Air Toxics Program Manager's Perspective on Ambient Monitoring

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AIR TOXIC PROGRAM ACTIVITIES

TOXICS RULES

- **MACT**
  - Litigation ongoing on promulgated MACT standards
  - Defense Land Systems & Miscellaneous Equipment (Military MACT) –proposal 4/2006

- **Combustion 129 Rules**
  - Other Solid Waste Incineration – proposal signed 11/30/04; promulgation due 11/2005
  - Large Municipal Waste Combustors (5-year review) – proposal 10/2005
  - Remands – Medical Waste Incinerators, Commercial Industrial Solid Waste Incinerators
  - Small Municipal Waste Combustors – technical amendments for clarification to December 2000 final rule

TOXICS RULES (continued)

- **Residual Risk**
  - Complete current standards with court-ordered promulgation deadlines
    - Coke Ovens –promulgated 3/31/05
    - Dry Cleaning – proposal 10/2005; promulgation 4/28/06
    - HON – proposal 12/2005; promulgation 12/2006
    - Halogenated Solvents – proposal 12/2005; promulgation 12/2006
  - Complete 4 proposals of no further controls by middle of 2006
    - Industrial Cooling Towers – proposal 10/2005, promulgation 3/2006
    - Magnetic Tape – proposal 10/2005; promulgation 3/2006
    - Ethylene Oxide Sterilizers – proposal 10/2005; promulgation 3/2006
    - Gasoline Distribution – proposed 8/4/2005; promulgation 3/2006

TOXICS RULES (continued)

- **Area Source Program**
  - 70 categories listed
  - 15 standards completed
  - As part of a consent decree, we committed to propose/promulgate 5 more by December 2007;
  - 50 area source standards are the subject of mediation
  - Flexible regulatory approaches
  - Voluntary and pollution prevention approaches to addressing the area source categories
  - Reviewing the technical information to support rulemaking and develop control guidance for the area sources

Standard	Proposal	Promulgate
Other Solid Waste Incineration	Signed 11/30/04	11/2005
Oil and Natural Gas Production	Signed 6/30/04	12/2006
Hospital Sterilizers	10/2006	12/2007
Gasoline Distribution Stage 1	10/2006	12/2007
Stationary Internal Combustion Engines	10/2006	12/2007

TOXICS RULES (continued)

- **Community Based Program**
  - Technical guidance outreach support
    - "Healthy Air: A Community and Business Leaders Guide"
    - Risk reduction matrix
    - Community projects database
  - National Community Involvement Conference held in Buffalo, NY in July 2005
  - Support for CARE
  - Multipollutant planning and management

PROGRAM CHALLENGES

FOLLOW UP TO NAS

- **NAS Recommended:**
  - Strengthening scientific and technical capacity
  - Expanding national and multistate control strategies
  - Transforming the SIP process
  - *Developing an integrated program for criteria and hazardous air pollutants*
  - Enhancing protection of ecosystems and public welfare

