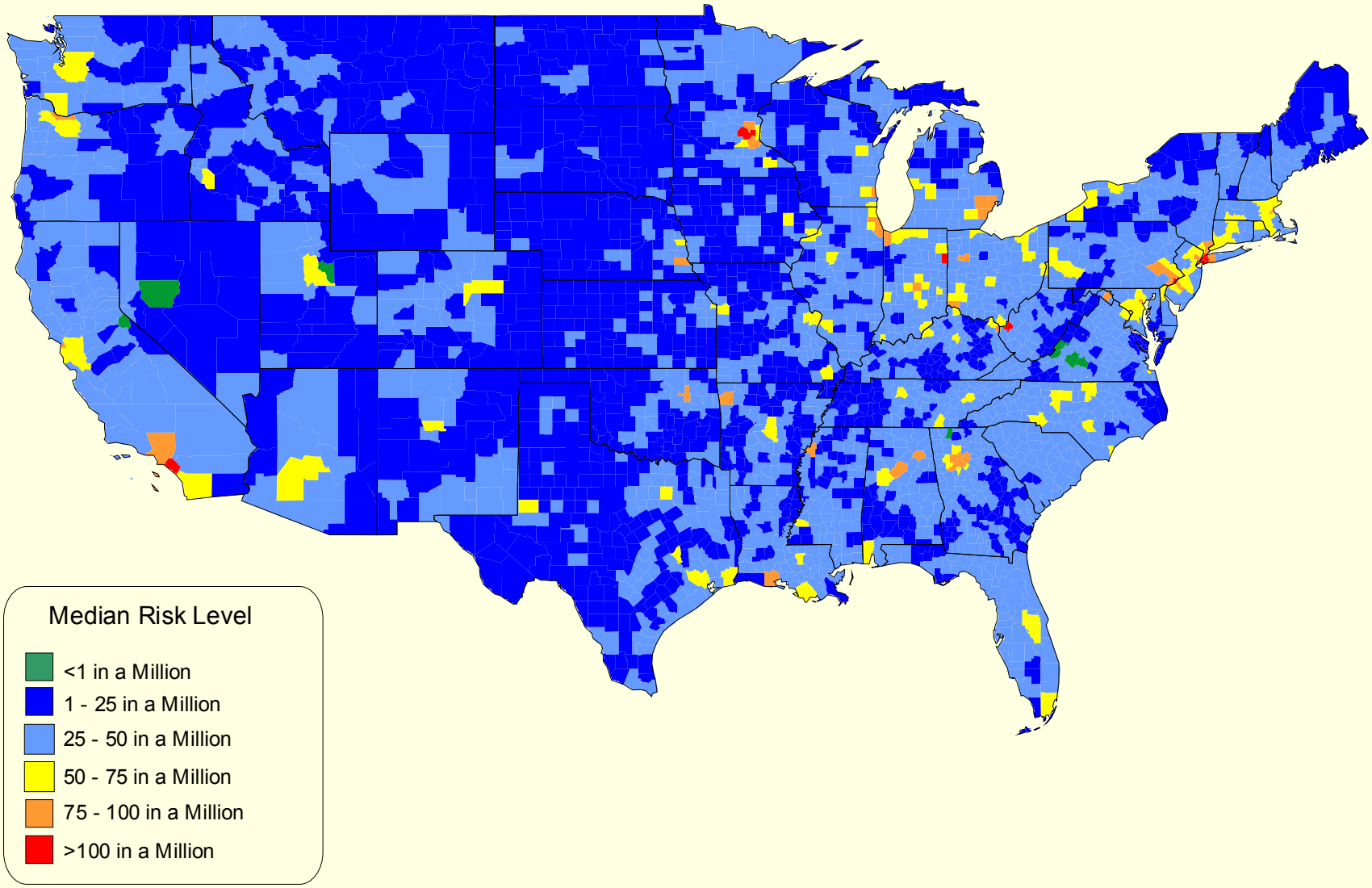
National Air Toxic Assessment Goals of NATA

- Tool for EPA and States/Locals/tribes
- Identify air toxics of greatest concern
- Characterize contributions of different emission sources to exposure and risk
- Prioritize collection of new data
- Provide a baseline (with ambient data) to track trends and measure progress against goals
- By itself, the assessment is **NOT** being used as the basis for specific regulatory decisions

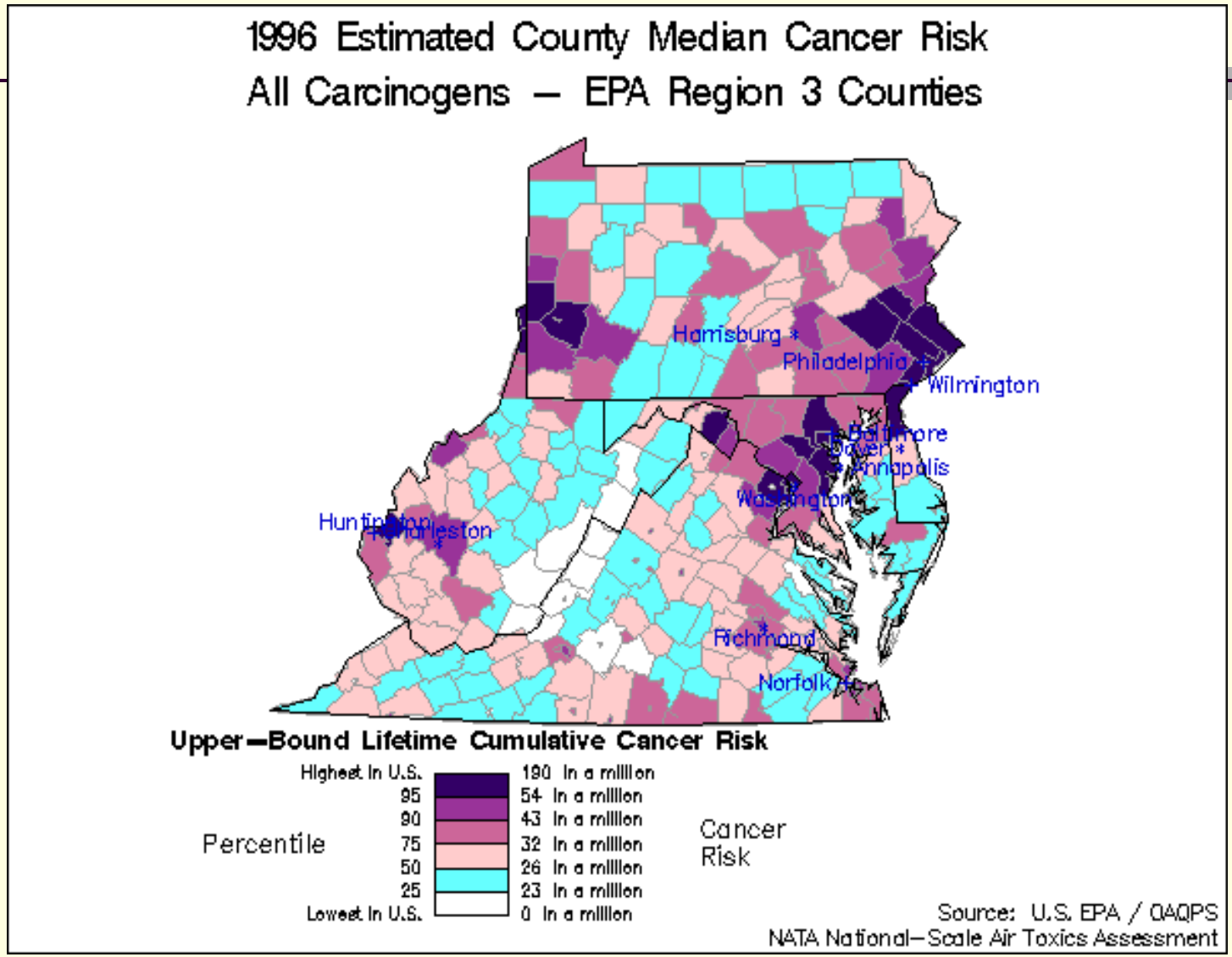
Components of the Initial National-Scale Assessment



