

PART II. INTRODUCTION TO EPA'S NATA DATABASE FOR ALBUQUERQUE/BC

Presentation to the City of Albuquerque Air Board

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OVERVIEW- PART I

Introduction to the EPA's National-Scale Air Toxics Assessment ("NATA") Database

What Is NATA?

What Kind of Data Are Presented?

Where Do the Data Come From?

How Can NATA Be Used?

How Should NATA Not Be Used?

Can We Use It to Examine Cumulative Impacts?

What Is NATA?

A software application that displays emissions, monitoring, and risk data on a map. Map layers include:

- 187 “air toxics” emissions sources
- Air toxics monitoring data for 2005 to 2013
- Modeled annual ambient concentrations
- Estimated cancer risks and respiratory hazard indices (HI)

Why Does EPA Use Data From 2011?

*"We used 2011 data because emission inventories from that year were the **most complete and up-to-date** available.*

Working with industries and states, we update our air toxics emission inventories every three years and are now gathering and compiling 2014 data.

*The risk estimates assume lifelong exposure to 2011 levels because calculating projected exposures based on projections to more recent years would be substantially more complex and **uncertain.**"*

OVERVIEW – PART II

- Review cumulative cancer risks for A/BC
- Review hazard indices for A/BC
- Handout of slides and terms



2011 NATA Results - Air Toxic Trends

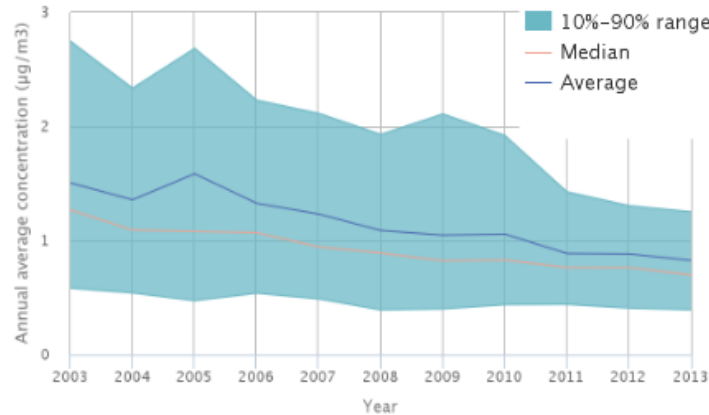
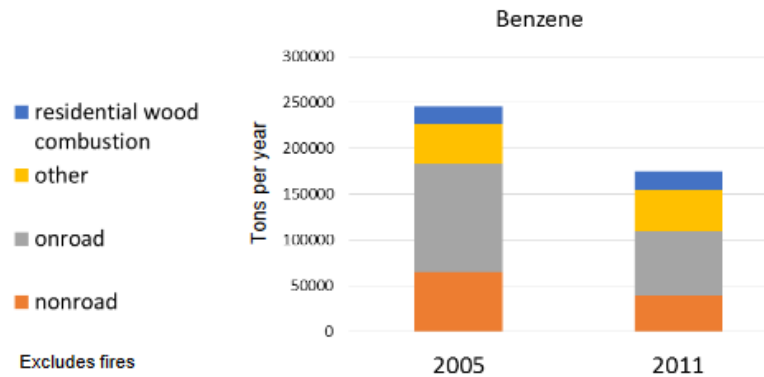
- Although NATA is not used to look at trends, emissions and monitoring data indicate a marked reduction in air toxics over past decade.
- Emissions reductions due in large part to programs such as the federal mobile source programs.

2005 and 2011: National Trends in Emissions and Monitored Concentrations -- Benzene

USEPA
AAPCA
Sept
2016

Benzene Trend 2003-2013, EPA's Report on the Environment (ROE)

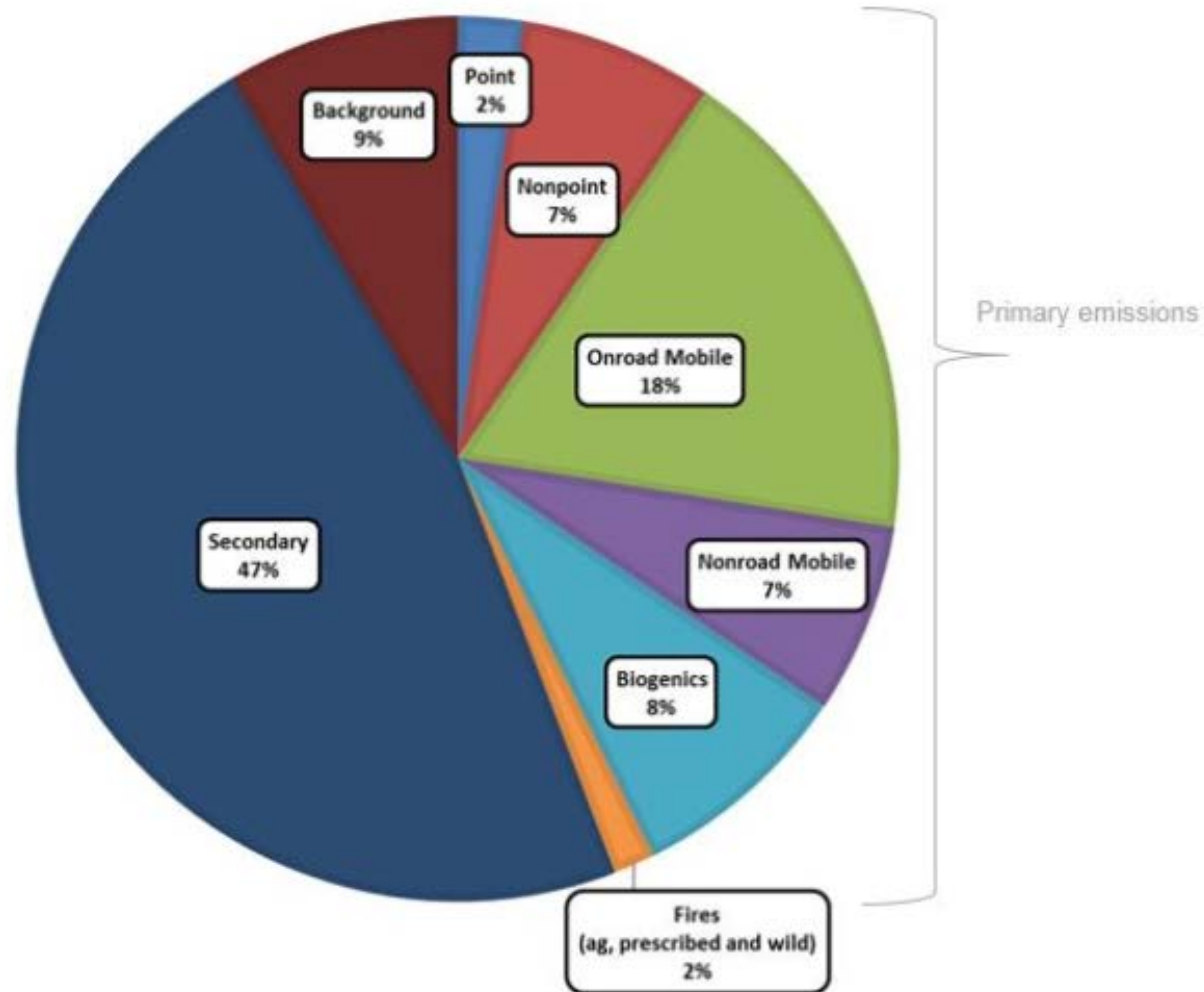
Exhibit 3. Ambient benzene concentrations in the U.S., 2003-2013



Onroad and nonroad emissions continue to decrease. Monitoring data reflect this downward trend.