CAAAC/AQM RECOMMENDATIONS

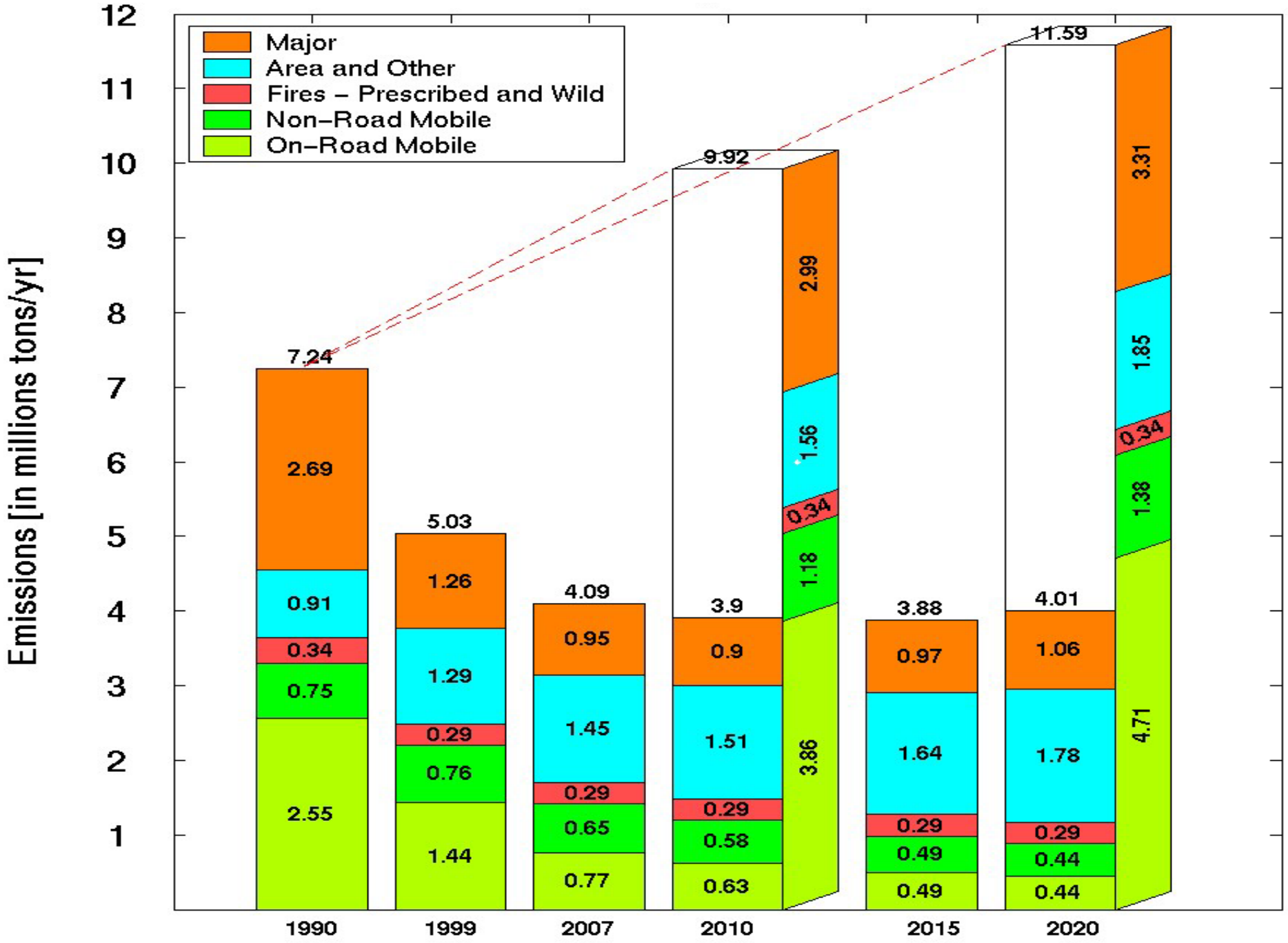
- Improvements in emission inventories, measurements and modeling
- Identification of sectors for further study and possible national, regional and local strategies
- Options for streamlining the SIP process
- Consideration of multipollutant impacts in SIPs and in standards development
- Program review to improve ecosystem protection

CHALLENGES

- Better “marketing” of air toxics issues
- Comprehensive air pollution strategies
- Accomplishing “more with less”
- Changing science
- Emerging toxics issues
  - Integration with priority pollutant program
  - Developing an integrated metals strategy
  - Diesel PM
  - New area and residual risk rules
  - Development of Ecological program

WHAT HAS THE AIR TOXIC PROGRAM ACCOMPLISHED?

