



California Environmental Health Tracking Program

California Department of Health Services
Environmental Health Investigations Branch
Oakland, CA

Paul English, PhD, MPH, P.I.

Funding provided by the Centers for Disease Control
and Prevention and the California Wellness Foundation

Project Staff

- **Geoff Lomax, DrPH – Research Director**
- **Mimi Johnson, MPH – Program Coordinator**
- **Eric Roberts, MD, PhD – Pilot Projects Manager, Pilot P.I.**
- **Craig Wolff, MsEng – IT/GIS Manager**
- **Eddie Oh, MPH – Health Educator**
- **Michelle Wong, MPH – Health Educator**
- **Makinde Falide, MS – IT/GIS Specialist**
- **Sam Valdez – IT/GIS Specialist**
- **Svetlana Smorodinsky, Research Scientist**
- **Maile Newman – Administrative**

History of Environmental Public Health Tracking in California: How Tracking leads to Policy Actions

- PEW Environmental Health Commission 2000
- California Env. Health Surveillance System 2001
(SB 702-Escutia)
- CDC Tracking Cooperative Agreement 2002
CA Wellness Foundation award
- CA Environmental Health Tracking Act 2003
(SB 189-Escutia)
CDC Data Linkage Demonstration Award

History of Environmental Public Health Tracking in California: How Tracking leads to Policy Actions

- Report “Strategies for Establishing an Env Health Surveillance System in CA” released 2004

Office of Environmental Health Tracking
(SB 1446-Escutia – Pending)

Healthy Californians Biomonitoring Program
(SB 1168-Ortiz – Pending)

Chemical Hazard Info/Tracking
(AB 1940- Chan – Withdrawn)

Parkinson’s Disease Registry
(AB 2248 –Frommer – Pending)

California Environmental Health Tracking Program

Communication/Stakeholder Capacity

- Needs Assessment
- Data visualization
- Outreach/Education

“Best practices”
Exposure assessment
Methods

Chemical Hazard
and Disease surveillance

Policy Development

Biomonitoring

Linkage Demonstration
Projects

SB 702

Expert Panel Recommendations

- There is an urgent need for a coordinating office of all California databases that track environmental health (SB 1446)
- Environmental Health data need to be shared and integrated in a standardized manner and communicated to public in a timely way
- Public health and environmental agencies lack adequate staff and resources to respond to env. health threats.
- Industries that produce, import, or store chemical, biological, or physical agents in CA should be required to report (AB 1940):
 - Full chemical/tox properties
 - Location and quantity of manufacture
 - Lab methods for env. and biological sampling

SB 702 Report Recommendations

- State laboratory biomonitoring capabilities need to be enhanced
- California needs CAIHANES and Cal-HEXAS surveys
- Surveillance systems for asthma, childhood neurodevelopmental, and neurological diseases need to be developed or enhanced. (AB 2248 – Parkinson’s Disease)
- Need to develop standardized protocols for investigating disease clusters/ Build Health Education Capability
- Hazard, exposure and health data need to be reported by race and income.

Needs Assessment

- We surveyed 29 NGOs, 13 local env. health agencies and 17 local health agencies.
 - Priority issues related to tracking:
 - Public education/outreach/advocacy
 - Building/fostering partnerships
 - Priority issues for training:
 - Interpreting/ analyzing data
 - GIS mapping/spatial statistics

Needs Assessment Results

Frequently asked by public of respondents:

- Basic information on environmental health

Frequently asked of NGOs:

- Data on environmental hazards/exposures

Frequently asked of local agencies:

- Data on health effects

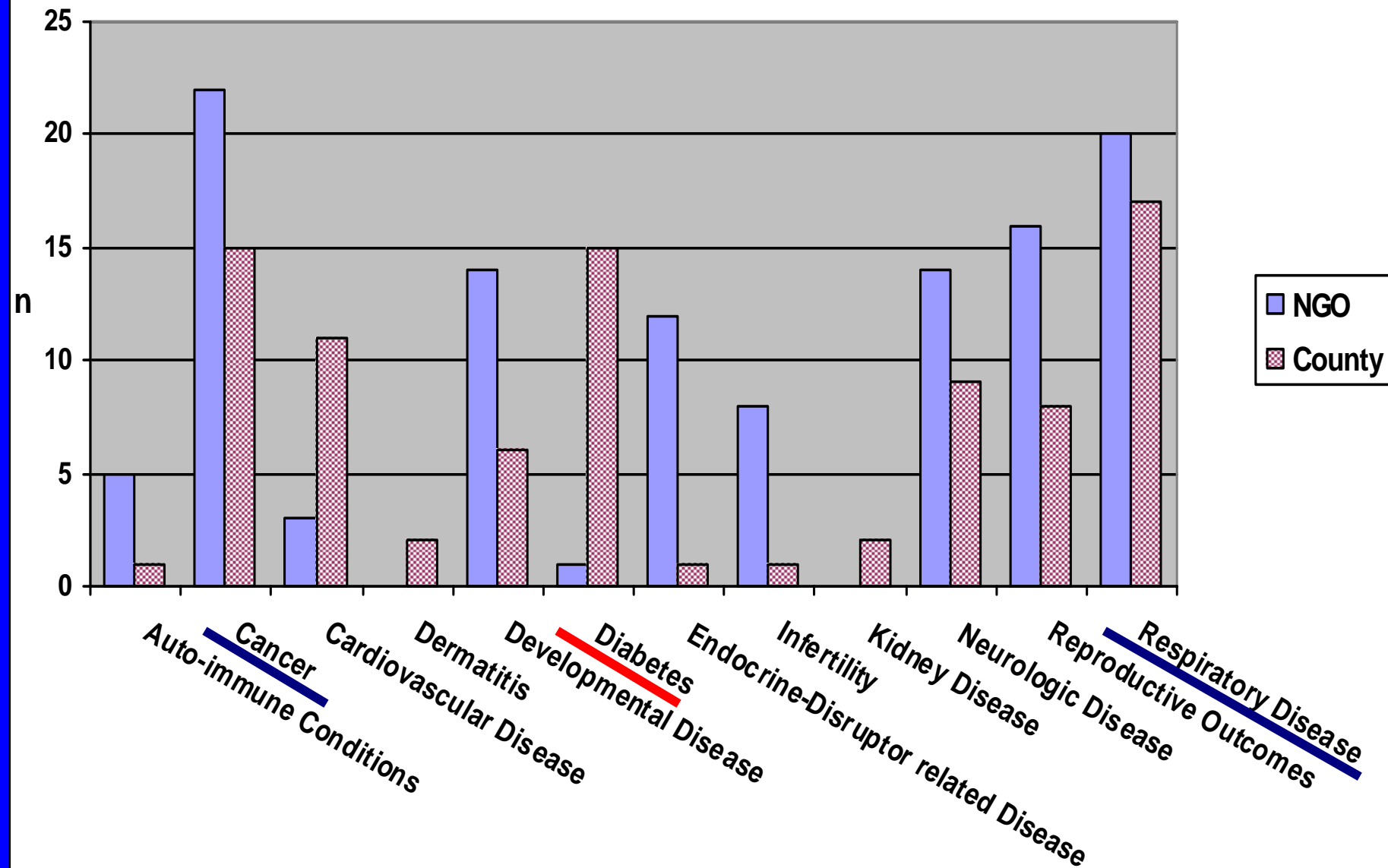
Respondents are most able to provide:

- Basic information on environmental health
- Assistance in utilizing data for action