NATA - National Scale Assessment
Predicted County Level Carcinogenic Risk



Cancer Risk - Cumulative



Initial National-Scale Assessment Risk Characterization

CANCER DRIVERS

- Benzene
- Chromium
- Formaldehyde
- Arsenic
- 1,3-Butadiene
- Coke oven emissions
- POM
- Acetaldehyde
- Carbon Tetrachloride
- Chloroform
- Ethylene Dibromide
- Ethylene Dichloride
- Perchloroethylene

NON-CANCER

- Acrolein

Initial National-Scale Assessment Risk Characterization

- **Not found to be drivers or contributors**
  - Hexachlorobenzene
  - Lead compounds
  - Mercury compounds
  - Methylene chloride
  - PCBs
  - Propylene dichloride
  - Vinyl chloride
- **But this assessment cannot exonerate HAPs because:**
  - It includes inhalation exposure only - some air pollutants (e.g., PCBs, mercury, lead) may pose significant risks by ingestion
  - It has low resolution – may not capture hot spots
  - Limited comparisons show substantial underprediction of ambient levels, especially for metals
  - It does not estimate individual extremes – only typical exposures

Some Differences between 1999 NATA and 1996 NATA

- Enhanced to 99 NEI for HAPs
- Quality control automated, improved
- Included more categories in point sources
  - Increased number of facilities in point source inventory from 40K to 70K
  - Included new non-point categories
- Included new mobile source models
- Improved speciation profiles by category-specific for:
  - Chromium (+6)
  - POM into unit risk classes

Dispersion Modeling

- Addition of new HAPs (150+ total)
  - Selected all HAPs where we have health data (except Dioxin)
- Addition of Alaska and Hawaii
- Accuracy improved by
  - new national database of land use data and updated census data
  - Improved region-specific background levels from monitoring data
- Analysis includes
  - Updated meteorology (1999)
  - Updated tract centroids (2000)
- Updated model-to-monitor comparison

NATA 1999 efforts

- Draft 1999 NEI (Fall 2002)
- ASPEN modeling performed using draft NEI, 32 NATA 1996 pollutants+ (Spring 2003)
- Air quality modeling results shared with State & local agencies (Spring 2003)
- NEI corrections received in March 2003
- Revised final NEI in July 2003
- Air quality, exposure and risk modeling currently being performed using final inventory (Nov 2003)
  - Will model 150+ pollutants

NATA 1999 efforts (cont.)

- Risk Characterization using ASPEN (December 2003)
- HAPEM5 Modeling (April 2004)
- Risk Characterization using HAPEM5 (May 2004)
- Internal Reviews (June 2004)
- Regional Office & S/L/T Previews (Summer 2004)
- Final NATA 1999 assessment scheduled for release Late Fall 2004
- No External Peer Review Expected

1999 NEI Summary

1999 NEI - Benzene Emissions

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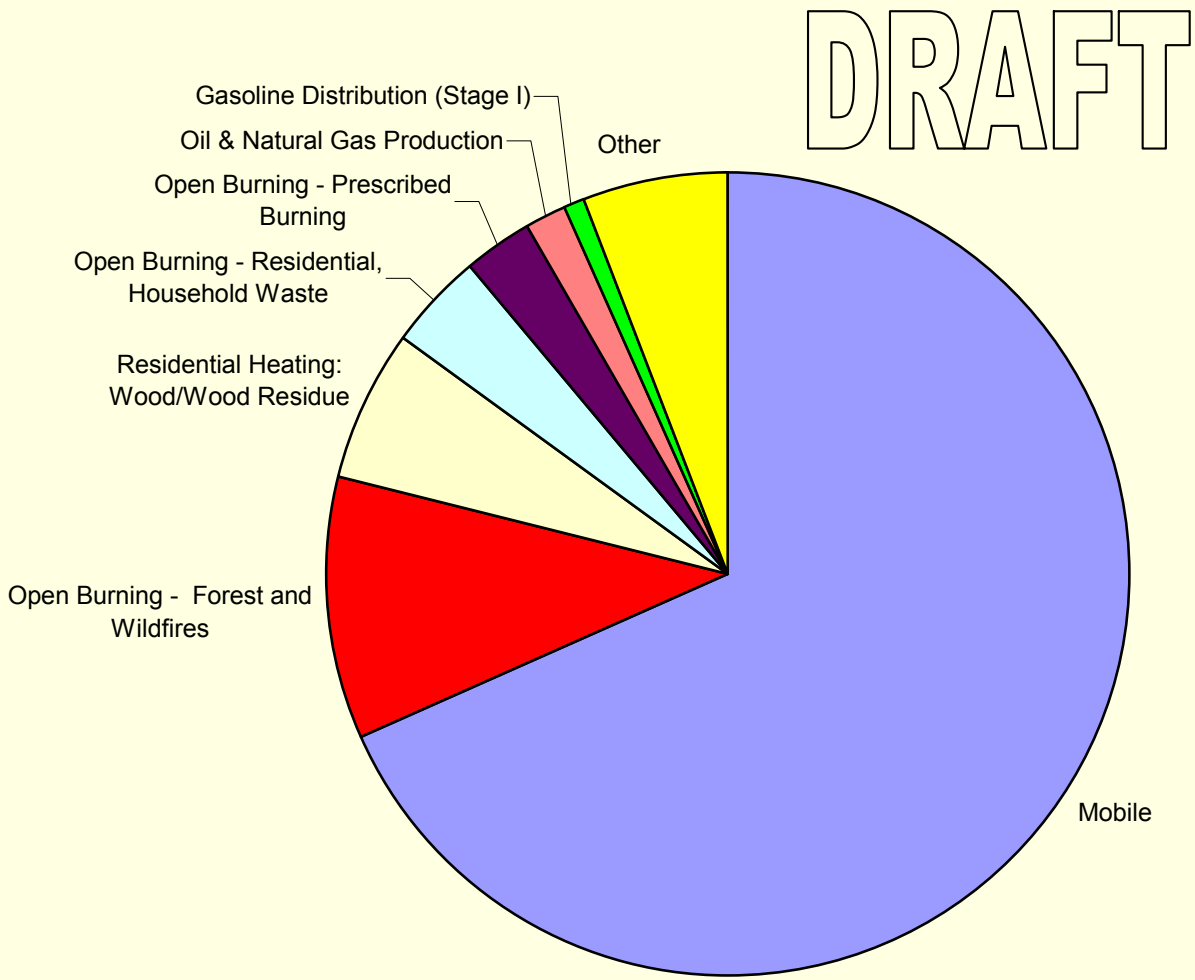