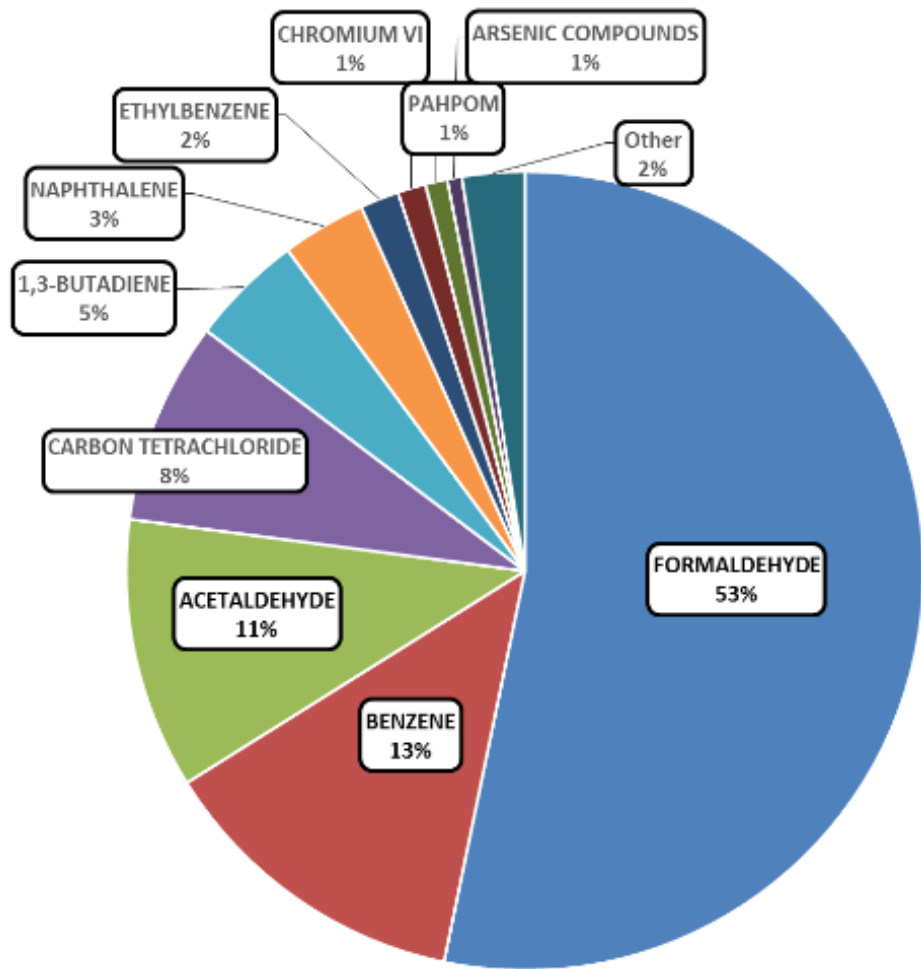
2011 NATA Cancer Risks Entire US – Source Category Contributions