AIR TOXICS EMISSIONS REDUCTIONS



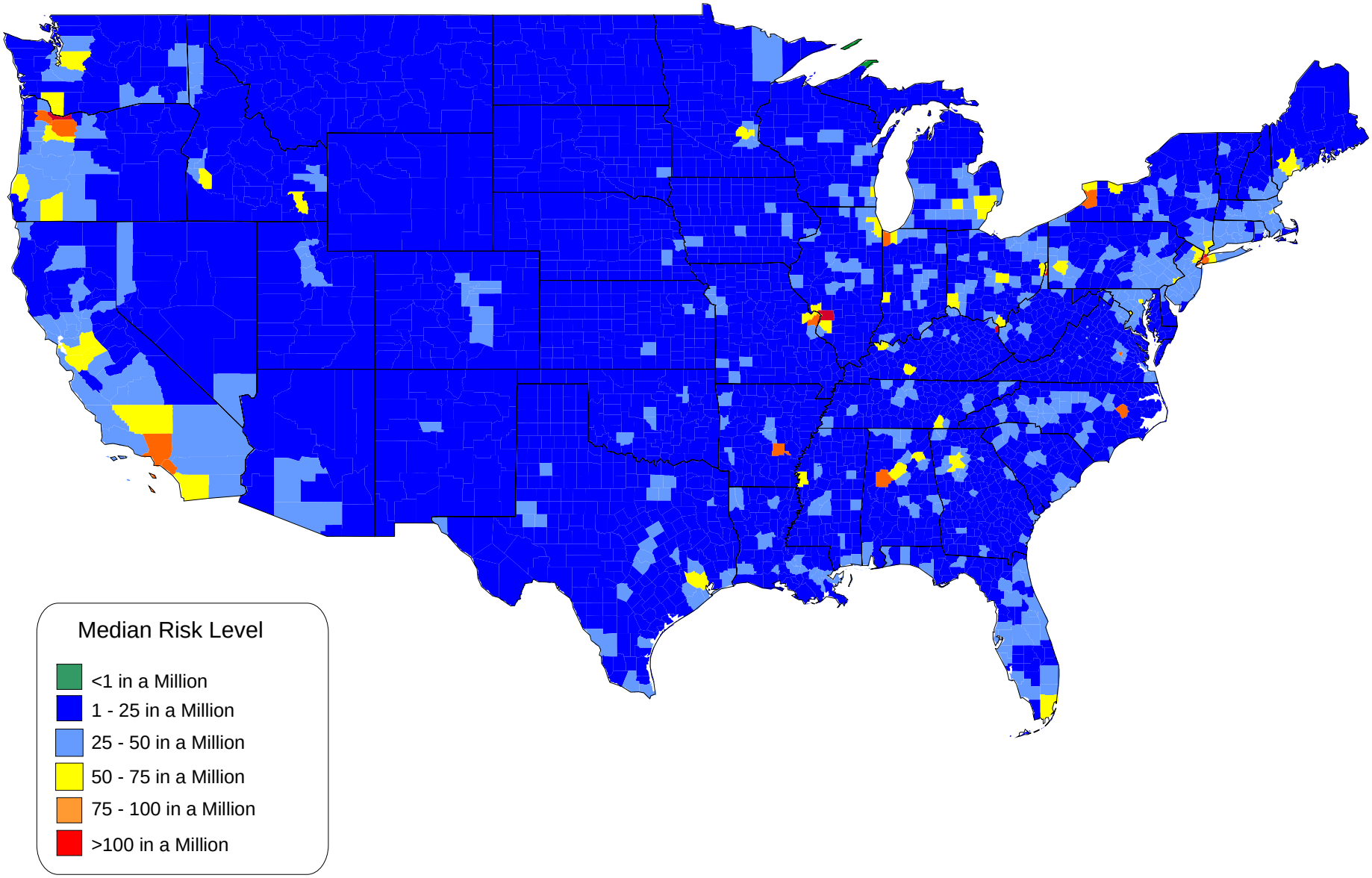
PREDCITED RISK CHANGES - BASED ON 1999 NATA

- The **average cancer risk** for 1999 is **48 in a million**
  - Comparable to 1996 NATA of 55 in a million
  - **Benzene** is most significant carcinogen
  - Majority of country predicted to have risk between 1 and 25 in a million
  - Most urban locations greater than 25 in a million
  - Transportation corridors and some locations greater than 50 in a million risk
  - Just a few counties greater than 100 in a million risk