1999 NEI - Formaldehyde Emissions

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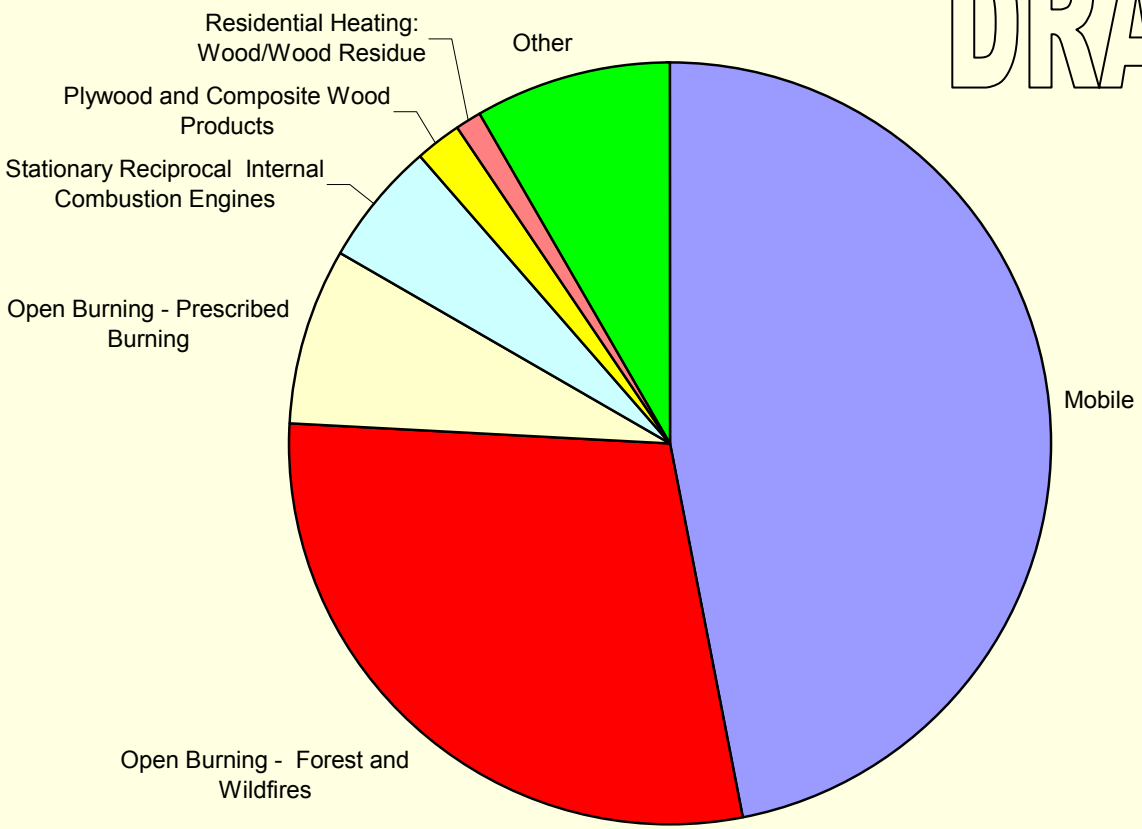