**SECONDARY
FORMATION:
GREATEST
SOURCE OF
CANCER RISK**



2011 NATA Cancer Risks Entire US - Pollutant Contributions

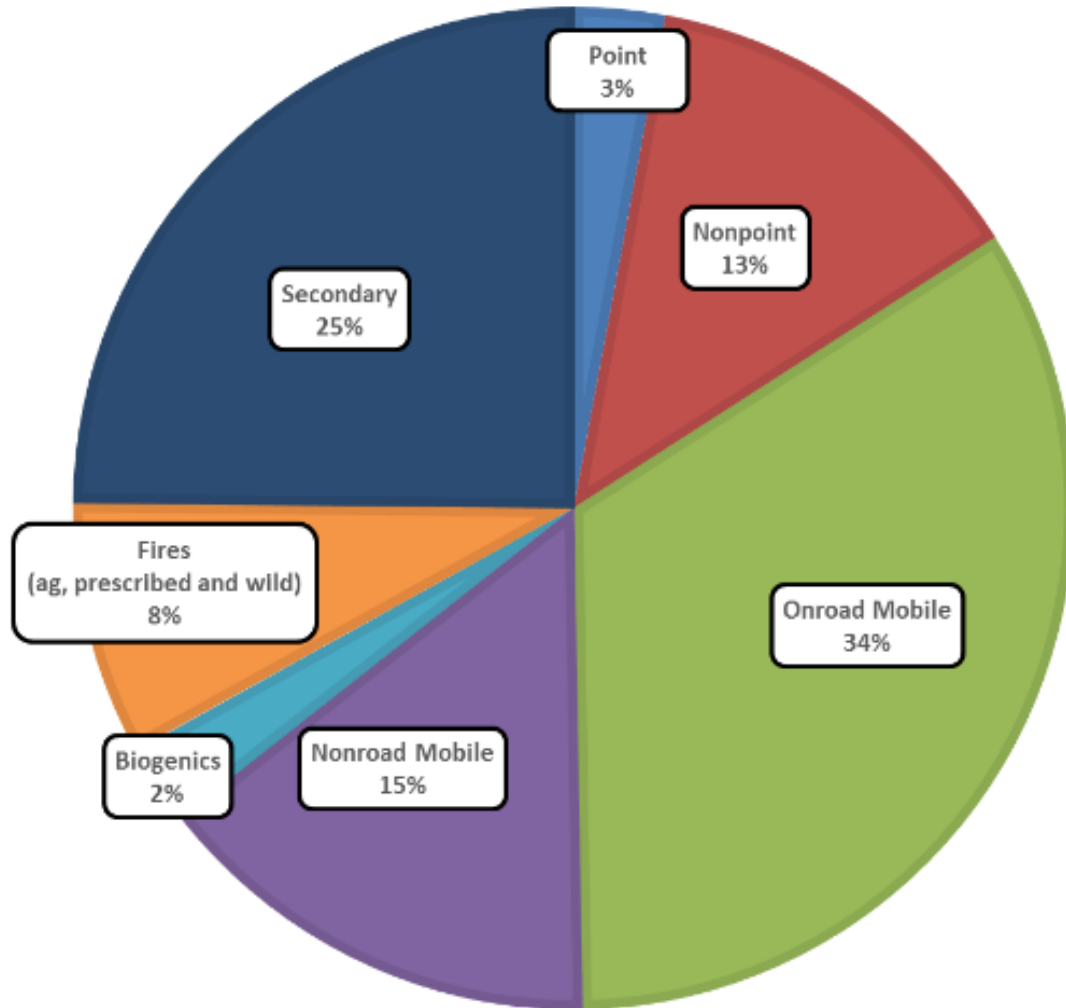


**FORMALDEHYDE:
GREATEST
CONTRIBUTOR TO
CANCER RISK**



2011 NATA Respiratory Risks Entire US

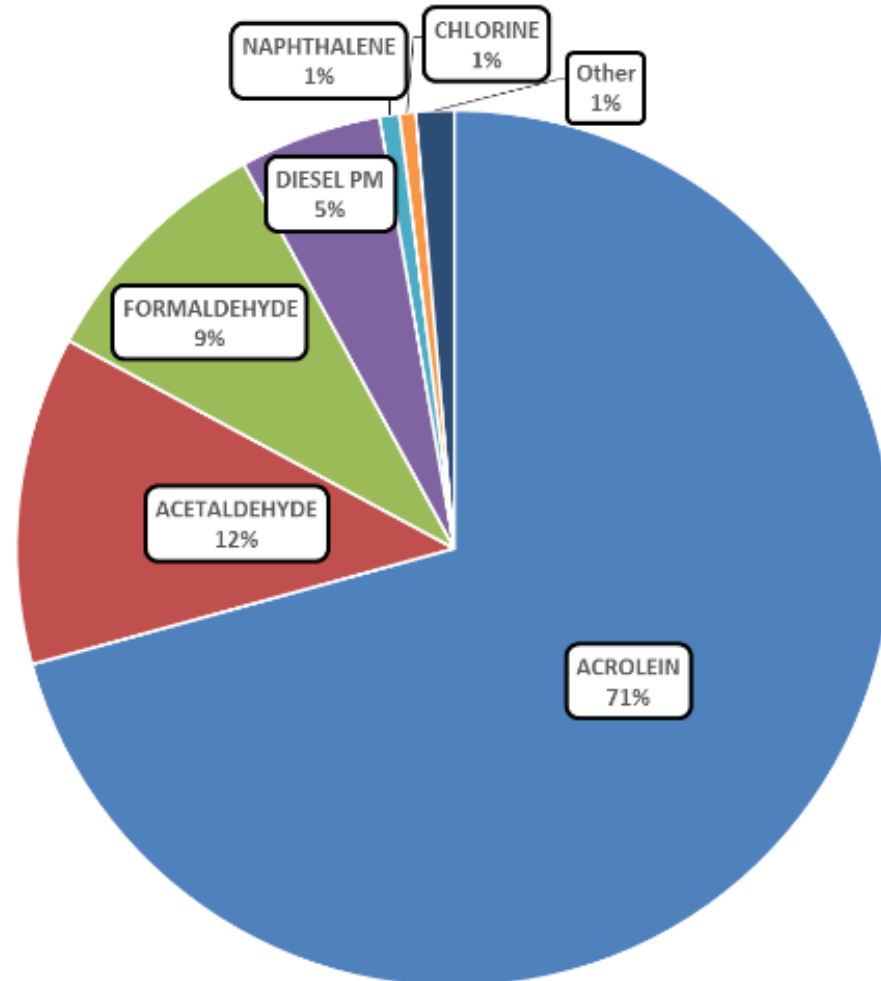
Source Sector Contributions



**CARS:
GREATEST
SOURCE OF
NON-CANCER
RISK**



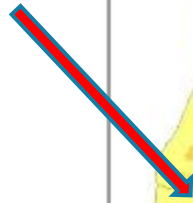
2011 NATA Respiratory Risk Entire US - Pollutant Contributions



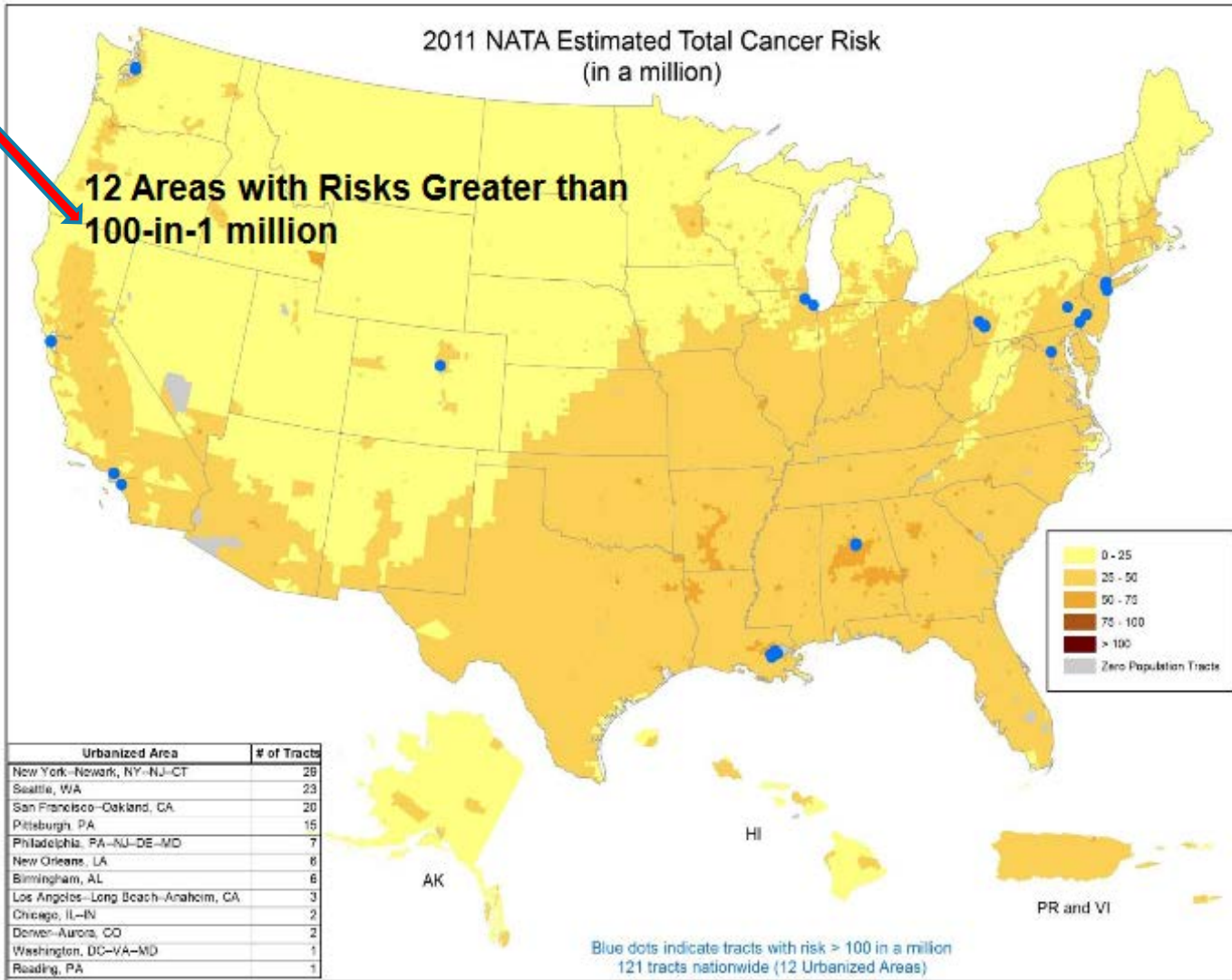
**ACROLEIN:
GREATEST
CONTRIBUTOR TO
NON-CANCER
RISK**



2011 NATA Estimated Total Cancer Risk
(in a million)



**12 Areas with Risks Greater than
100-in-1 million**



US CUMULATIVE CANCER RISK

What Does “100-in-a-Million” Mean?

- We each have about a 40% chance of developing cancer in our lifetimes.
- An added 100-in-a-million risk from air pollution? Increases that risk to ~ 40.0001% chance of developing cancer.

NATA Conclusions

The average, national cancer risk from air toxics is 40 in 1 million.

~1 in every 25,000 people have an increased likelihood of developing cancer as a result of breathing air toxics from outdoor sources if they were exposed to 2011 emission levels over the course of their 70-year lifetime.