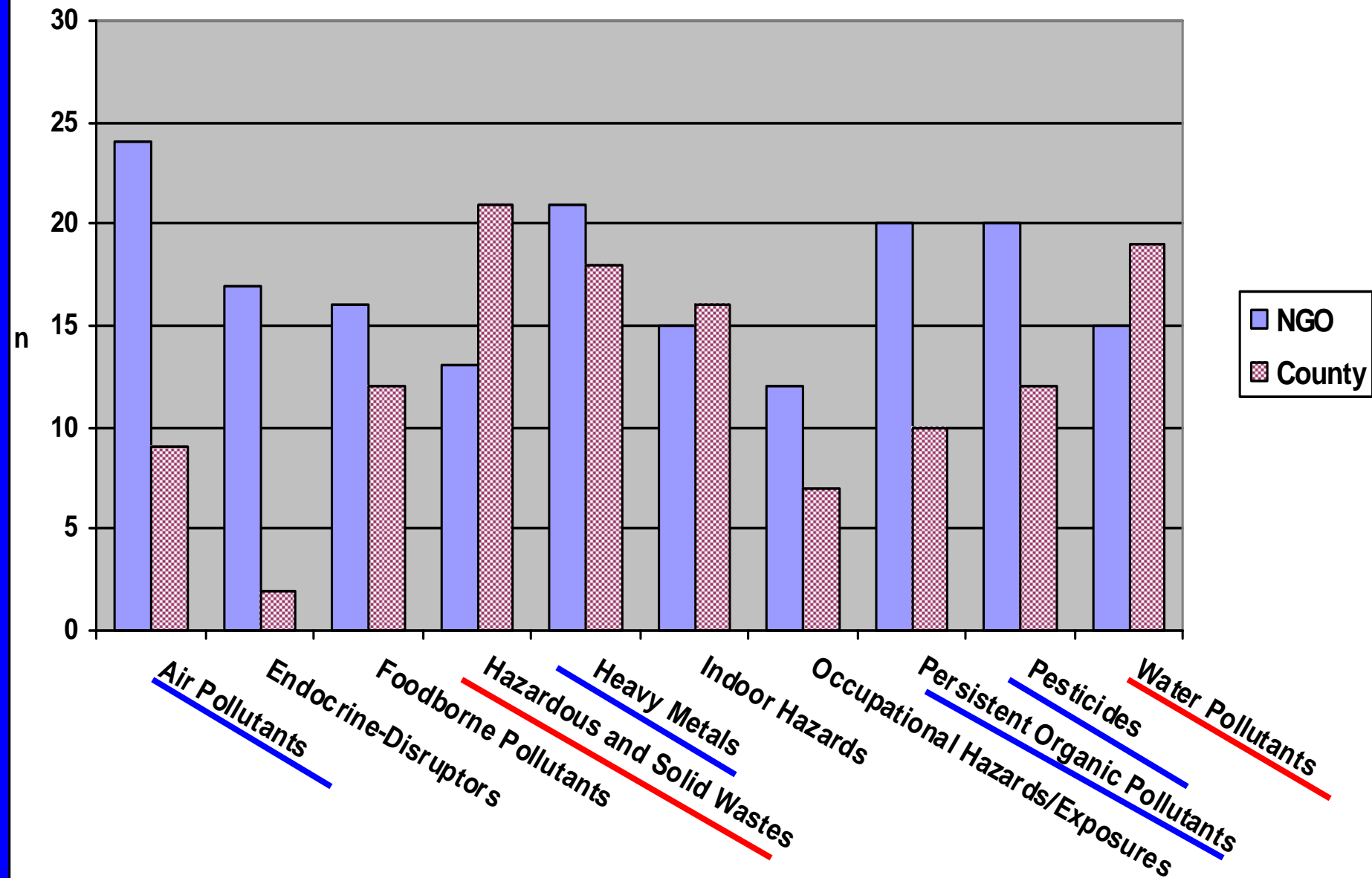
Respondents are least able to provide:

- Assistance in collecting community data
- Assistance in conducting community-based research/studies

Priority Health Effects

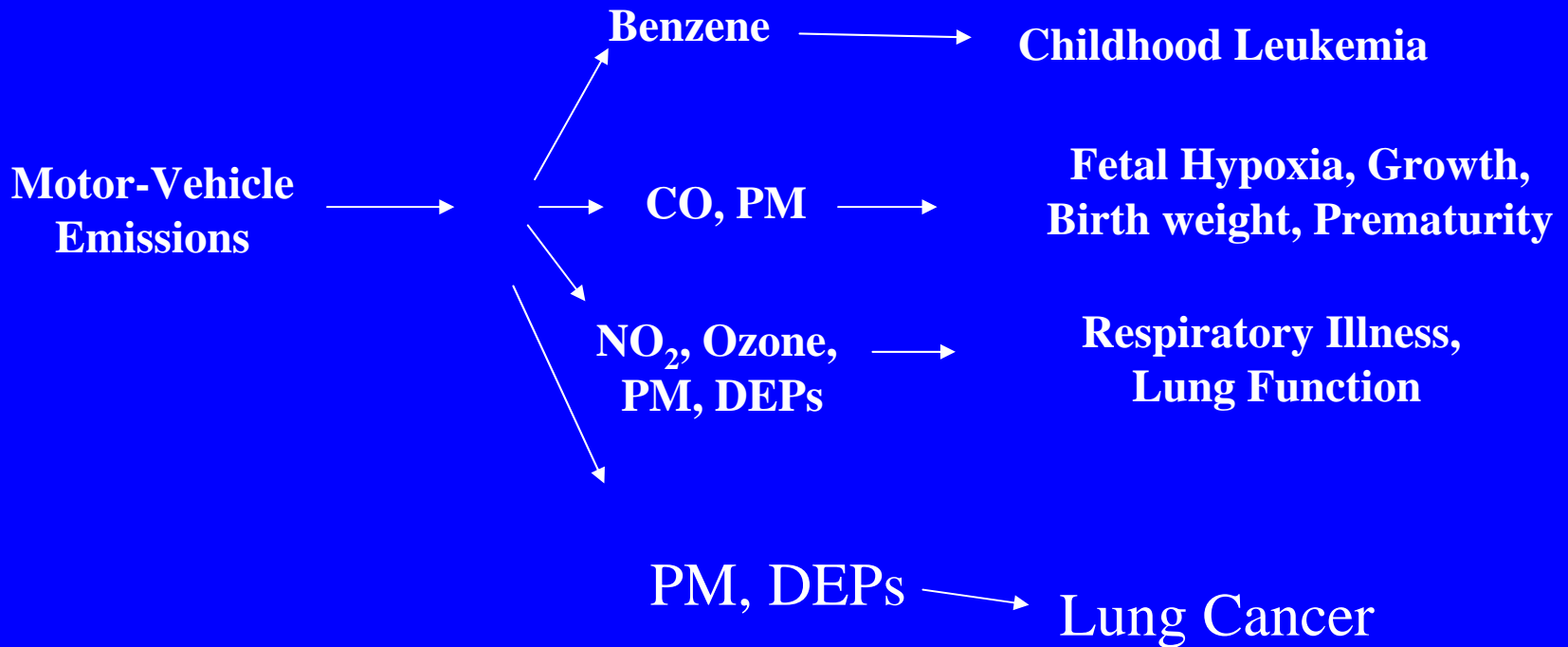


Priority Hazards/Exposures



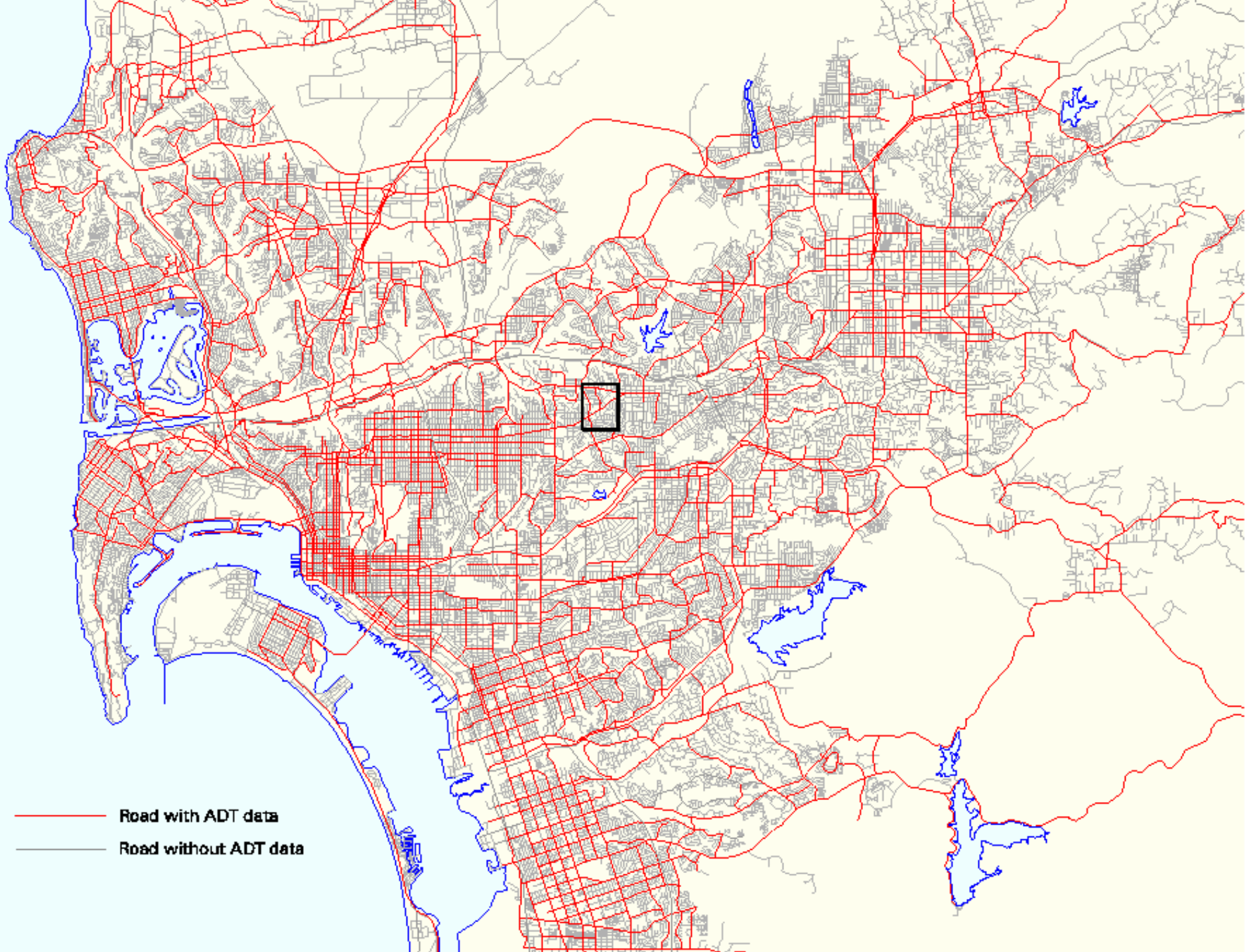
Data Linkage Project 1:
Traffic-Related Pollutants and
Adverse Reproductive Outcomes /
Asthma Exacerbations