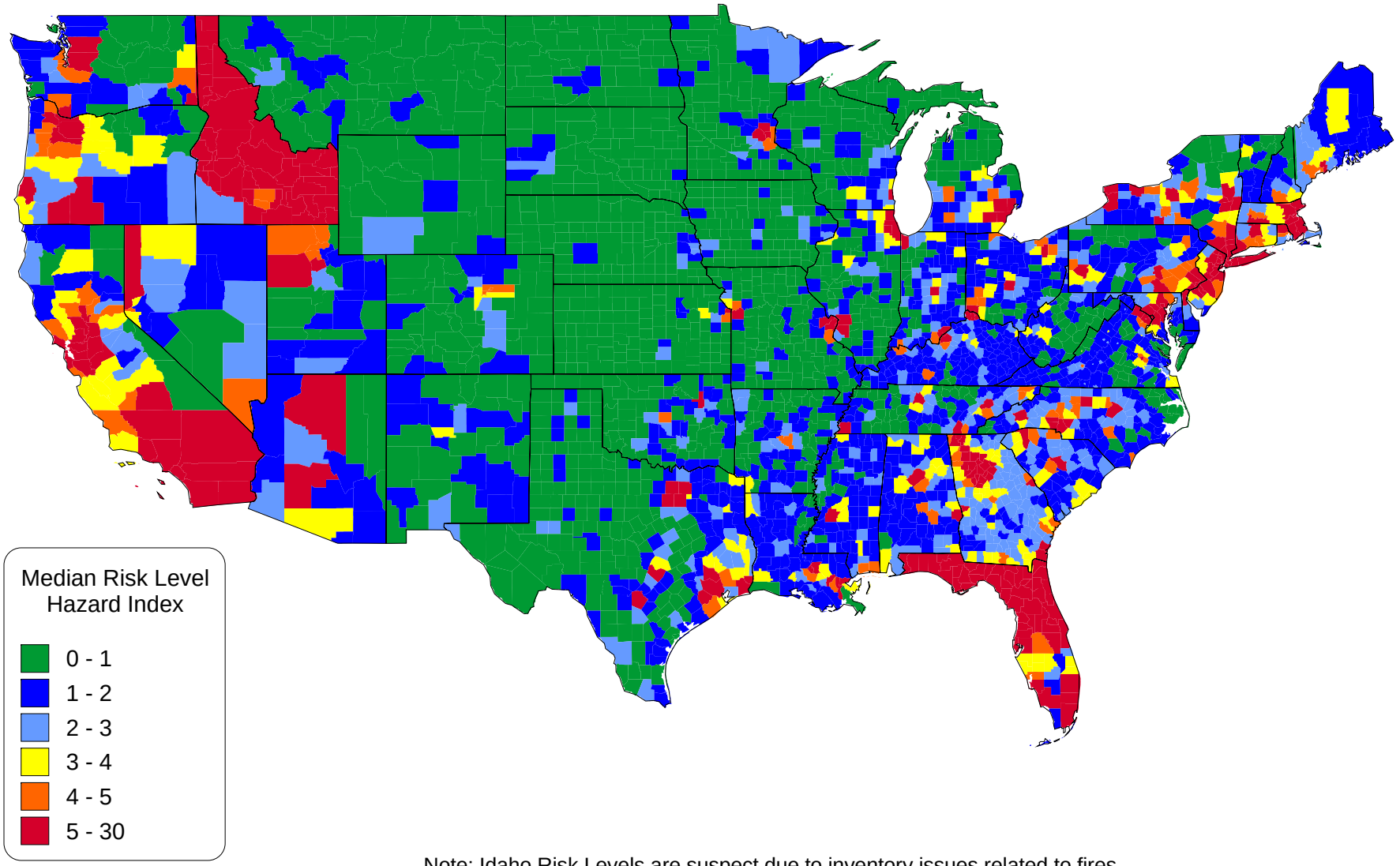
- The **average noncancer risk** for 1999 is **6.4** (hazard index for respiratory)
  - Comparable to 1996 NATA of 5.2
  - **Acrolein** a majority of this risk
  - Over 40% of counties hazard index greater than 1
  - Just a few counties hazard index greater than greater than 10
  - High values in Florida and Idaho from forest fires (they are using different emission factors

- **Highest risk counties coincide with locations where criteria pollutant issues are significant**

1999 NATA – National-Scale Assessment
Predicted County Level Carcinogenic Risk



1999 NATA - National Scale Assessment
Predicted County Level Noncancer (Respiratory) Risk



Note: Idaho Risk Levels are suspect due to inventory issues related to fires

1999 NATIONAL-SCALE ASSESSMENT RISK CHARACTERIZATION - SIGNIFICANT POLLUTANTS

- Cancer
  - **National drivers** [1]
    - Benzene
  - **Regional drivers** [2]
    - Arsenic compounds
    - Benzidine
    - 1,3-Butadiene
    - Cadmium compounds
    - Carbon Tetrachloride
    - Chromium 6
    - Coke oven
    - Ethylene oxide
    - Hydrazine
    - Naphthalene
    - Perchloroethylene
    - POM

- NonCancer
  - **National drivers**[3]
    - Acrolein
  - **Regional drivers**[4]
    - Antimony
    - Arsenic Compounds
    - 1,3-Butadiene
    - Cadmium compounds
    - Chlorine
    - Chromium 6
    - Diesel PM
    - Formaldehyde
    - Hexamethylene 1-6-diisocyanate
    - Hydrazine
    - Hydrochloric acid
    - Maleic anhydride
    - Manganese compounds
    - Nickel compounds
    - 2,4-Toluene Diisocyanate
    - Triethylamine