Arizona to Alabama

Legend

2011 Risks and Annual Ambient Concentrations

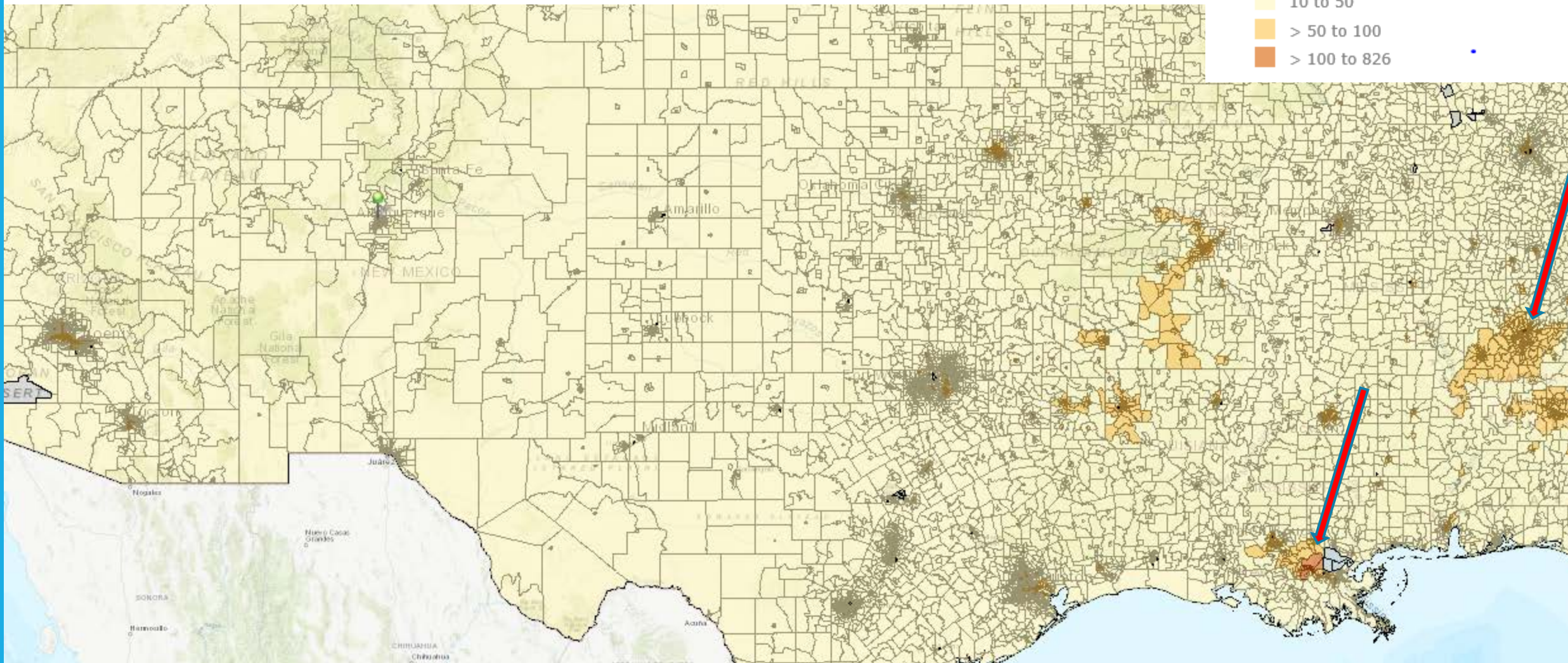
Cancer Risk and Respiratory Hazard Index

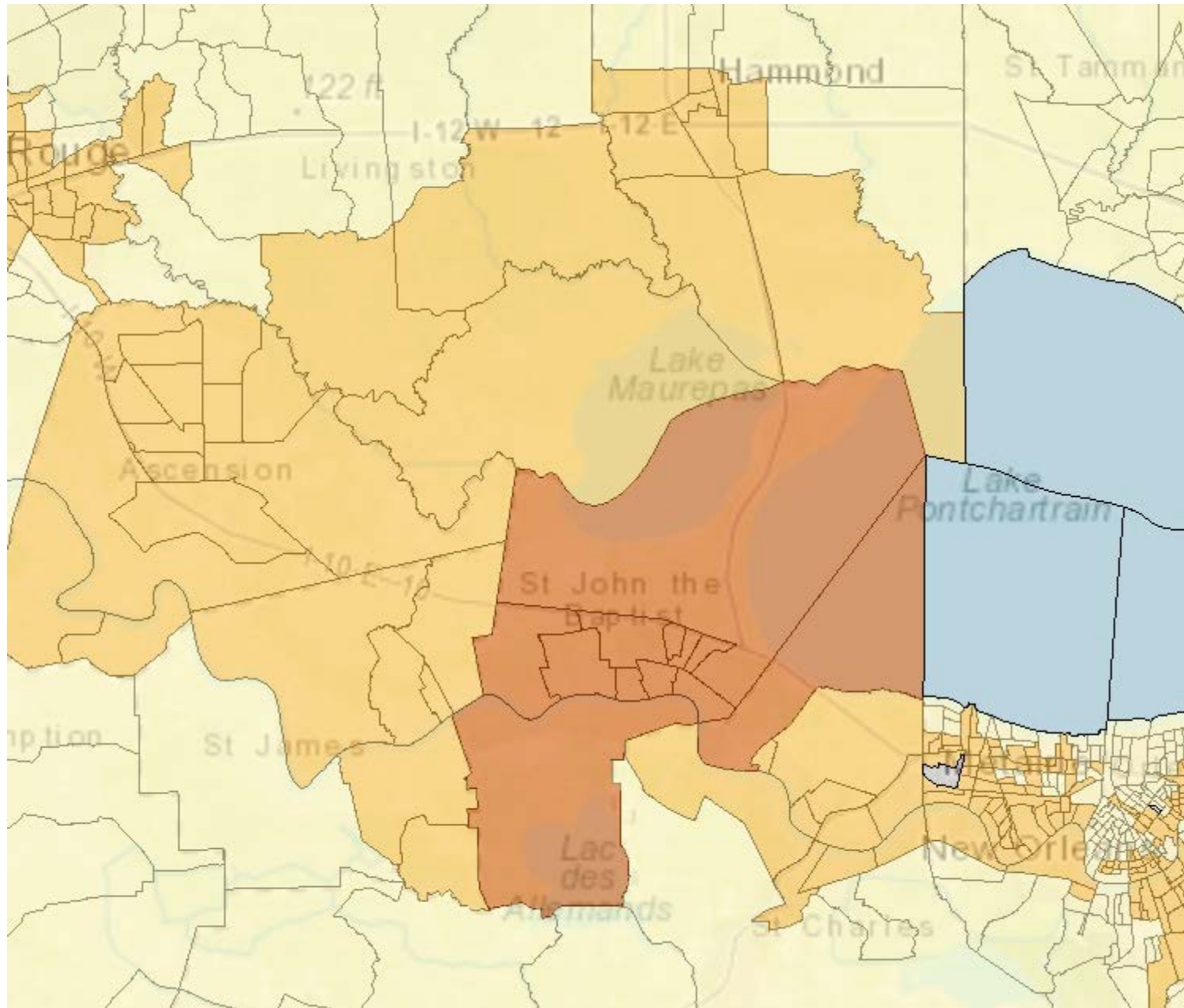
Total Risk

10 to 50

> 50 to 100

> 100 to 826





Legend

2011 Risks and Annual Ambient Concentrations

Cancer Risk and Respiratory Hazard Index

Total Risk

10 to 50

> 50 to 100

> 100 to 826

“CANCER ALLEY”



Legend

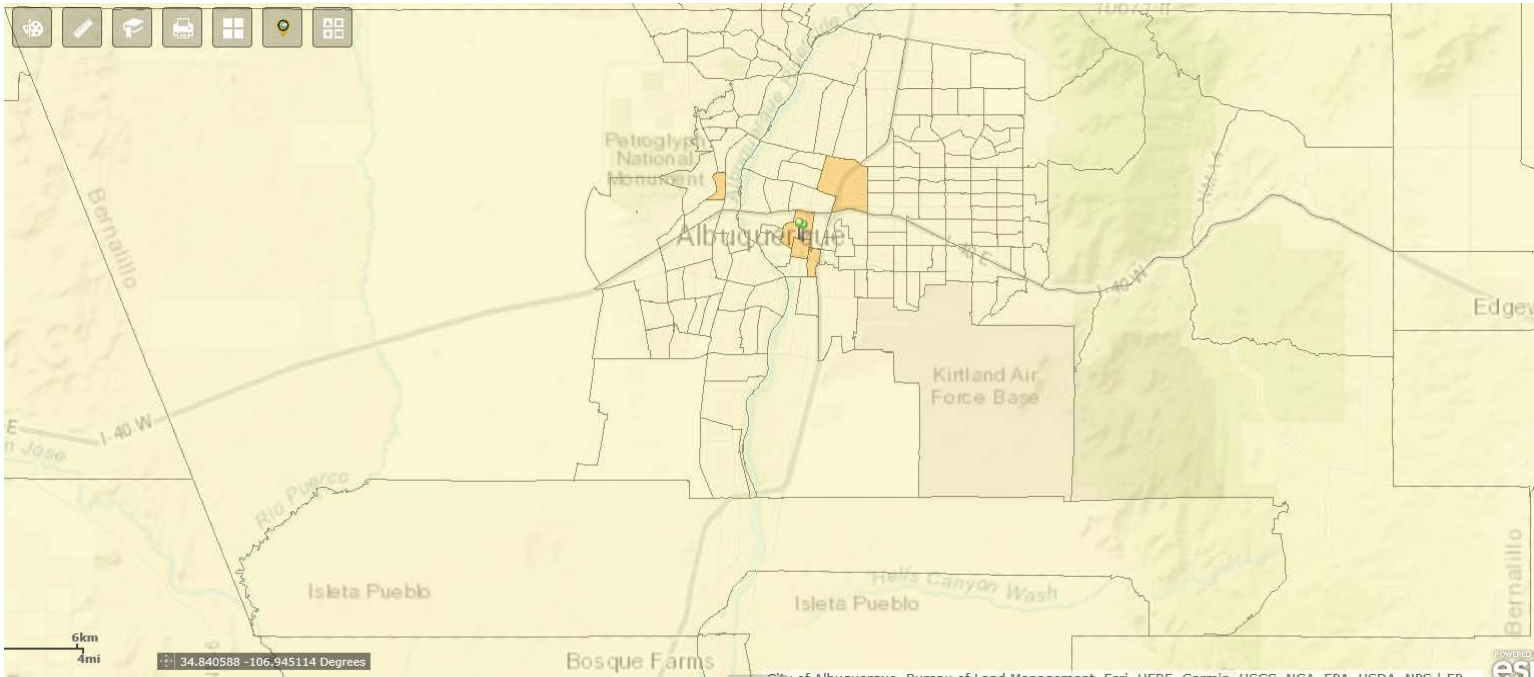
2011 Risks and Annual Ambient Concentrations