Health Effects Associated with Motor-Vehicle Emissions



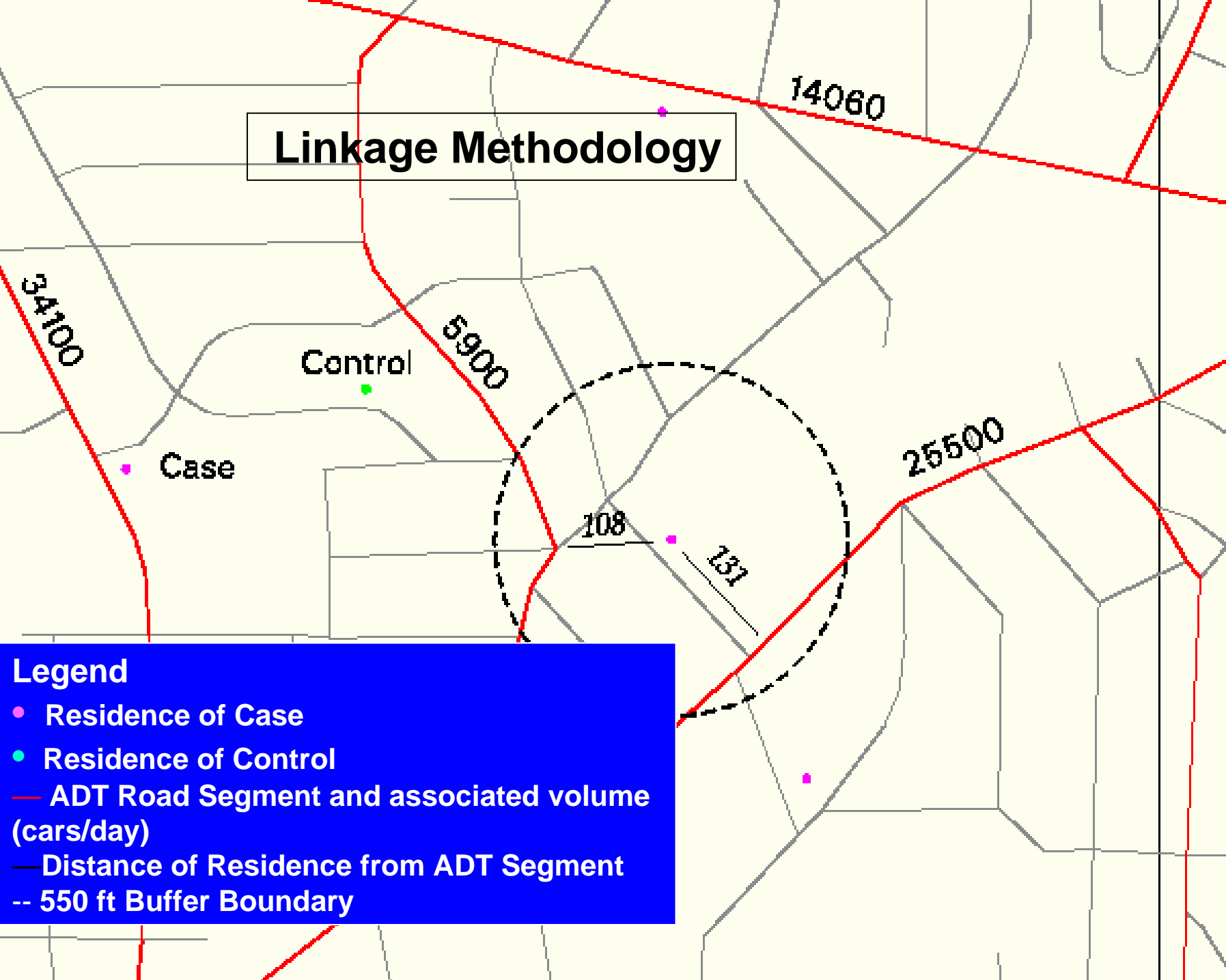
Demonstration 1 Goals

- To examine the feasibility of tracking routinely available data on asthma and adverse pregnancy outcomes
- To identify elevated “hotspot” areas of concern of these health outcomes and traffic-related pollutants
- To explore GIS methods of mapping and linking pollution and health data for health communication and data dissemination for local stakeholders
- To assist local health departments in planning and allocation of resources



- Road with ADT data
- Road without ADT data

Linkage Methodology



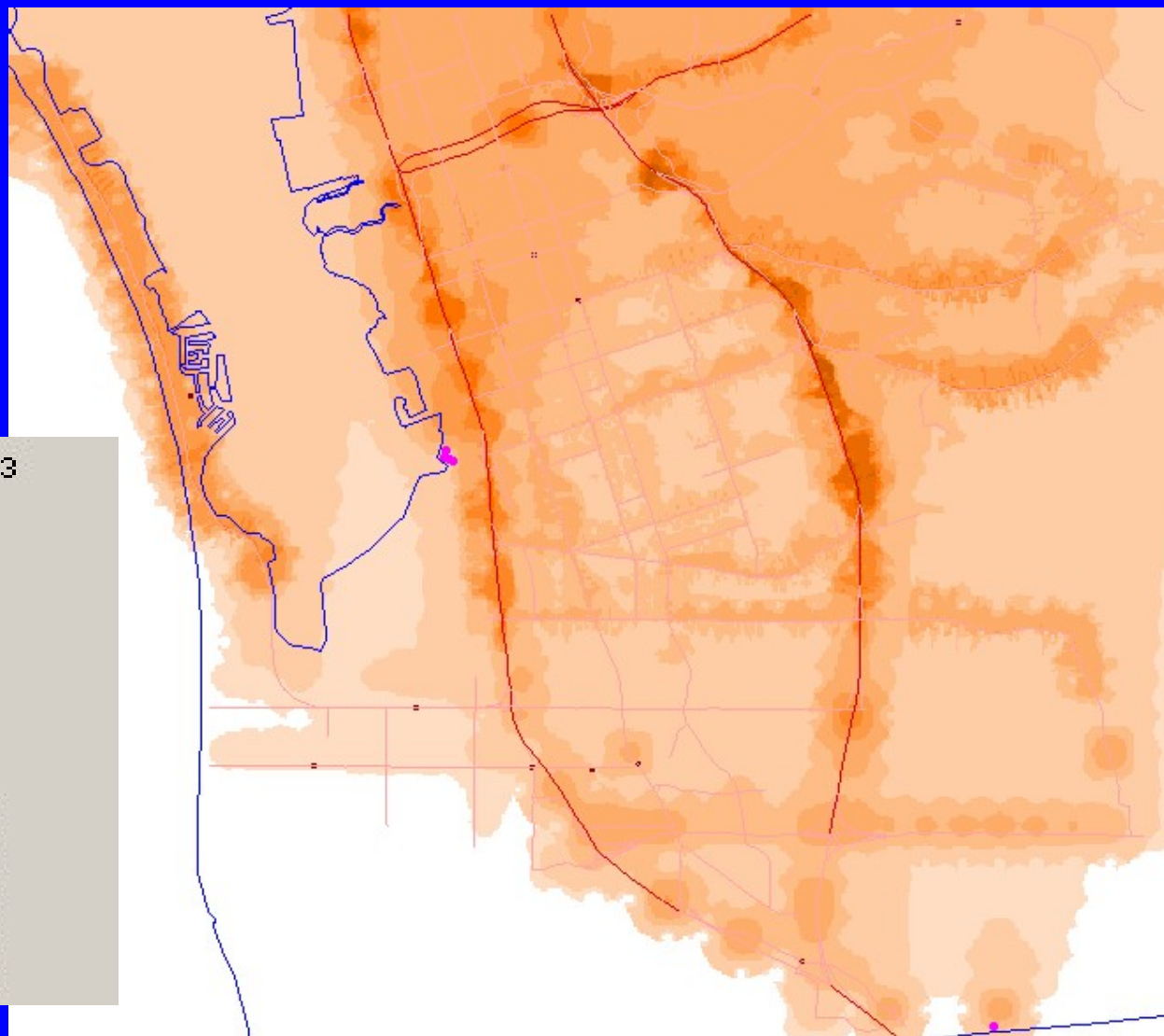
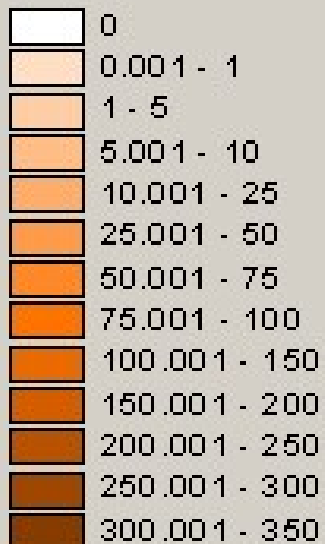
Legend