[1] At least 25 million people exposed to risk > 10 in 1 million

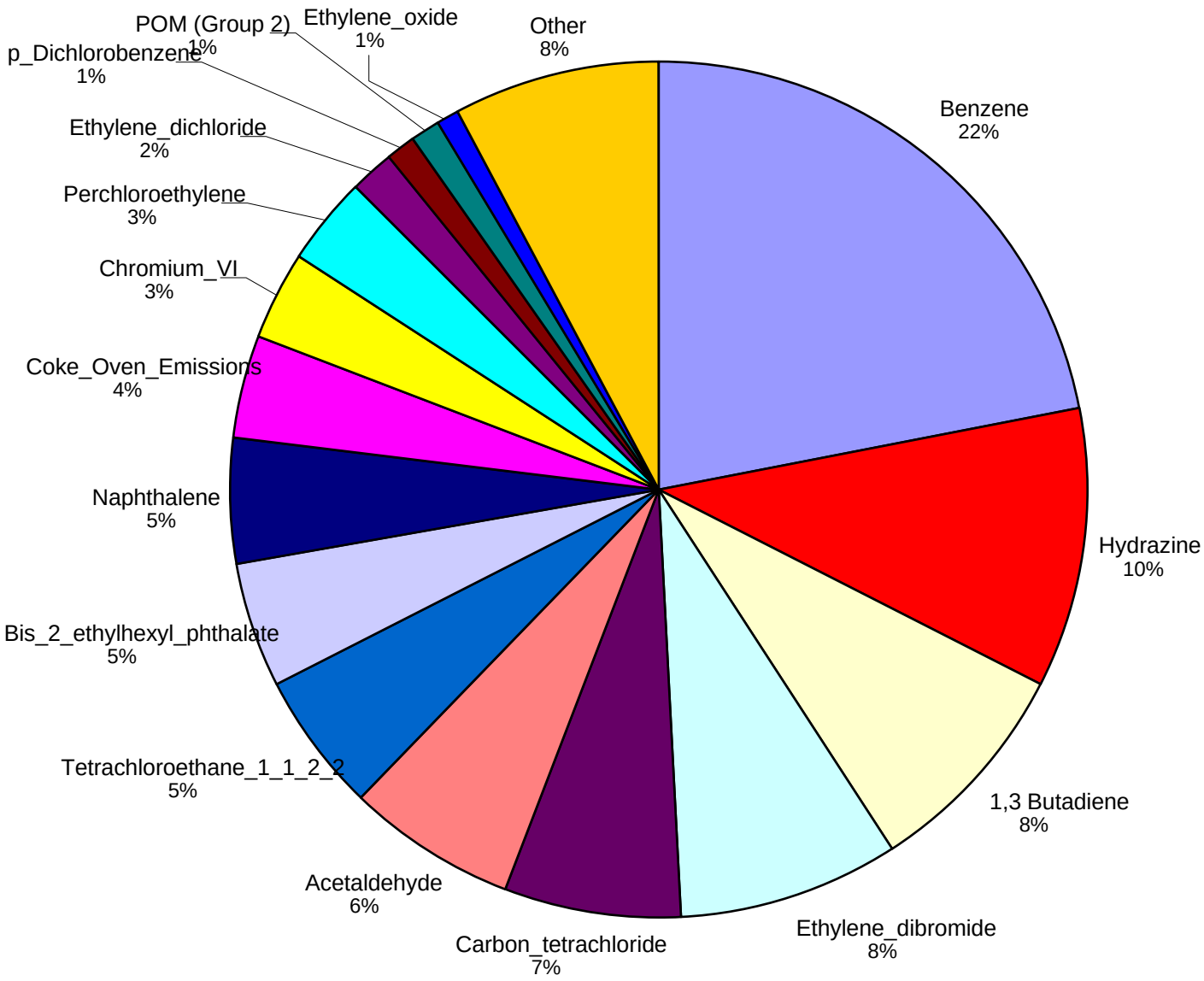
[2] At least 1 million people exposed to risk > 10 in 1 million OR At least 10,000 people exposed to risk > 100 in 1 million