Primary Emissions Only

1999 NEI - Chromium Emissions

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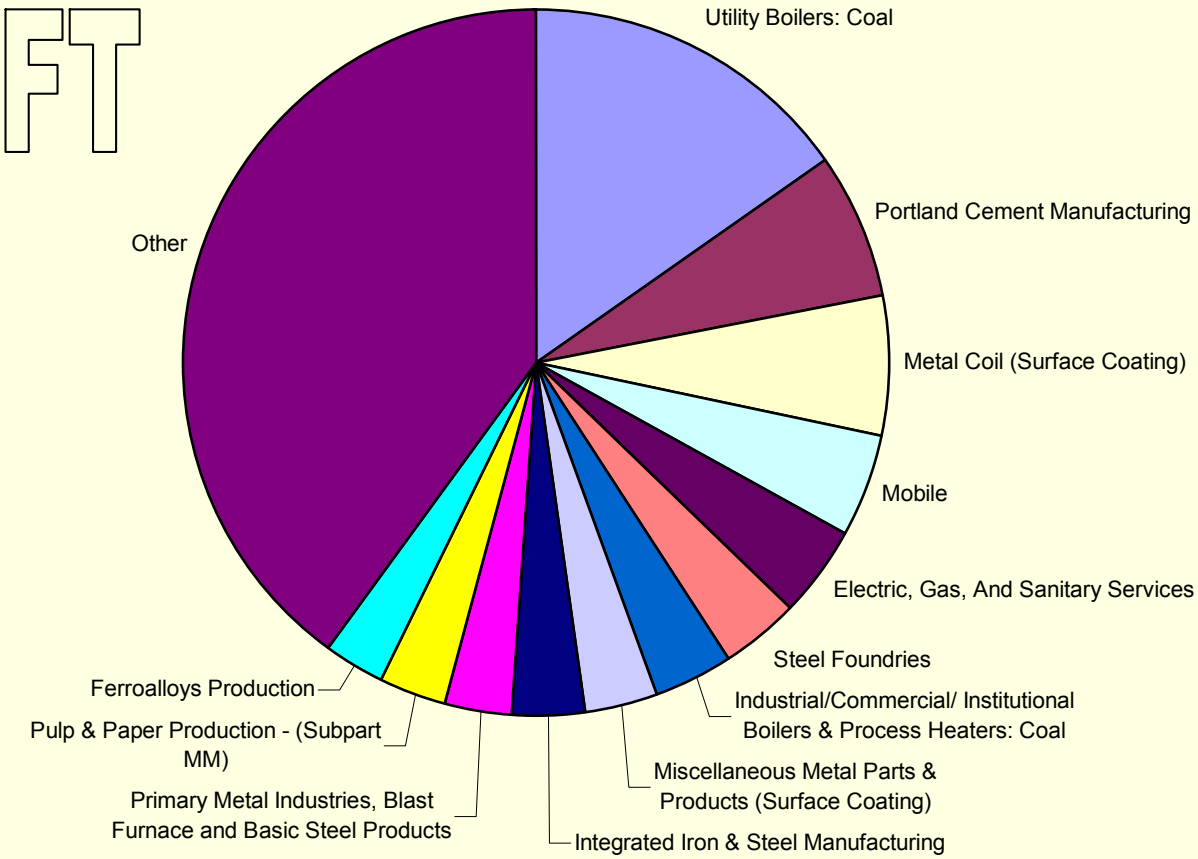
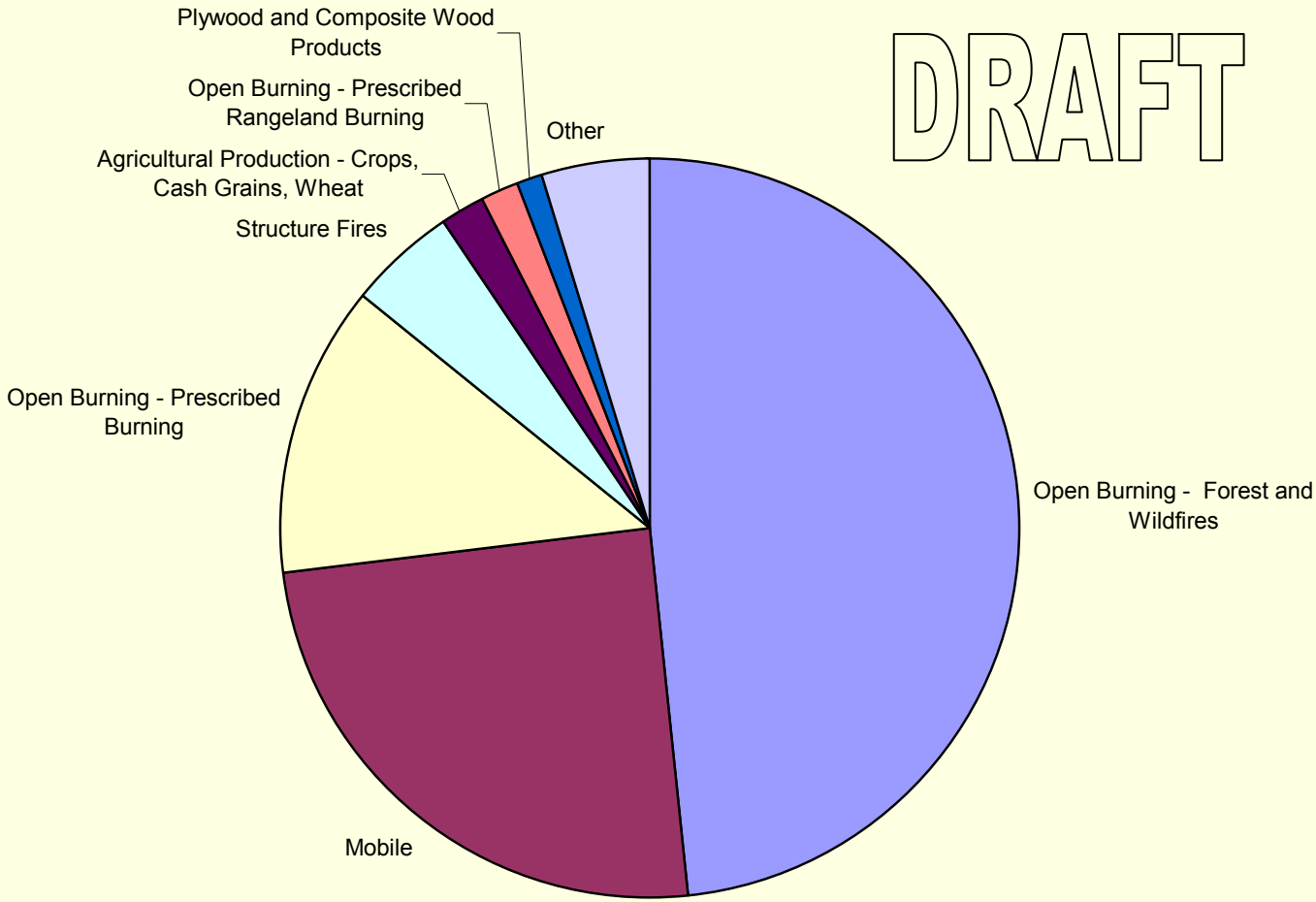


1999 NEI - Acrolein Emissions



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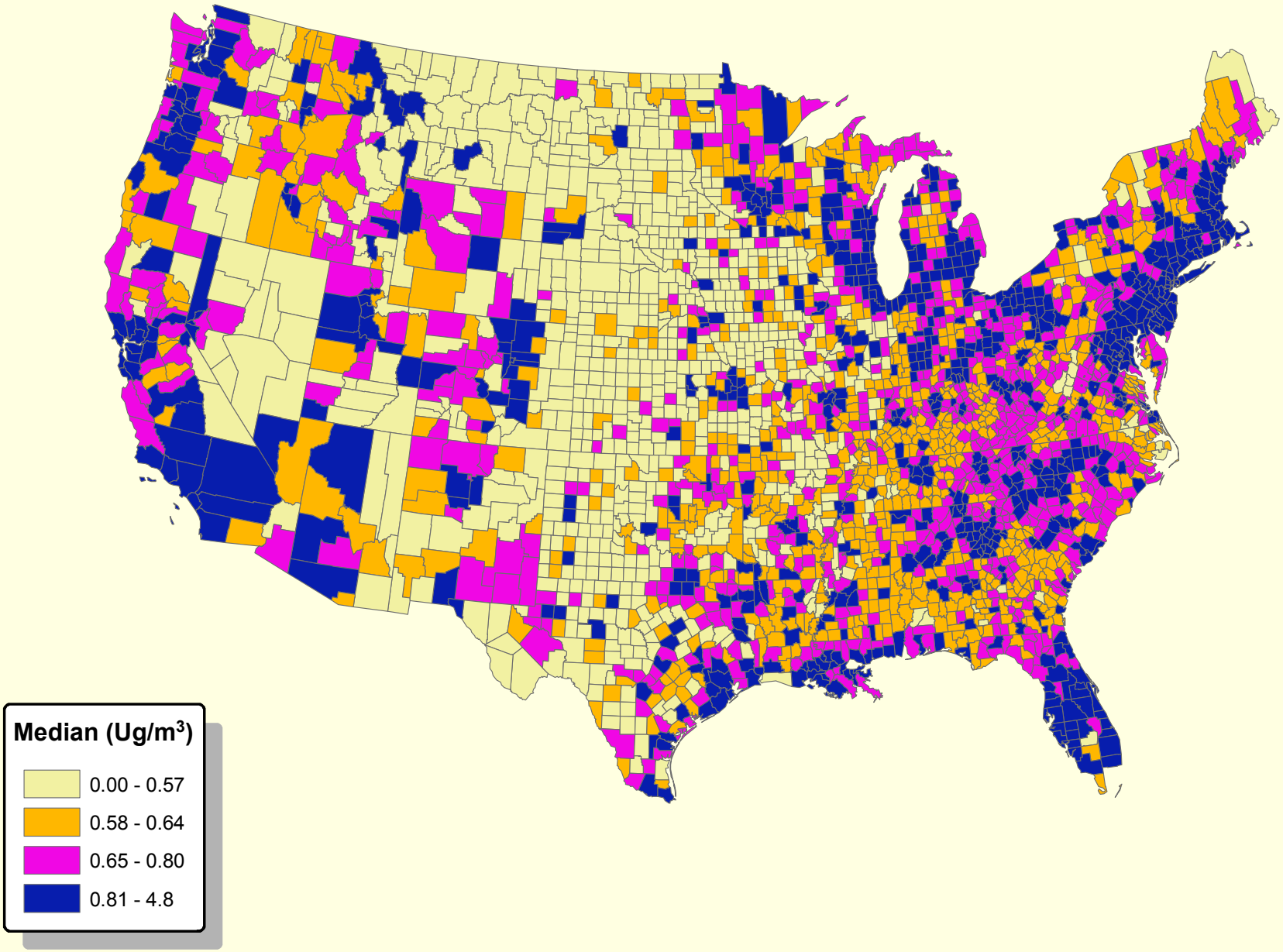
Primary Emissions Only