- Residence of Case
- Residence of Control
- ADT Road Segment and associated volume (cars/day)
- Distance of Residence from ADT Segment
- 550 ft Buffer Boundary

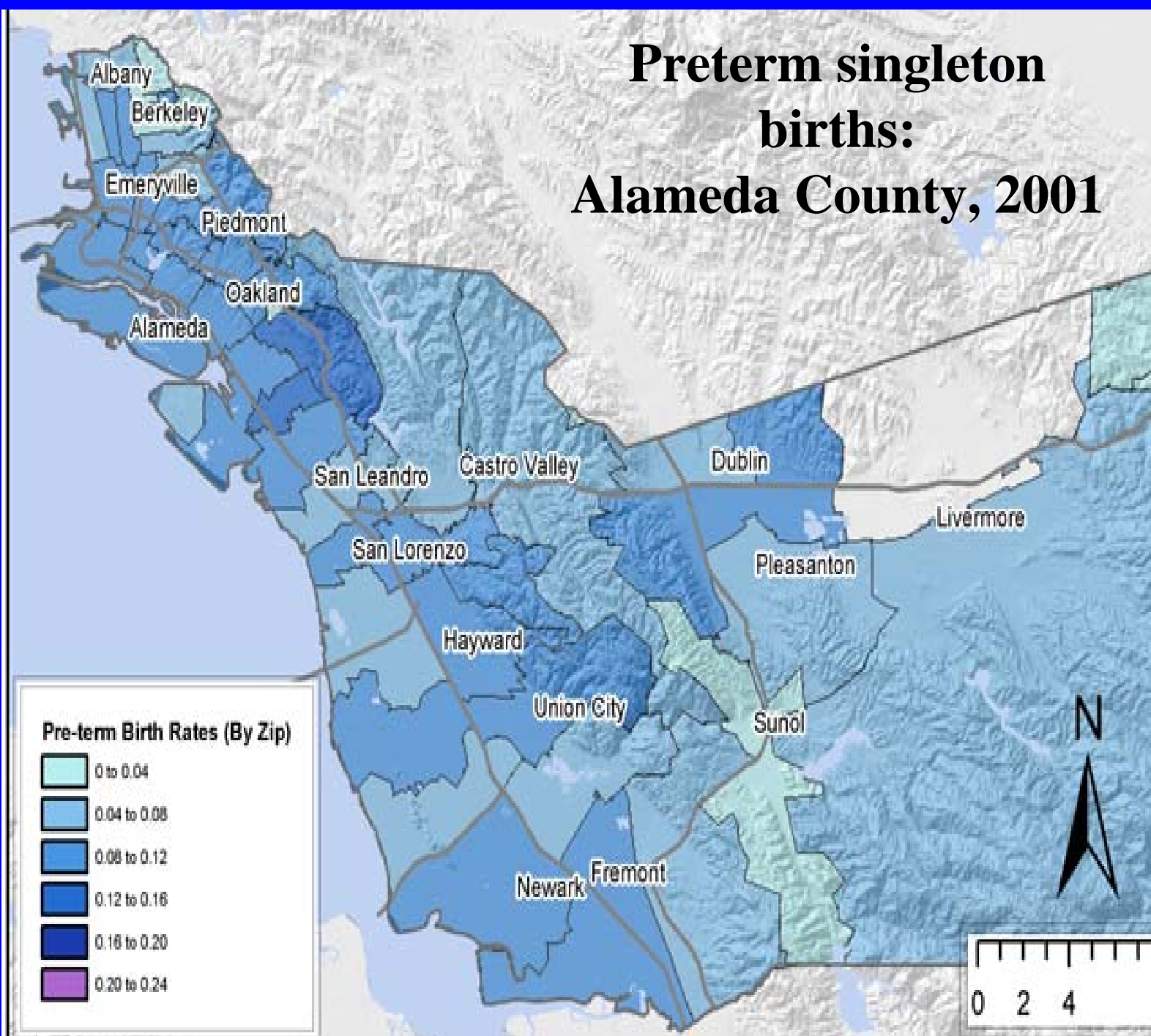
Modeled traffic pollution (ADMS-Urban)

Modeled
total NO_x
for 2000,
San Diego
County

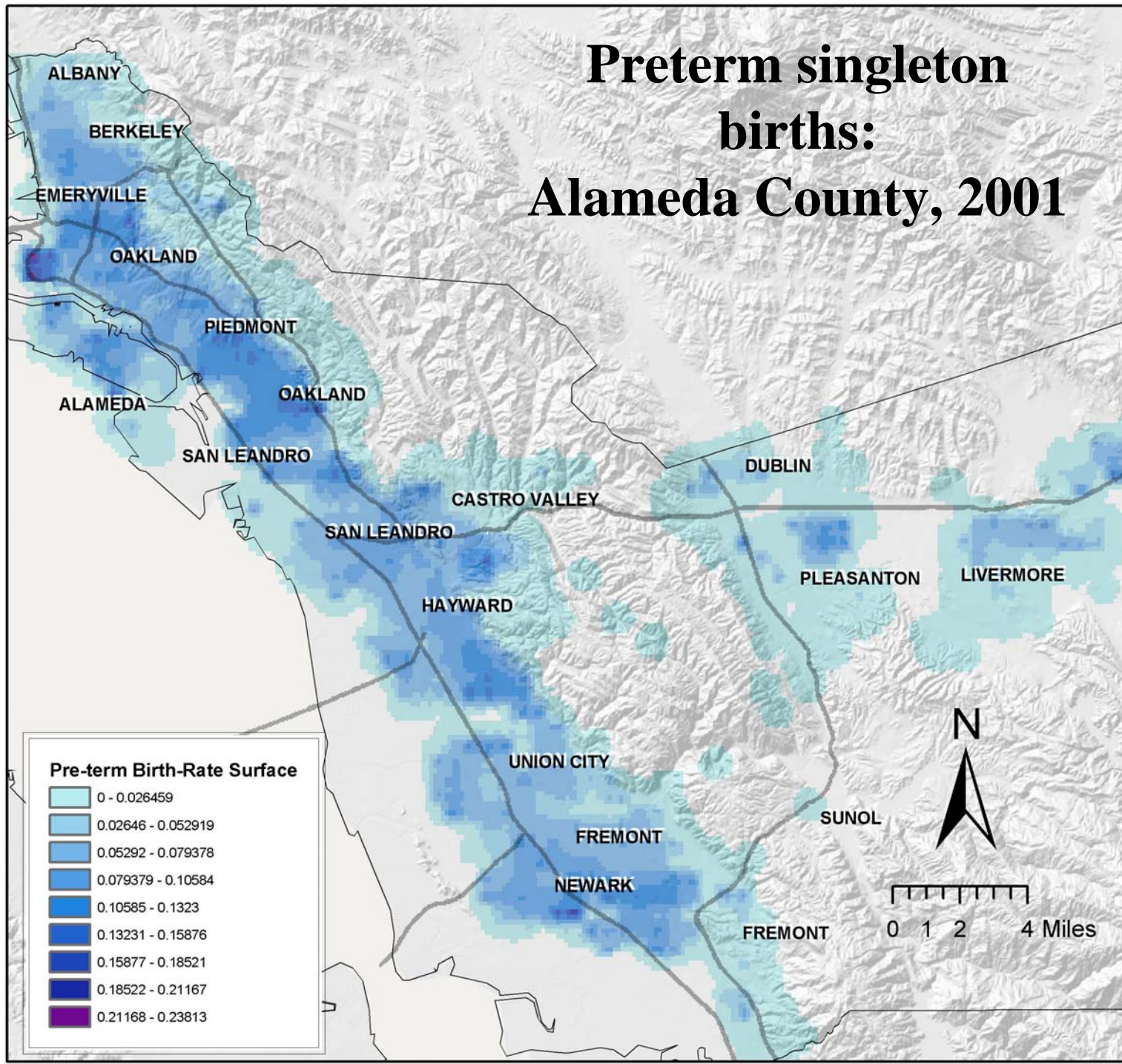
24 Hour NO_x , μg_m^3



Preterm singleton births: Alameda County, 2001



Preterm singleton births: Alameda County, 2001



Pre-term Birth-Rate Surface

Lightest Blue	0 - 0.026459
Light Blue	0.02646 - 0.052919
Medium-Light Blue	0.05292 - 0.079378
Medium Blue	0.079379 - 0.10584
Dark Blue	0.10585 - 0.1323
Very Dark Blue	0.13231 - 0.15876
Dark Purple	0.15877 - 0.18521
Very Dark Purple	0.18522 - 0.21167
Black	0.21168 - 0.23813