[3] At least 25 million people exposed to a hazard quotient (HQ) > 1.0

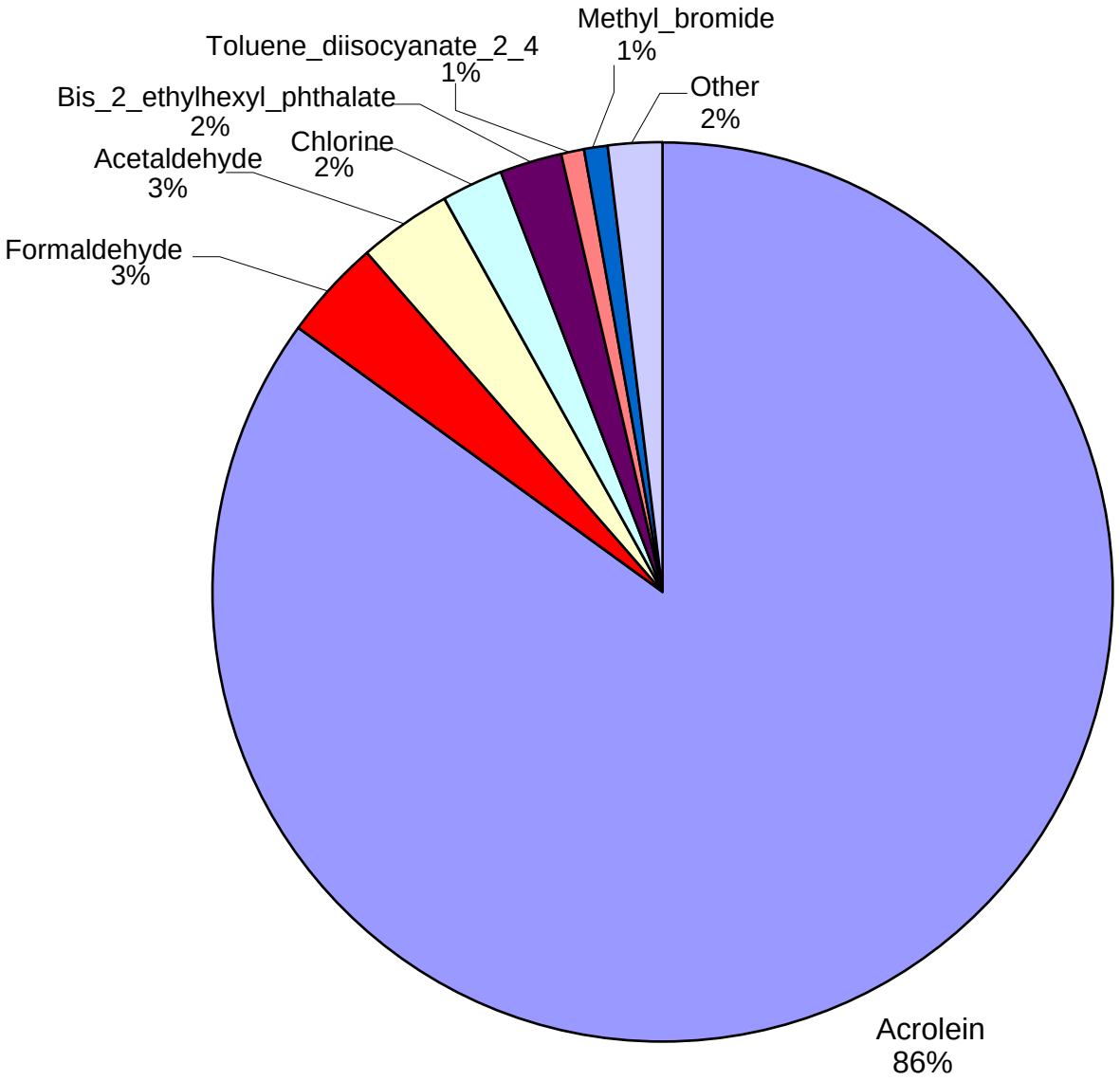
[4] At least 10,000 people exposed to HQ >1

Blue indicates new drivers since 1996

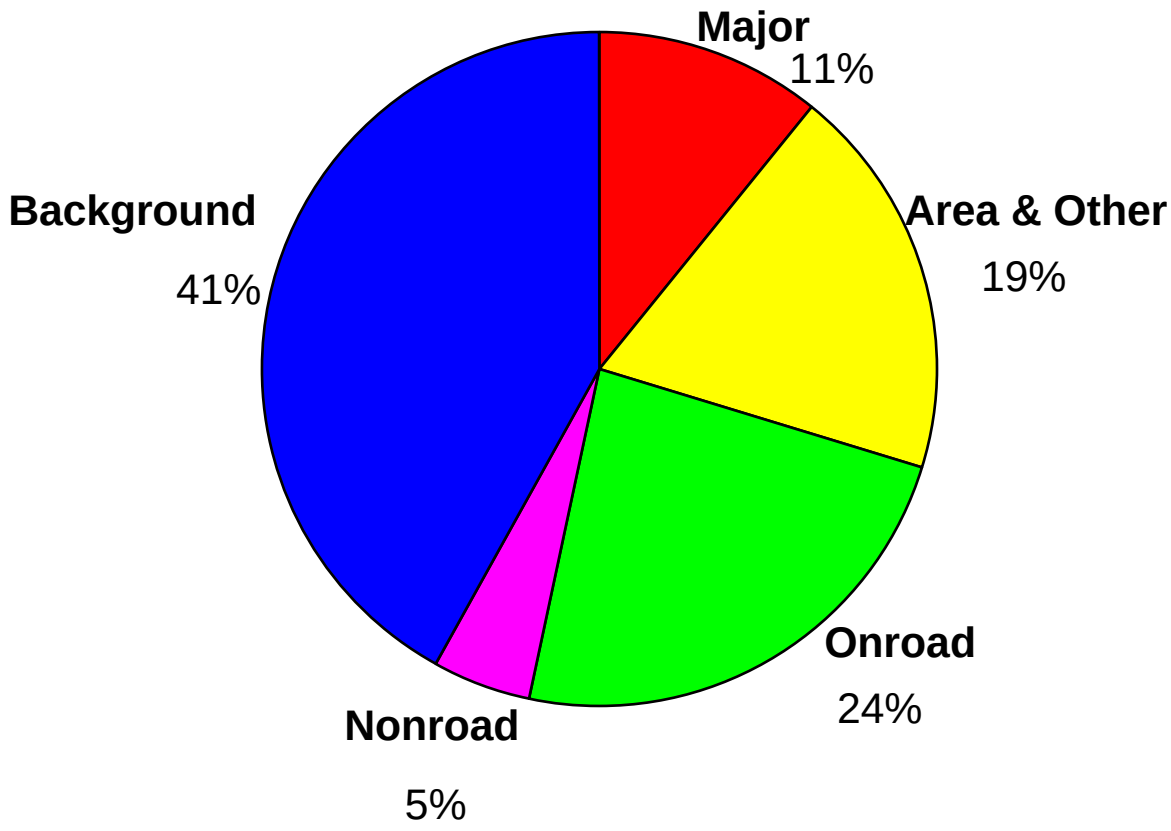
1999 NATA - Pollutant Contribution to Average Cancer Risk (48 in a million)