1996 NATA County Ambient Concentrations – Benzene

County Medians – Ug/m^3



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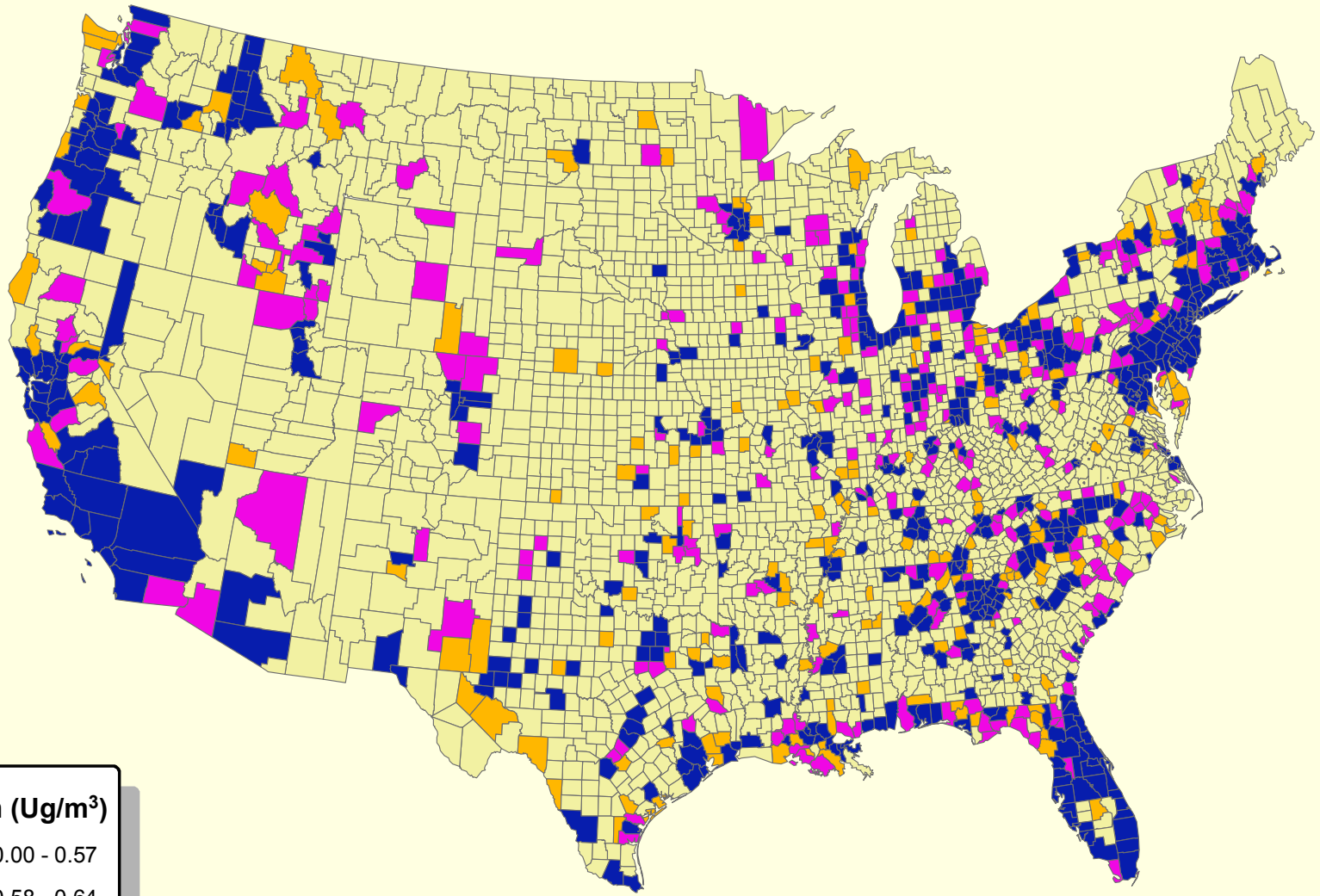