Asthma indicators

Decreasing quality of care

Increasing quality of care



Mortality

Hospitalizations

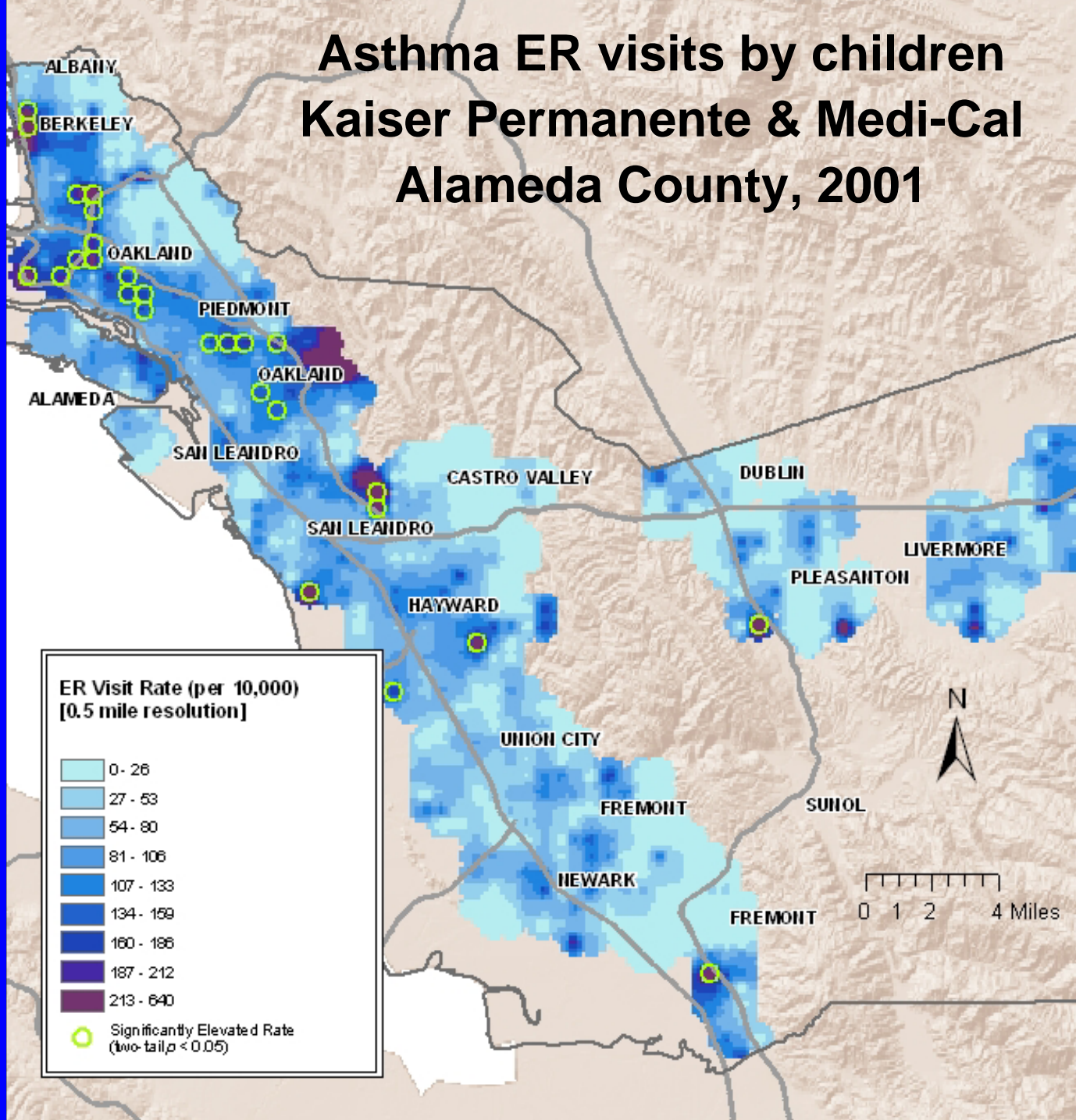
ER visits

Outpatient visits

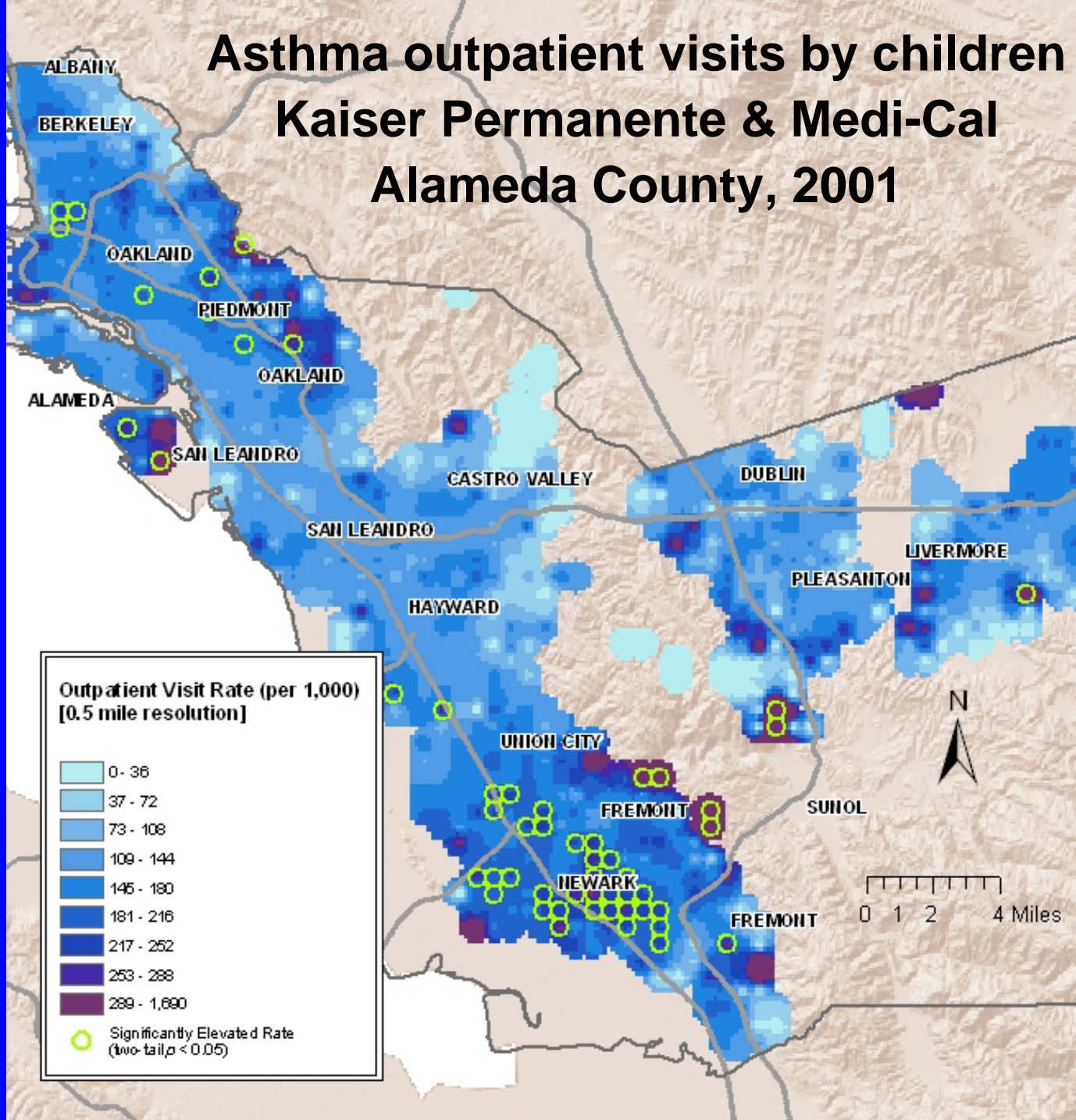
Symptom
medication
purchasing

Maintenance
medication
purchasing

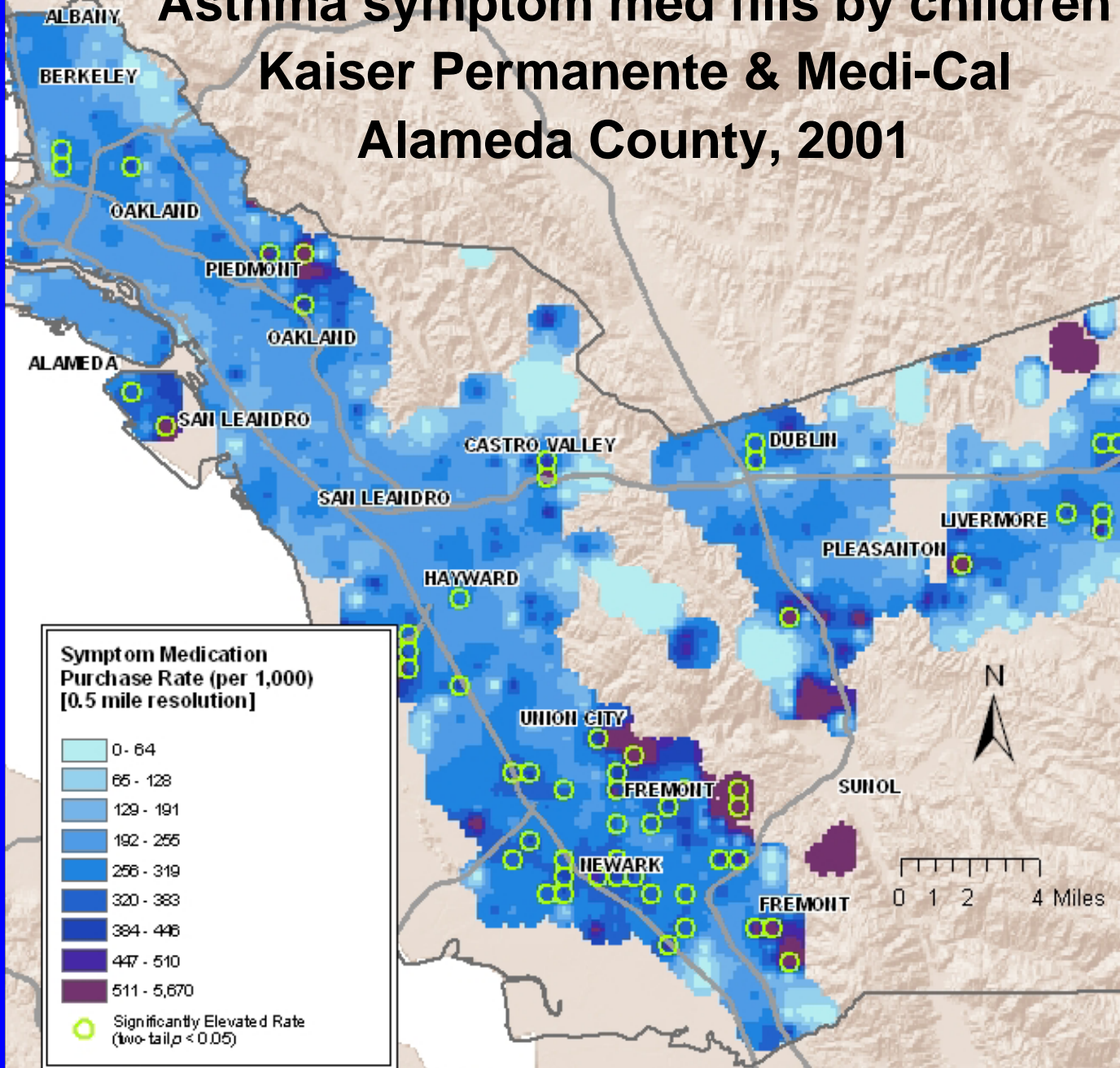