Cancer Risk and Respiratory Hazard Index

Total Risk

- 10 to 50
- > 50 to 100
- > 100 to 826

NEW MEXICO



Legend

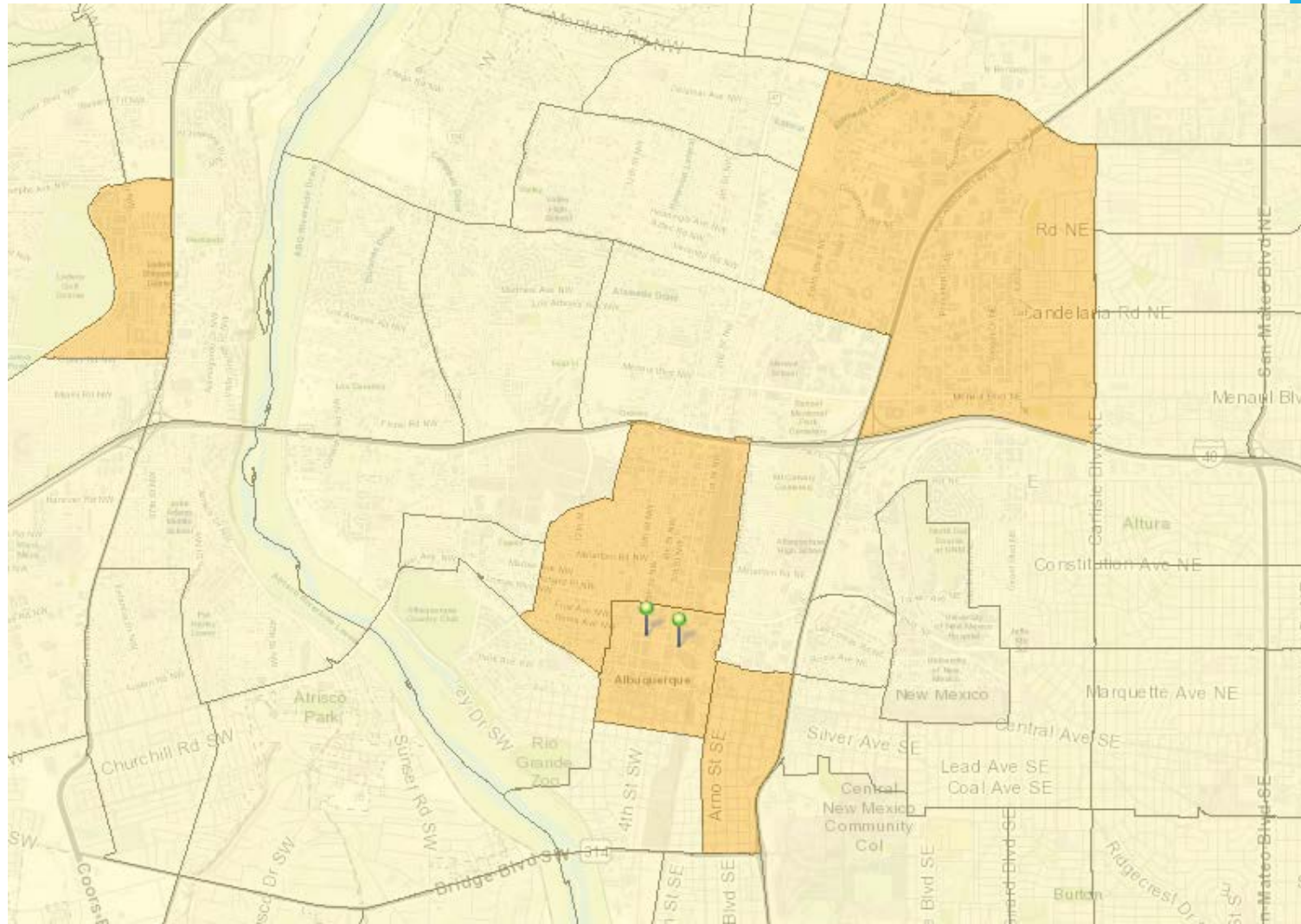
2011 Risks and Annual Ambient Concentrations

Cancer Risk and Respiratory Hazard Index

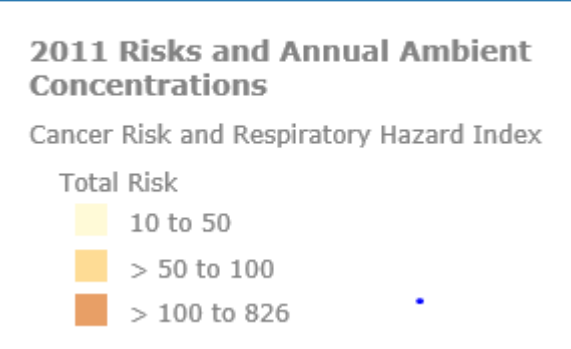
Total Risk

- 10 to 50
- > 50 to 100
- > 100 to 826

BERNALILLO COUNTY



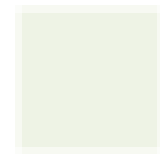
Legend



CANCER RISKS
50-100

Cumulative Hazard Index (Non-Cancer)