1999 NATA
Cancer Risk
Source Sector Contributions

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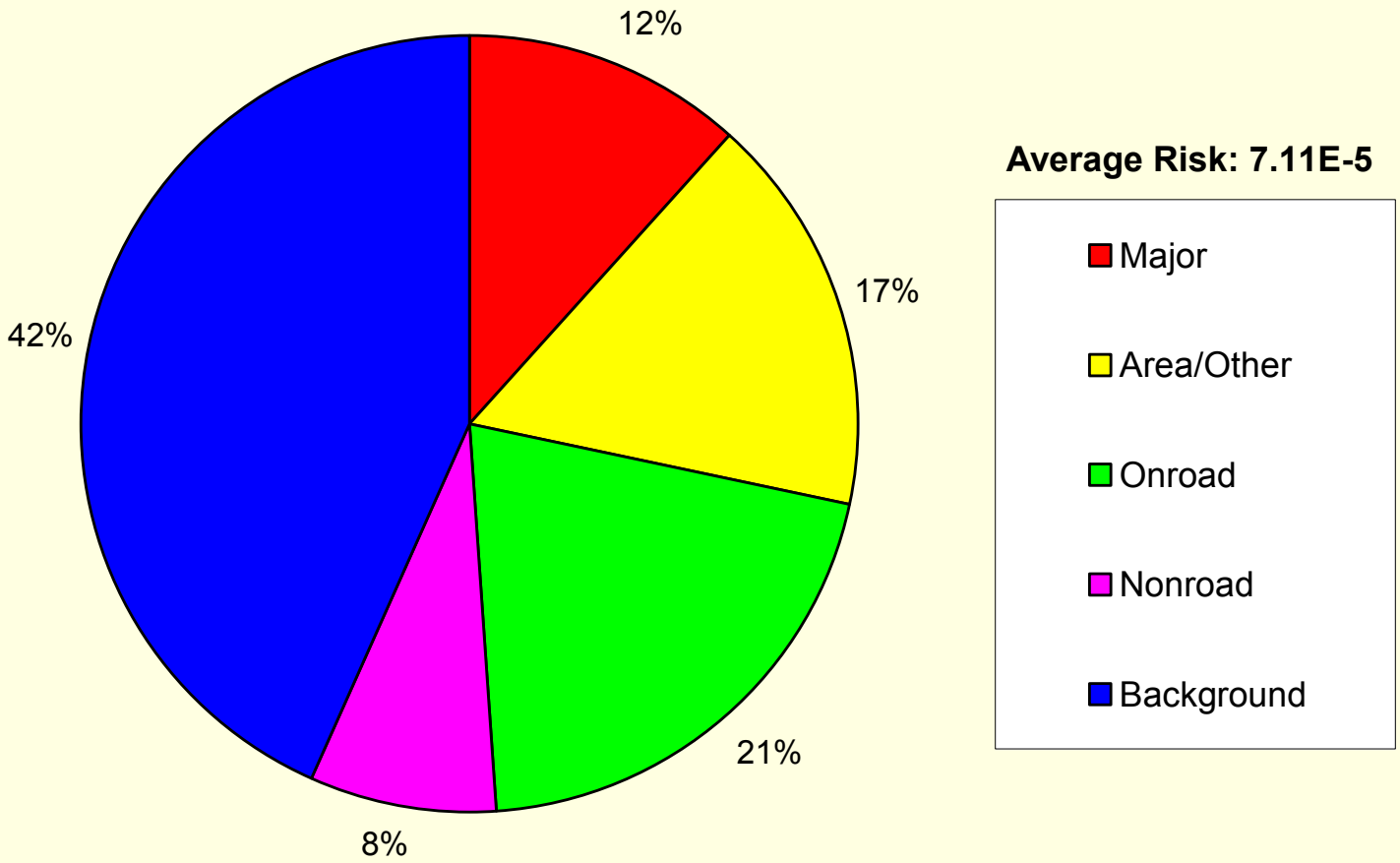
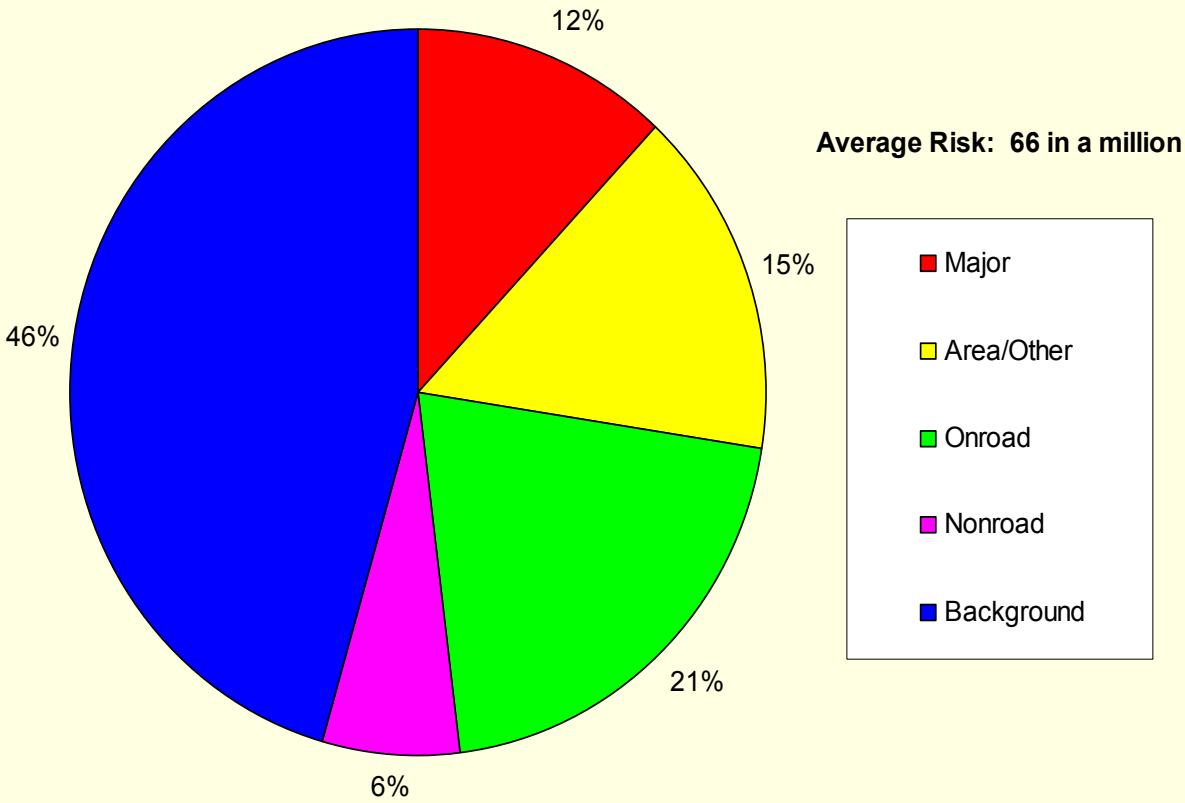
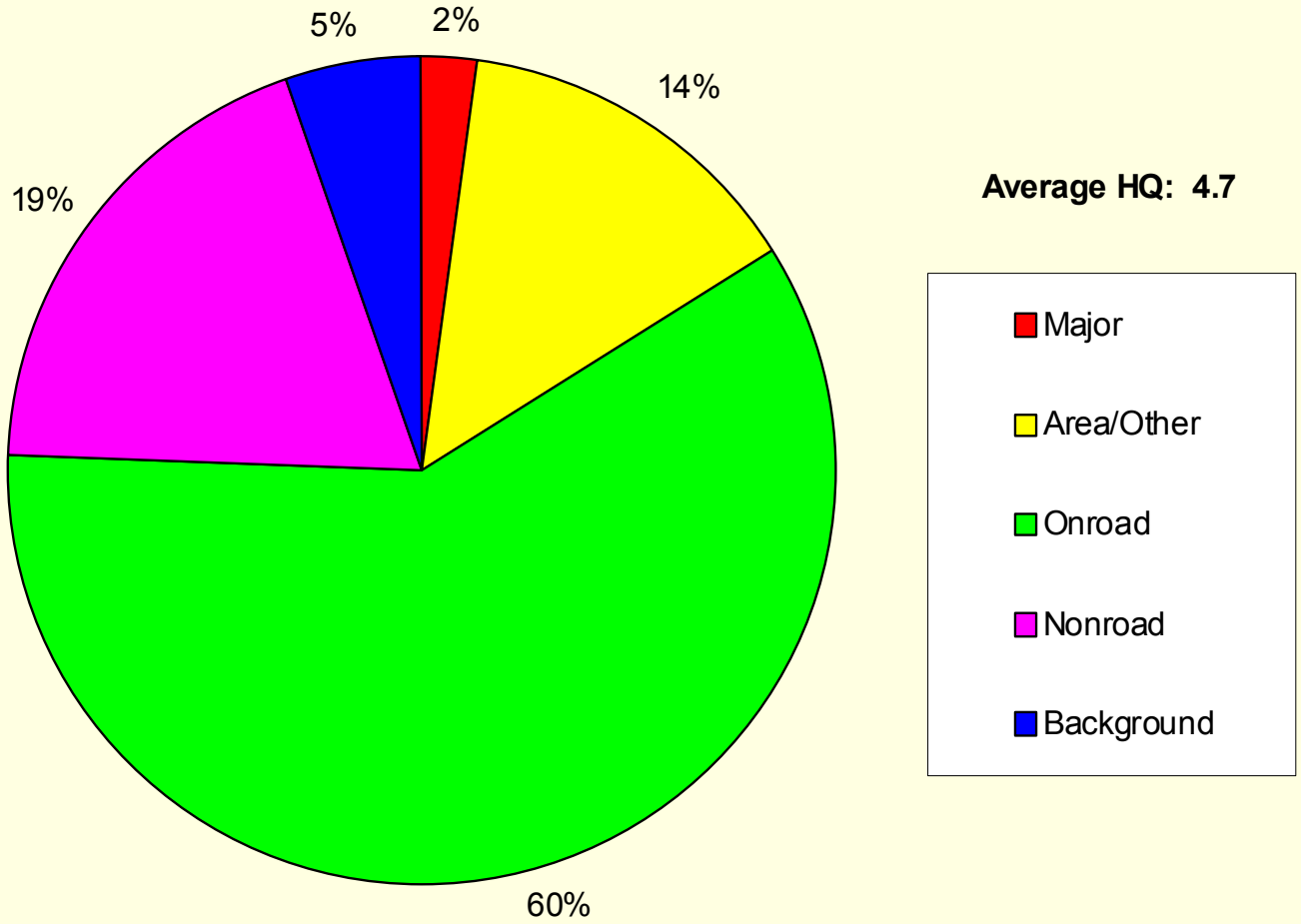