Asthma ER visits by children Kaiser Permanente & Medi-Cal Alameda County, 2001



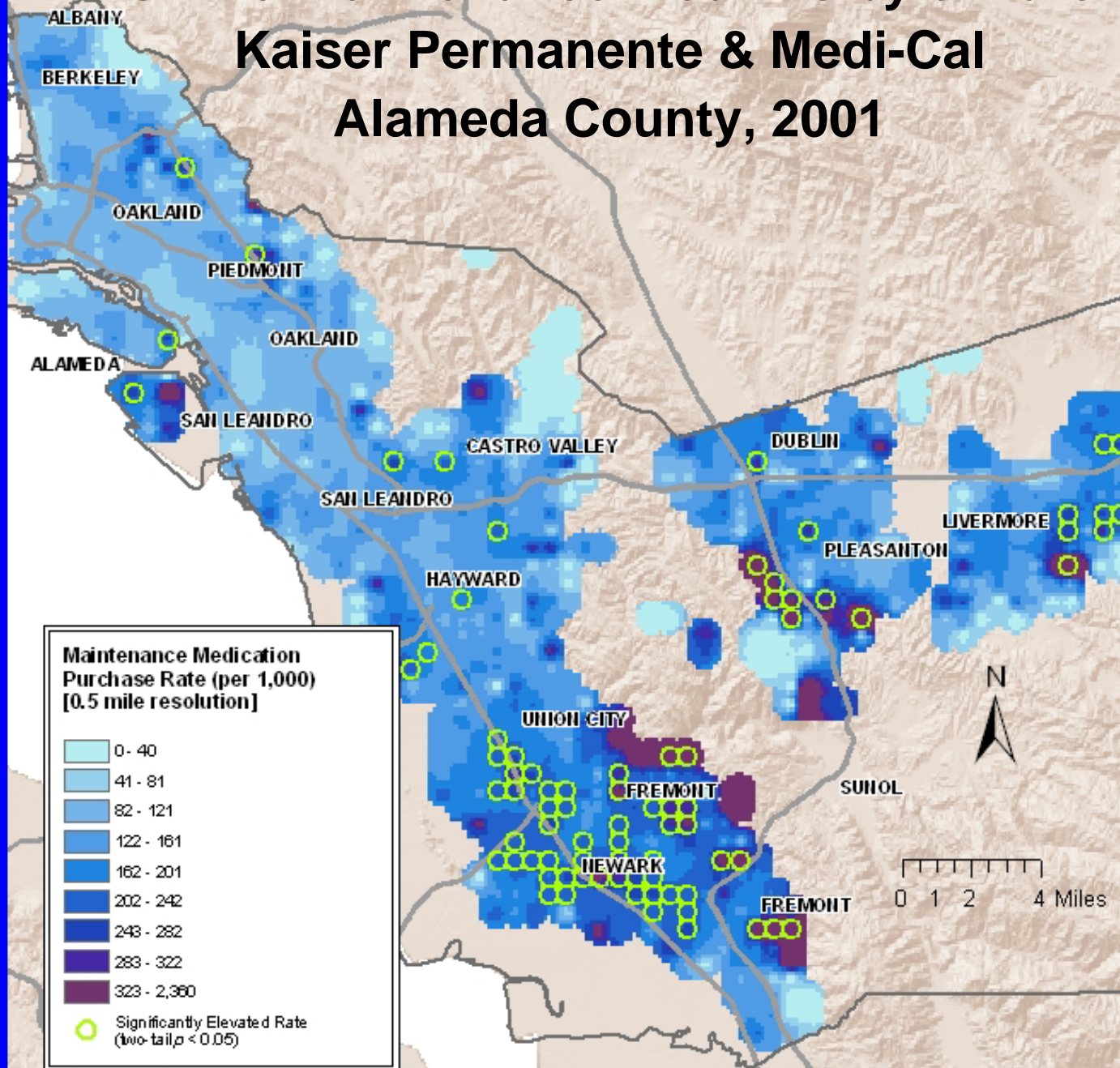
Asthma outpatient visits by children Kaiser Permanente & Medi-Cal Alameda County, 2001



Asthma symptom med fills by children Kaiser Permanente & Medi-Cal Alameda County, 2001



Asthma maintenance med fills by children Kaiser Permanente & Medi-Cal Alameda County, 2001