Total HI



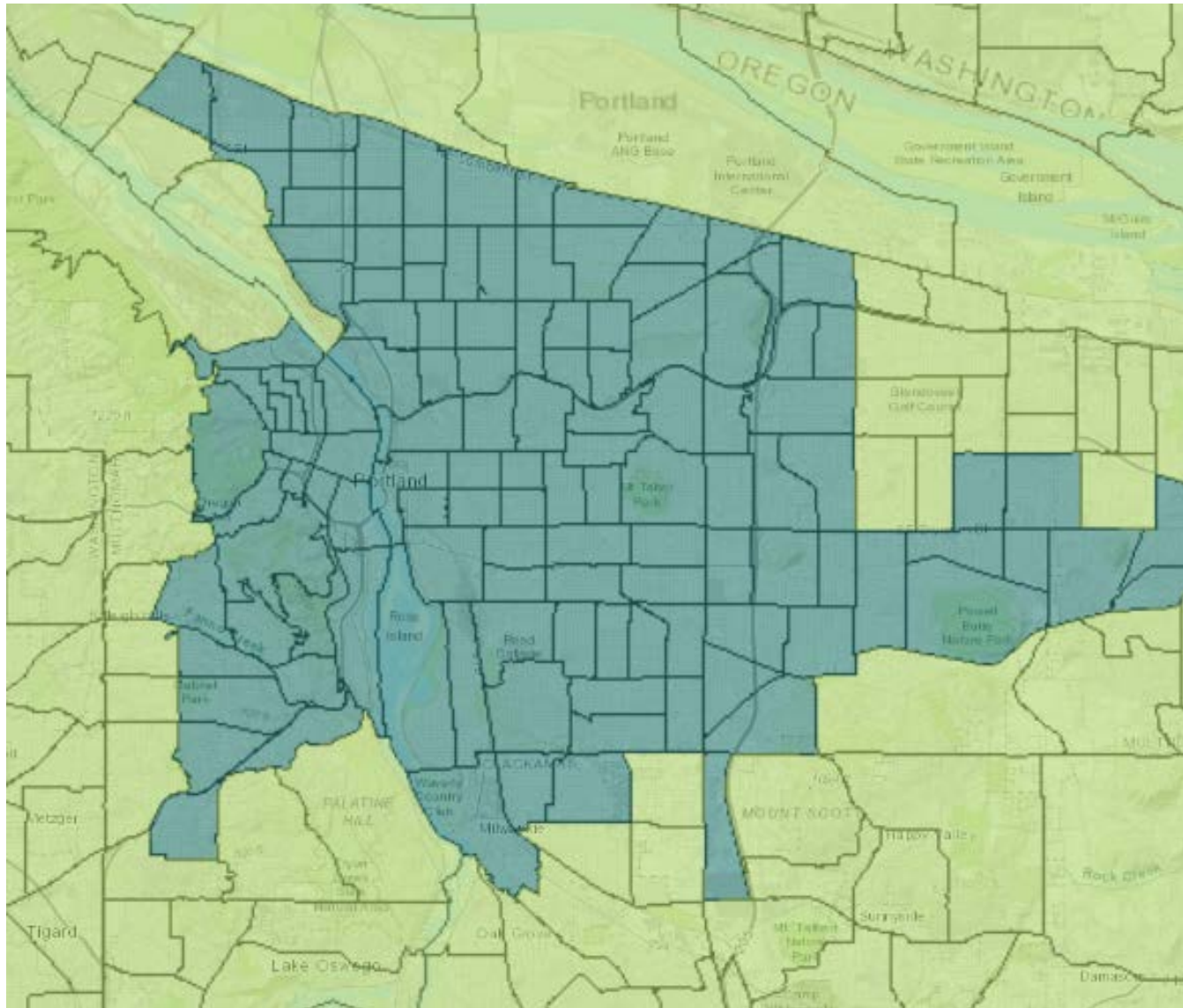
0.17 to 1



> 1 to 5



> 5 to 40



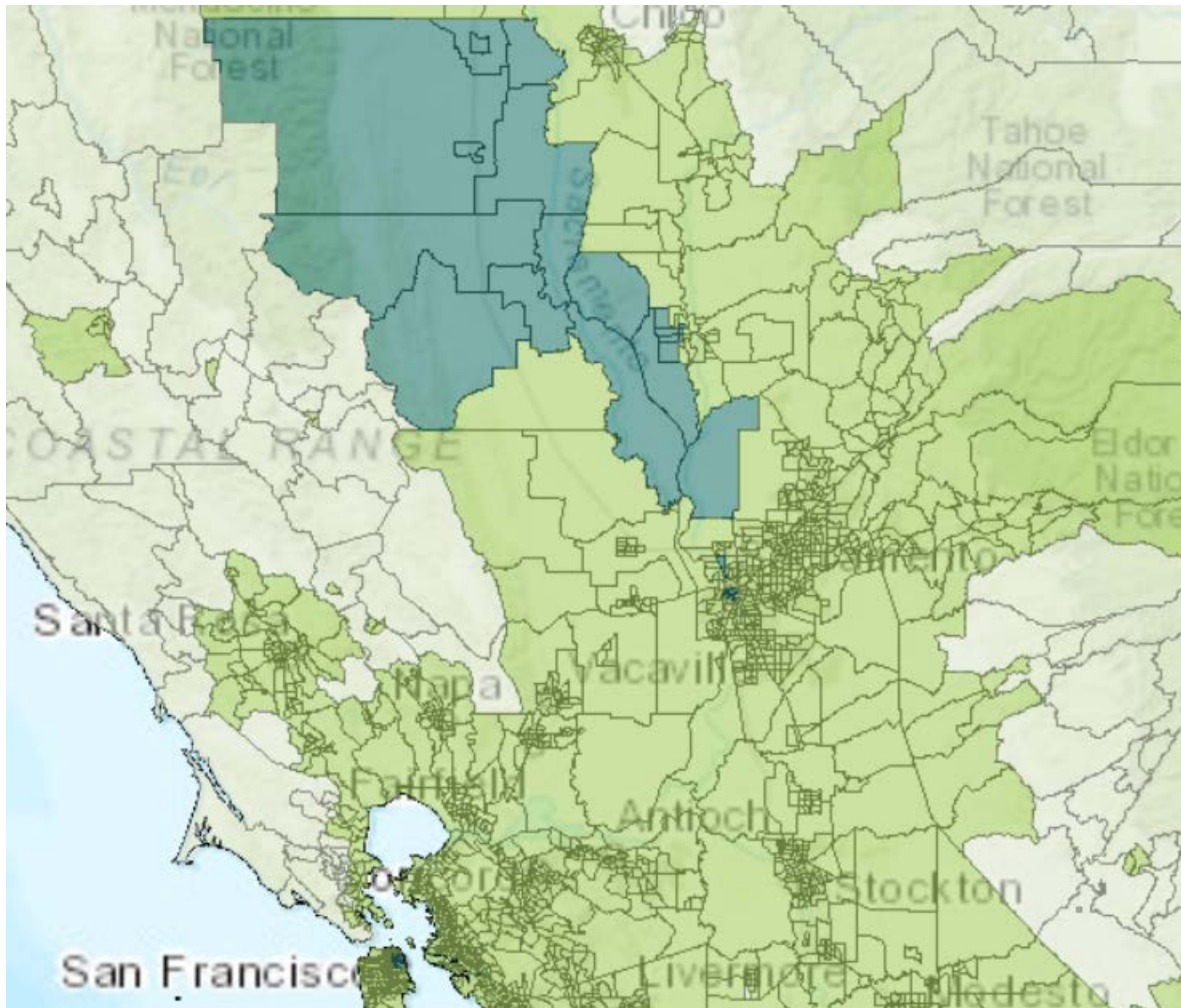
Total HI

0.17 to 1

> 1 to 5

> 5 to 40

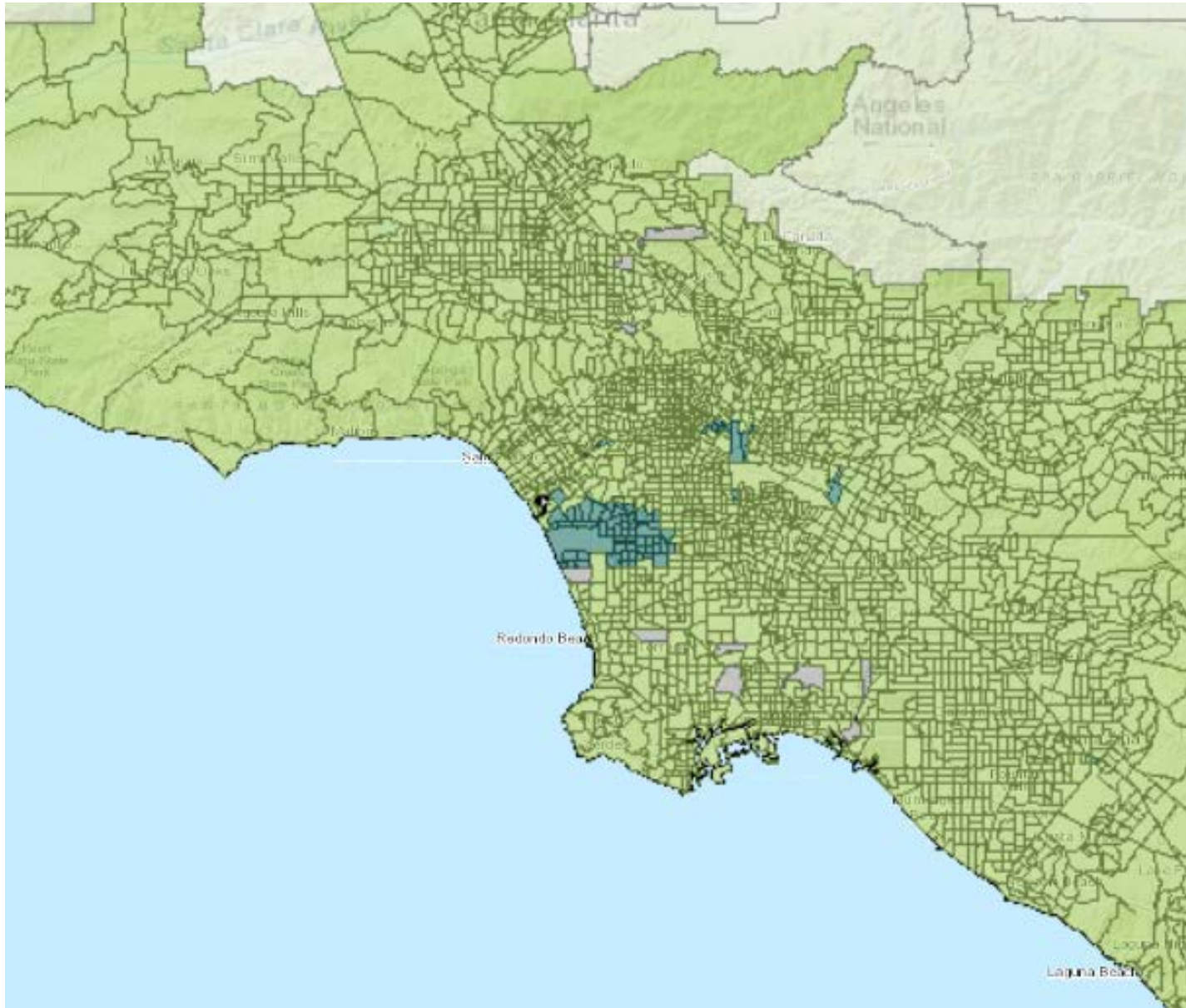
PORTLAND, OR



Total HI

- 0.17 to 1
- > 1 to 5
- > 5 to 40

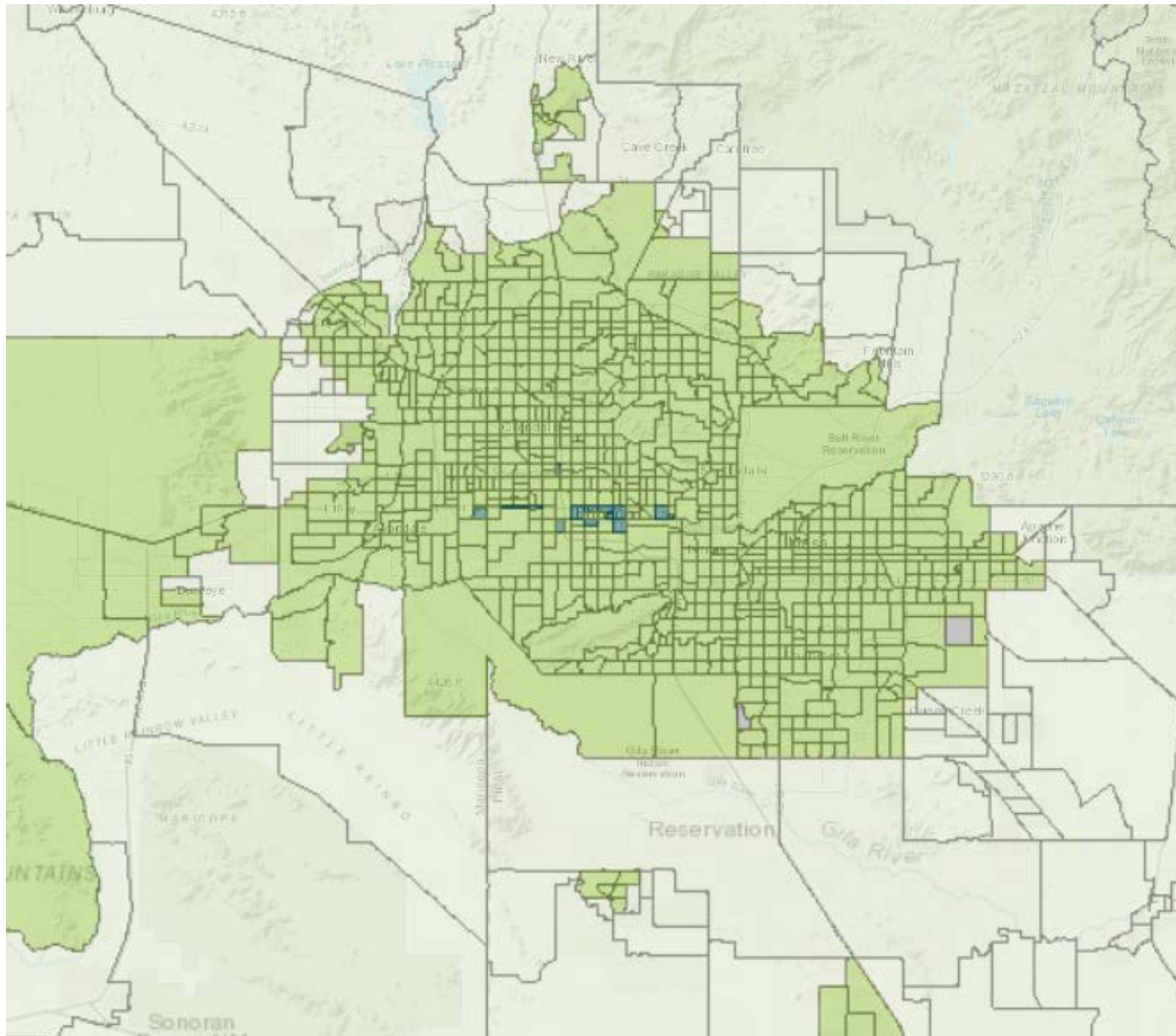
NORTHERN CALIFORNIA



Total HI

- 0.17 to 1
- > 1 to 5
- > 5 to 40

GREATER LOS ANGELES



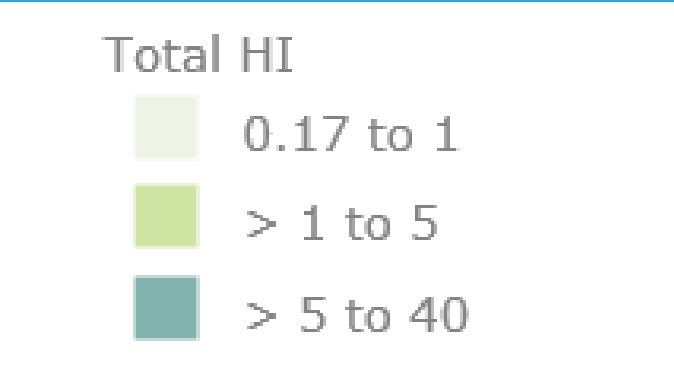
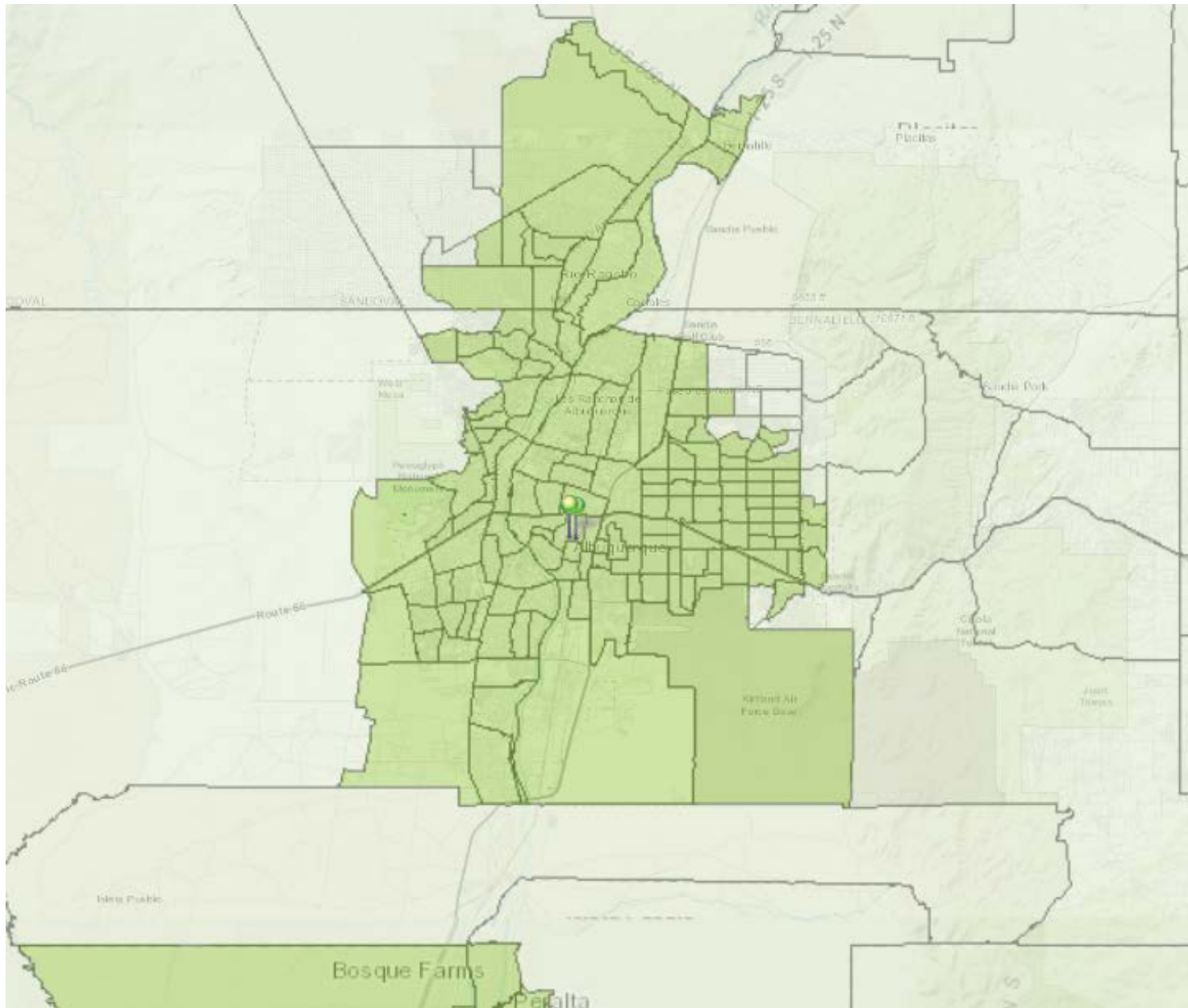
Total HI

0.17 to 1