1999 NATA
Region 3 Cancer Risk
Source Sector Contributions



1999 NATA
Region 3 Noncancer (Respiratory) Risk
Source Sector Contributions



1999 NATA
Noncancer (Respiratory) Risk
Source Sector Contributions

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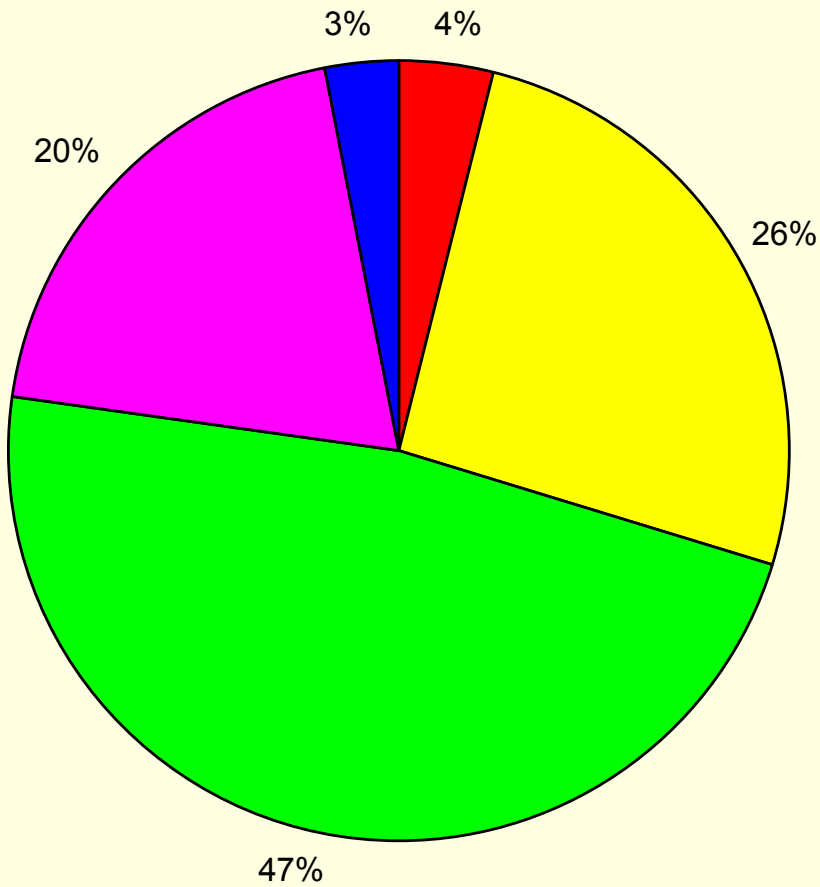