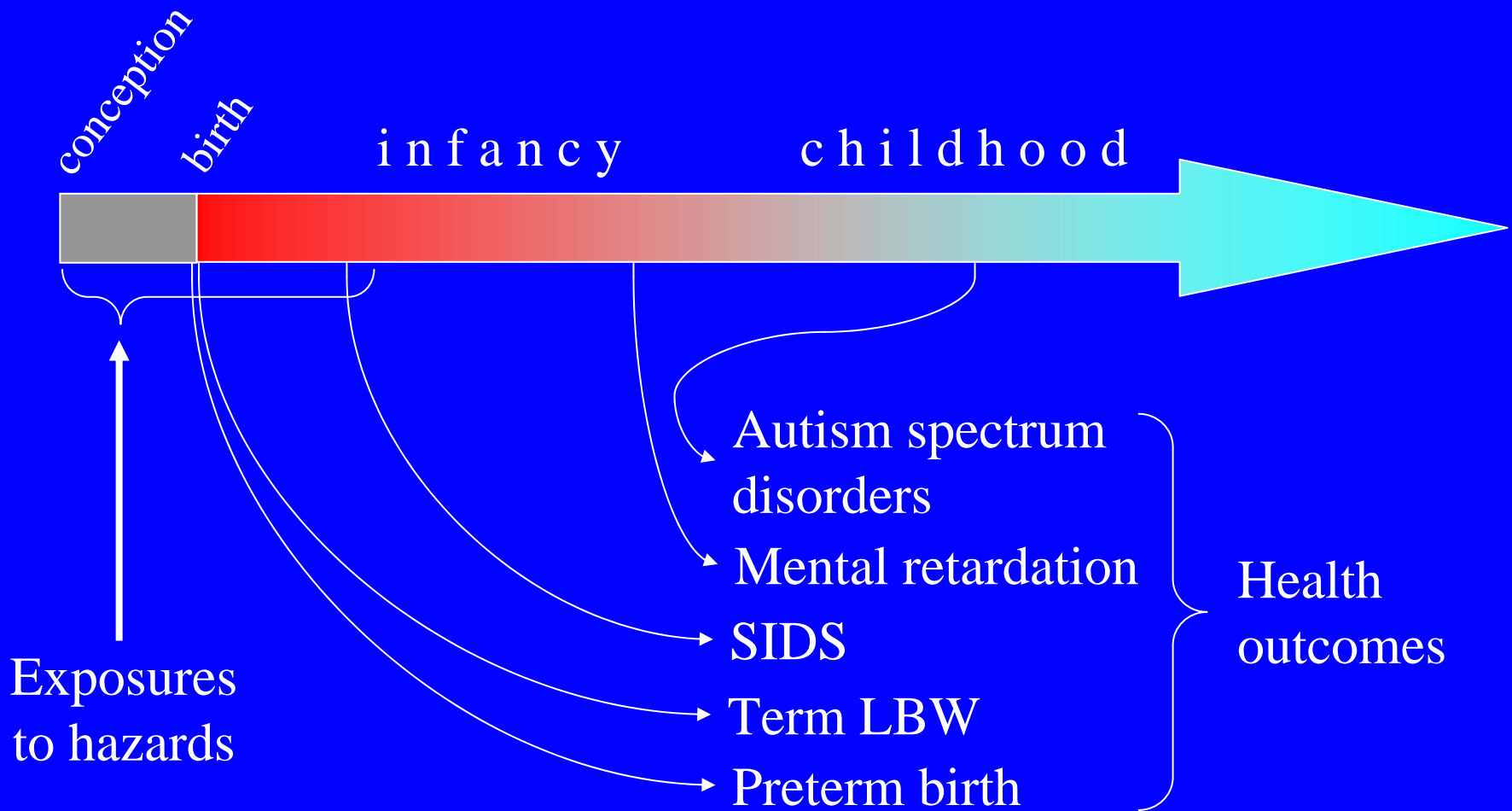


Data Linkage Demonstration 2:

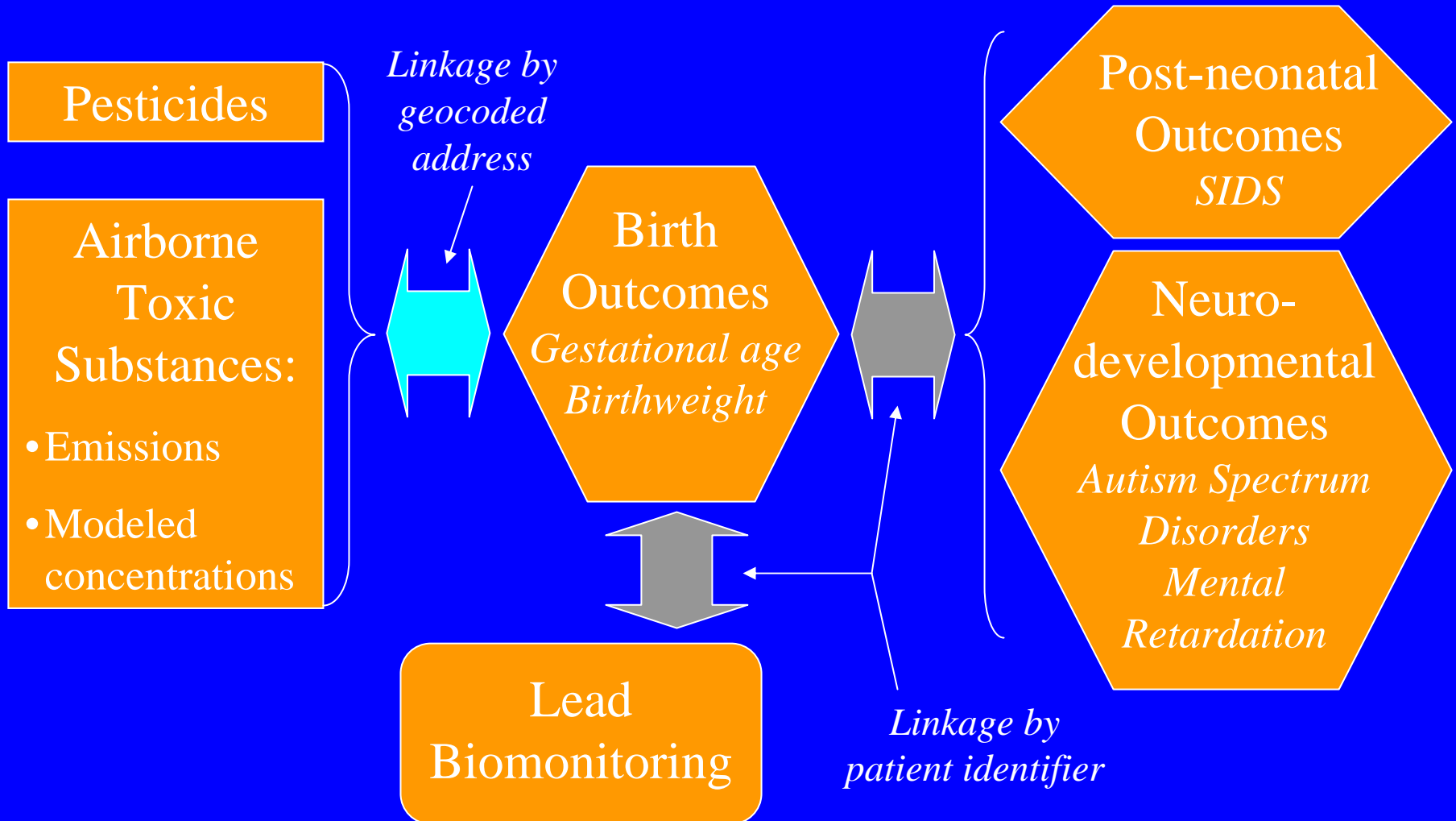
The Central Valley/South Coast (CVSC) Children's Environmental Health Tracking Project

Eric M. Roberts, MD PhD, Principal Investigator

CVSC Project Foci



Data Linkage model



Postulated connections (selected)