1999 NATA - Pollutant Contribution to Average Noncancer Risk (HI=6.4)

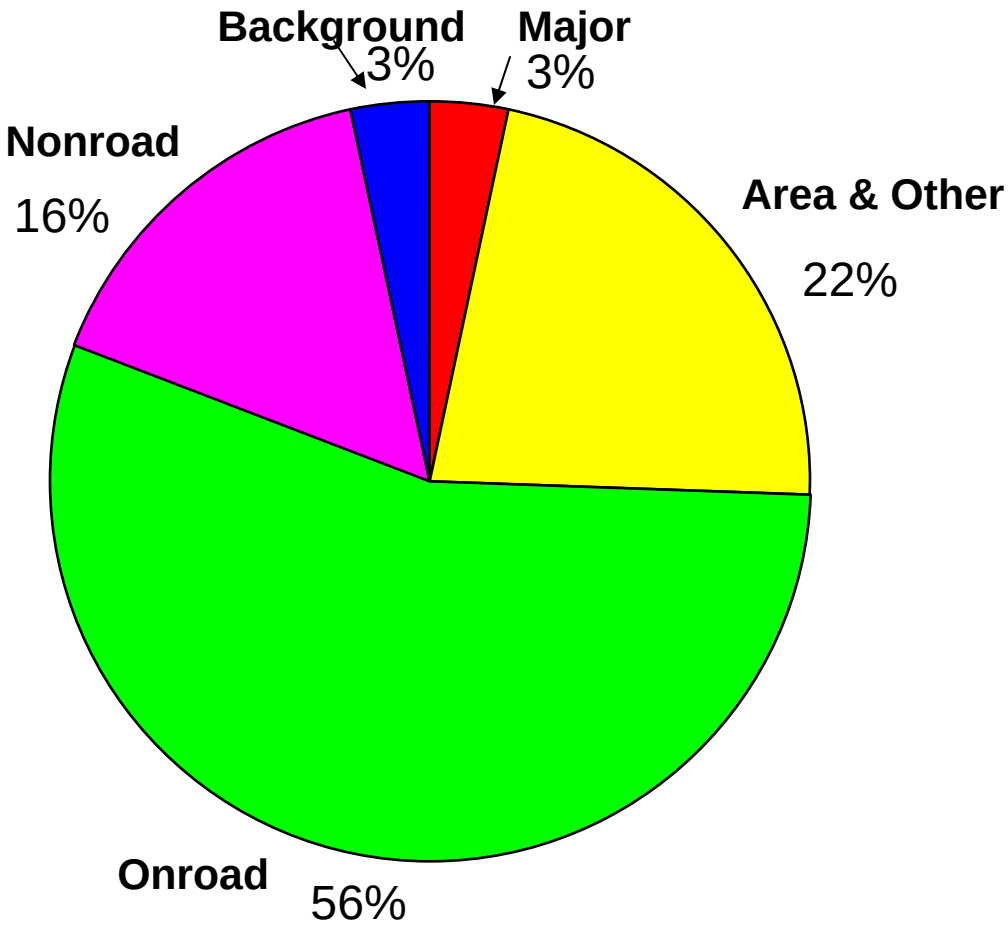


1999 NATA Cancer Risk
Source Sector Contributions



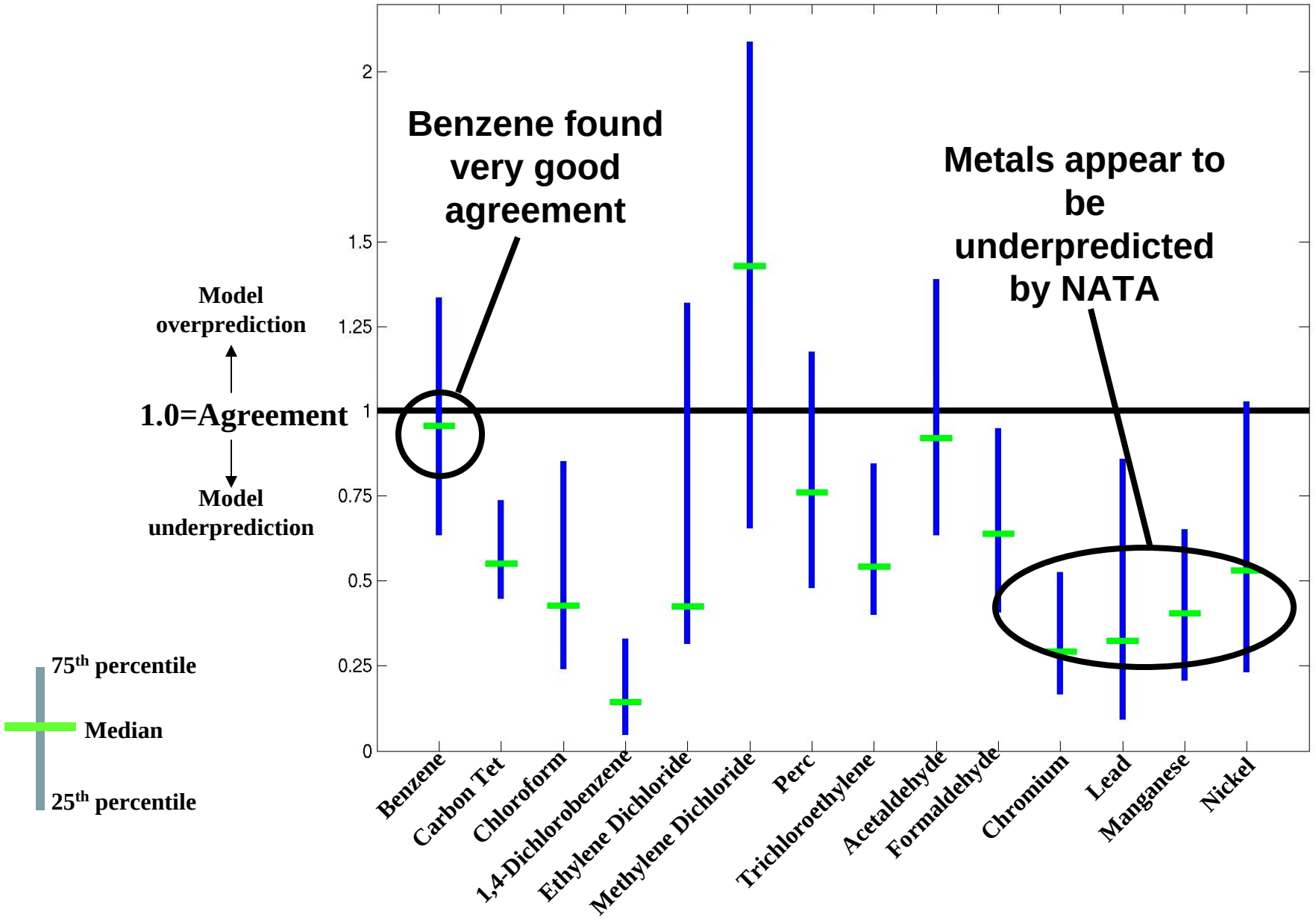
Average Risk: 48 in a Million

1999 NATA Noncancer Respiratory Risk Source Sector Contributions



Average Hazard Index = 6.4

NATA Model to Monitor Comparisons



MONITORING AND THE AIR TOXIC PROGRAM

MONITORING

- National Air Toxics Trends Sites (NATTS)
  - Accountability
    - Trends
    - GPRA
    - Air Toxic PARTs
  - Evaluate emissions reduction programs (MACT, RR, Area, MSAT)
  - Ambient background levels for national scale analyses
  - Ground truth models

MONITORING (continued)

- Local Scale Monitoring Grants
  - Define source signatures
    - Ambient levels surrounding key source categories
    - Used to develop emission factors
    - Support HAP listing/delisting efforts
  - Identify inventory gaps
  - Evaluate source category emissions reduction programs (MACT, RR, Voluntary Programs)
  - Ambient background levels
  - Ground truth assessments
  - Support exposure and risk assessments

MONITORING (continued)

- Further method development for key HAPs
- Detection limits at or below health benchmark values
- Easy and timely data access
- Continuous data measurement
- Support for exposure studies