Average Risk: 6.56

- Major
- Area/Other
- Onroad
- Nonroad
- Background

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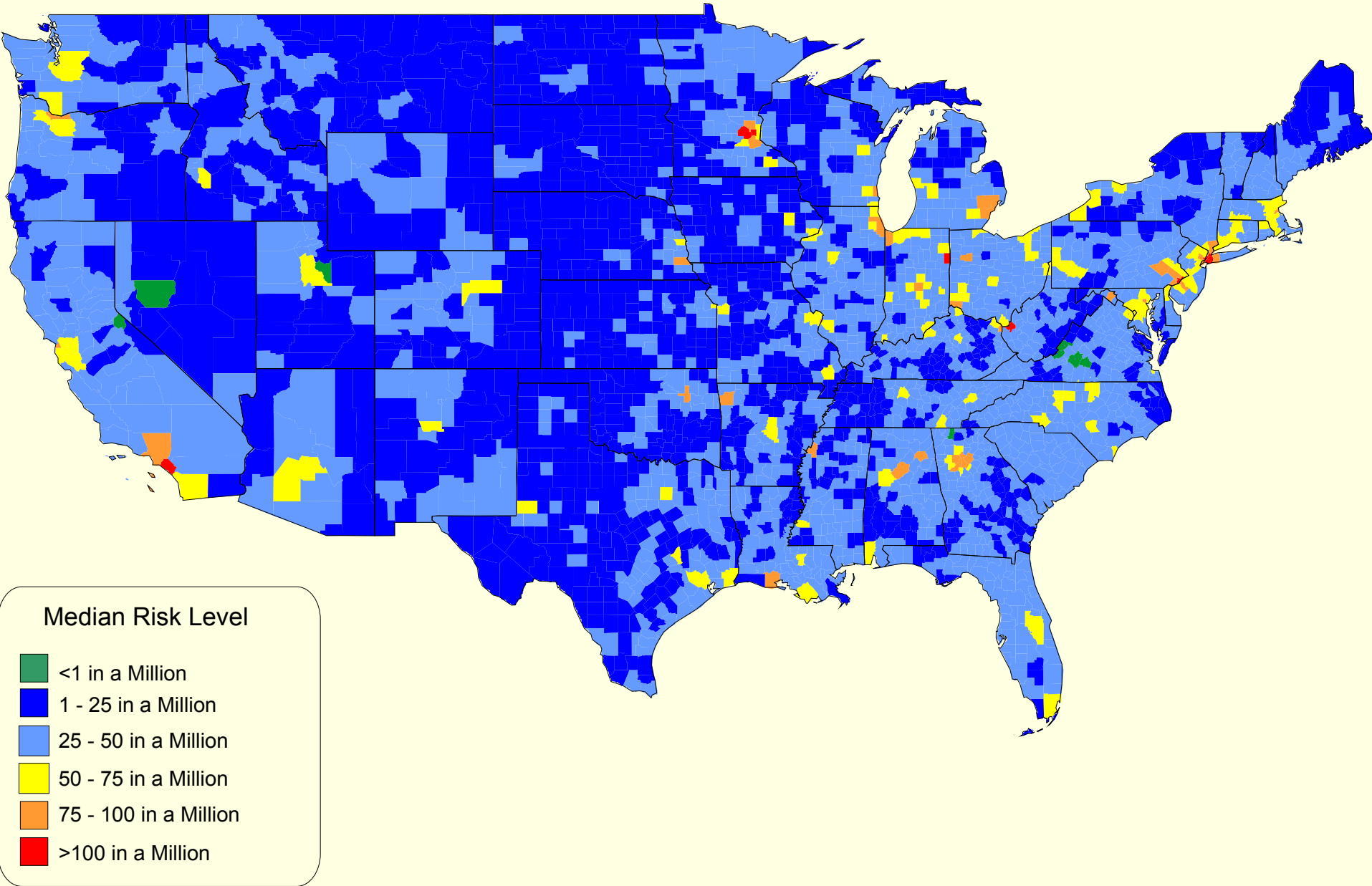

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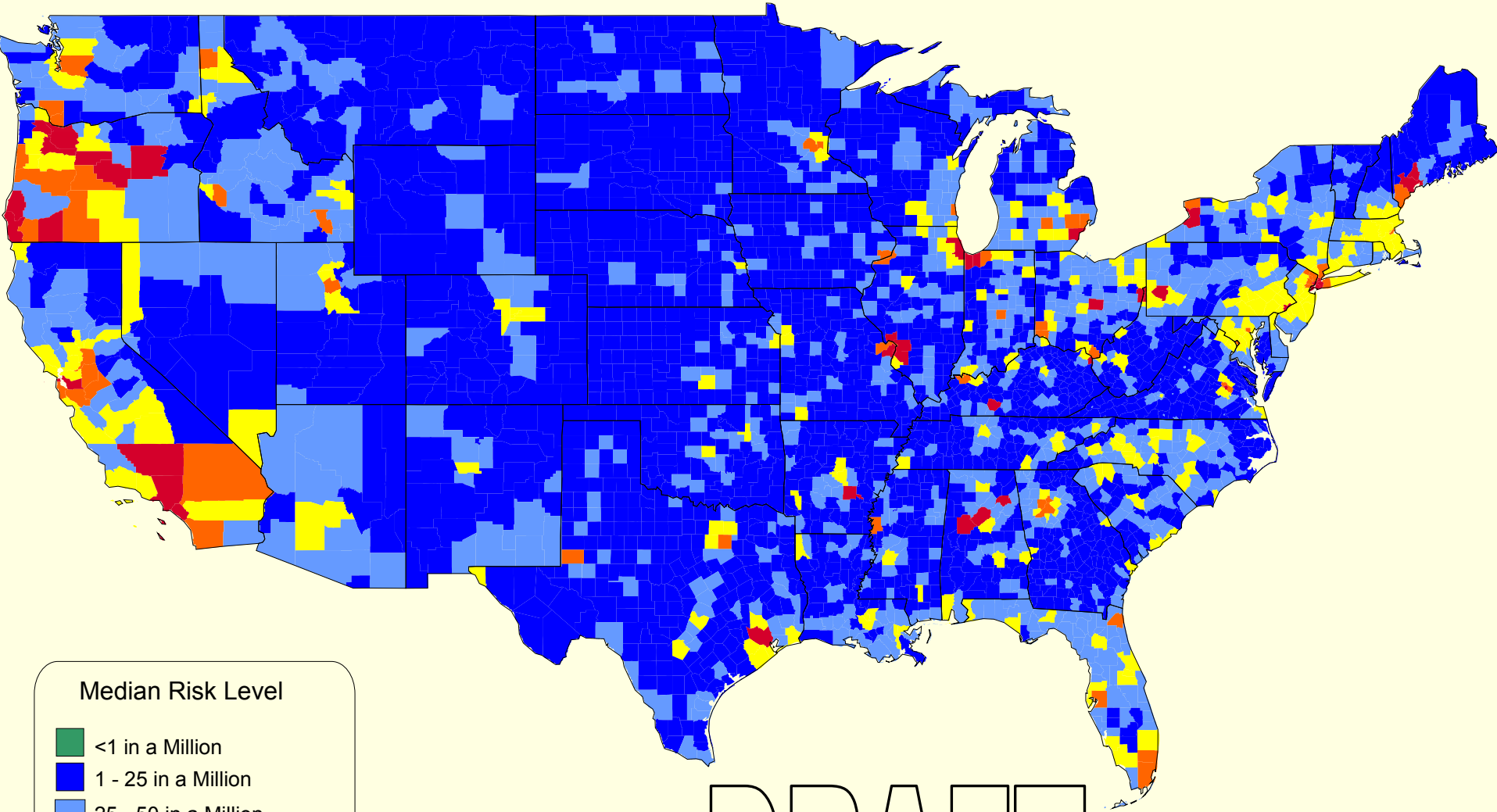

FINAL THOUGHTS

- 1999 NATA will be released this summer
- Large Air Toxic Exposure and Risk particularly on the West and East Coasts
- We need to work together to reduce our risks