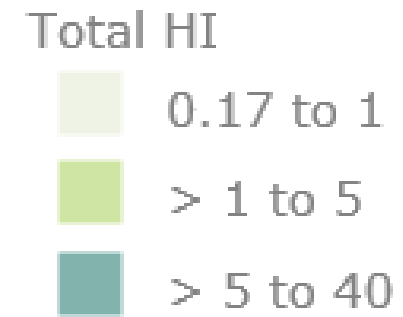
> 1 to 5

> 5 to 40

PHOENIX



ALBUQUERQUE/ BERNALILLO COUNTY



DOWNTOWN



Total Respiratory Hazard Index is 3.23

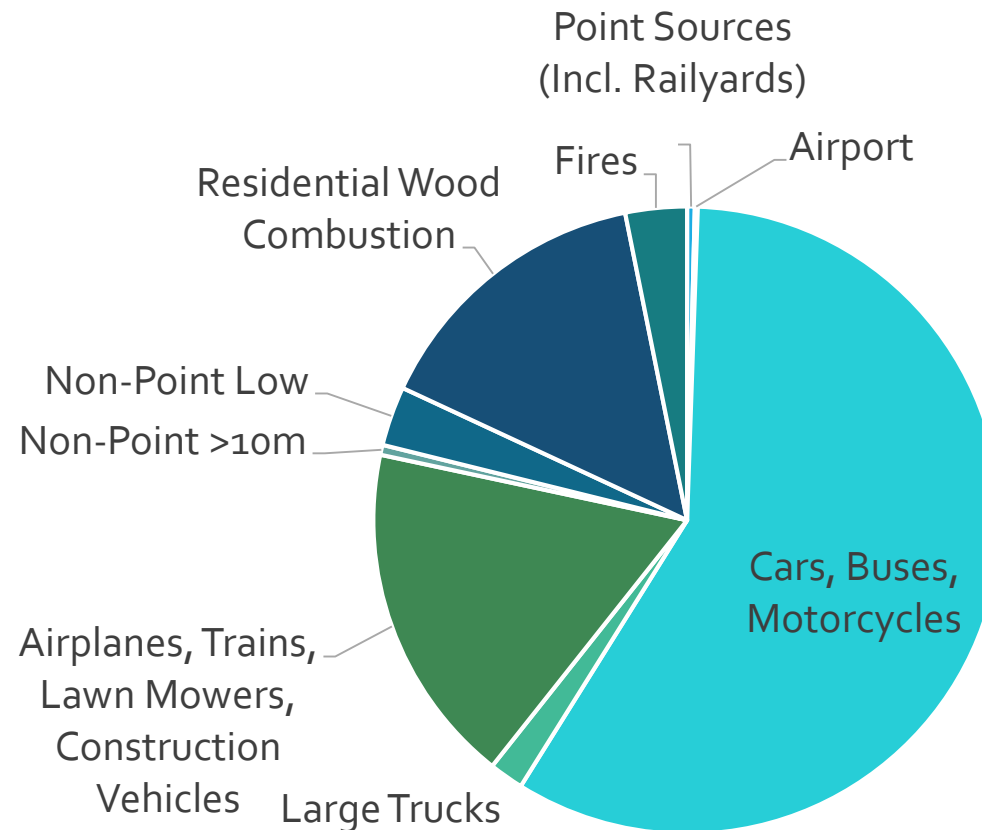
STCOFIPS	35001
State	NM
County	Bernalillo County
FIPS	35001002100
POP2010	1887
Area (m2)	1267391
Total HI	3.23
Point HI	0.01
Nonpoint HI	0.30
Onroad HI	1.82
Nonroad HI	0.58
Biogenics HI	0.04
Fires HI	0.04
Secondary HI	0.44
Background HI	0.01

What Do We Know?

- Major sources of air toxics emissions for cancer and non-cancer risk
- Major contaminants of concern in those emissions
- Air toxics risks in New Mexico, Bernalillo County, and Albuquerque are below EPA thresholds of concern

“How Can
We
Reduce
Emissions
Locally?”

E.g., Benzene Exposure Concentration
in Bernalillo County (2011, EPA NATA)



Coming Up

- Air Quality Coalition Wednesday, June 27, 5:30
 - Presentation by Tom Scharmen, NM Department of Health
 - Presentation by Kathryn Kelly on Cumulative Risk vs. Cumulative Impacts – What's the Difference?

QUESTIONS?