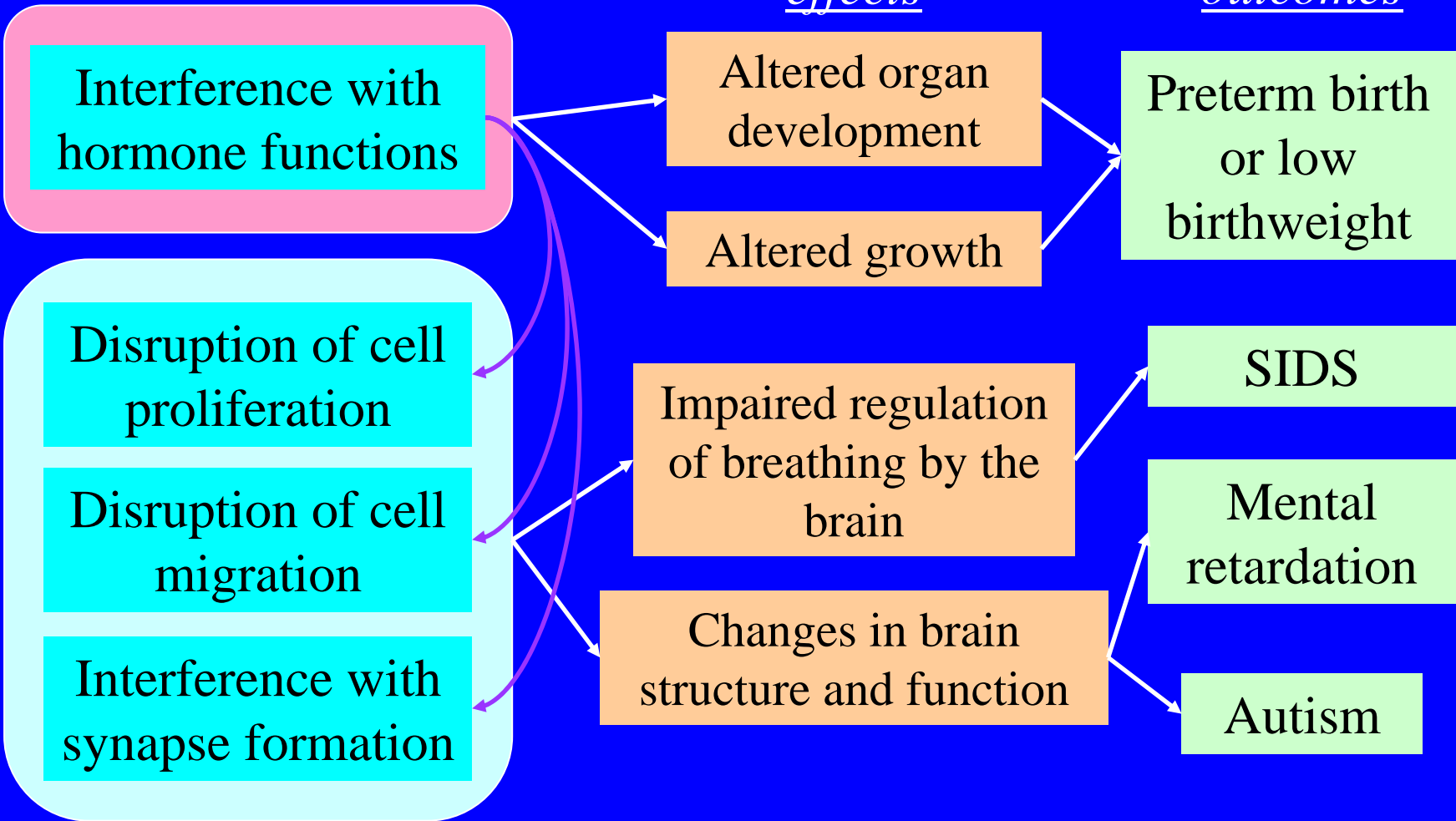
Endocrine system

Nervous system

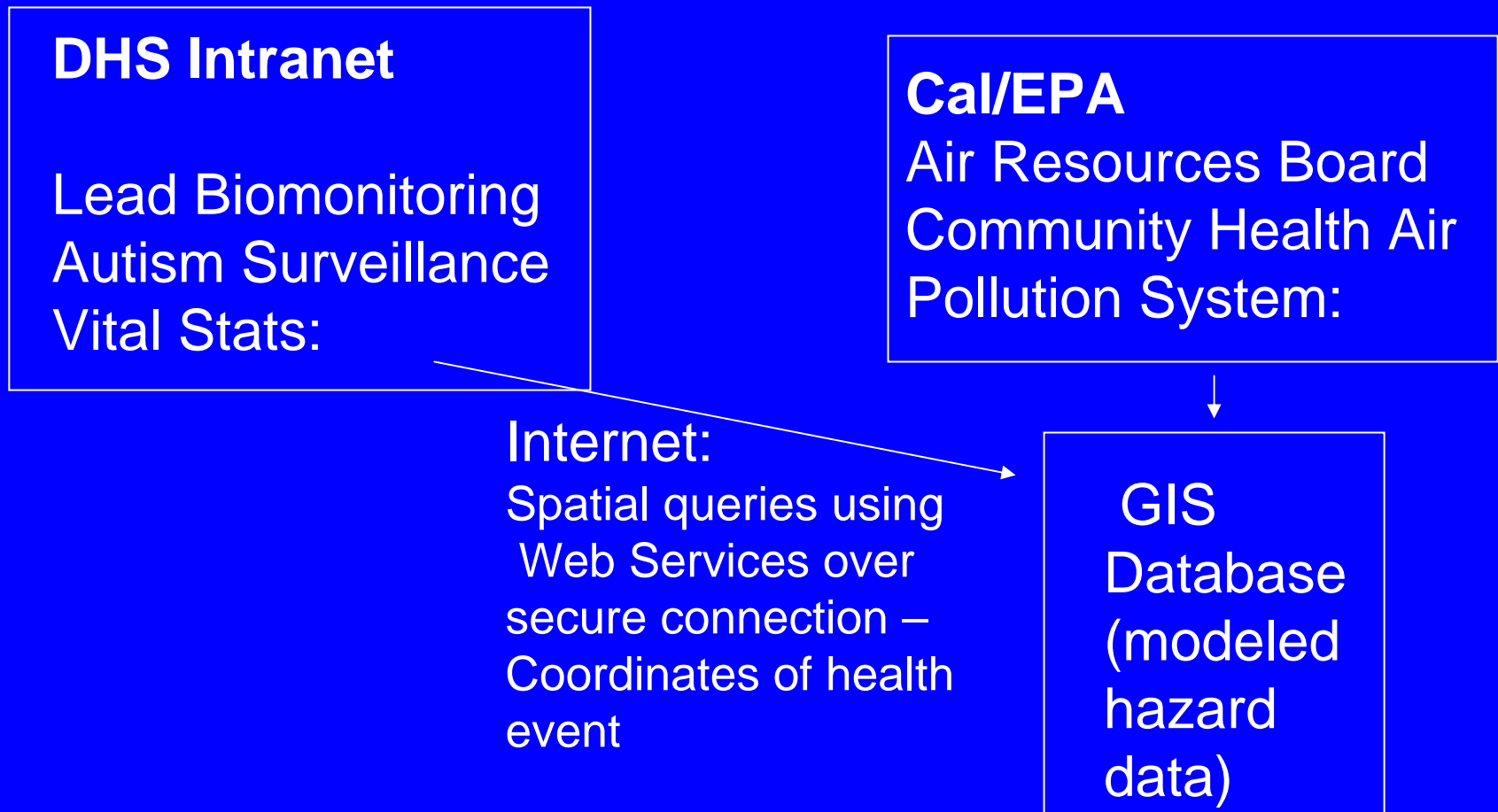
Known biological activities

Potential effects

Potential outcomes

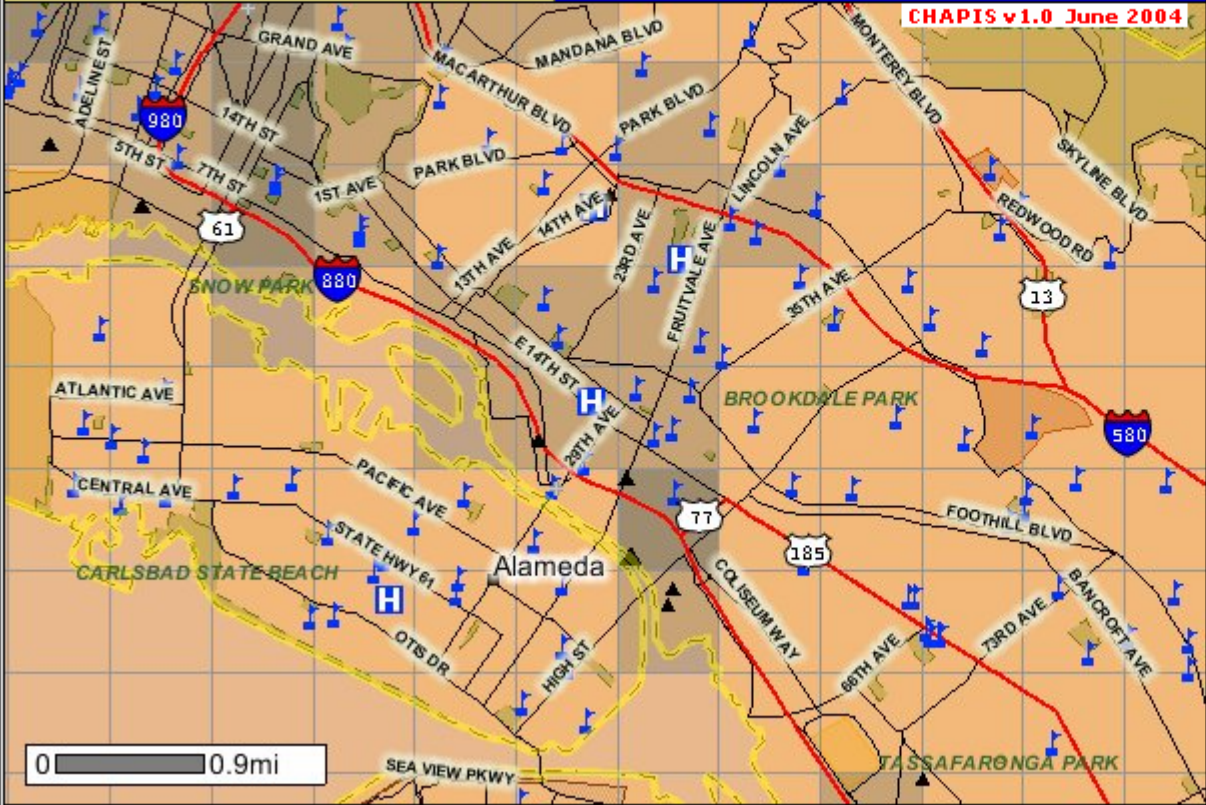


USING WEB SERVICES TO SECURELY INCORPORATE CAL/EPA DATA INTO DHS DISEASE SURVEILLANCE SYSTEMS



Click on the map to **Identify** a feature ?

Navigation
Analysis
Hover Label Area

Map Width: 7.4 miles

Current Settings

Tool Mode: Identify

County: Alameda

Messages

Current grid size: 1 km

Legend / Facilities ?

[Show Full Legend](#)
[Show Layer List](#)

Nitrogen Oxides (NOx)
(Tons/yr.)

- No Value
- 0.0121 - 95.3
- 95.3 - 191
- 191 - 723

[.:Toggle Legend.:](#)

Combined Sources

Mobile, Areawide, and Stationary Totals.

[Gridded Emissions](#)

Analysis of Sources in Map View

Calculate a Summary for all Sources in the Map View

[Calculate Combined Stats](#)
[Calculate Point Stats](#)

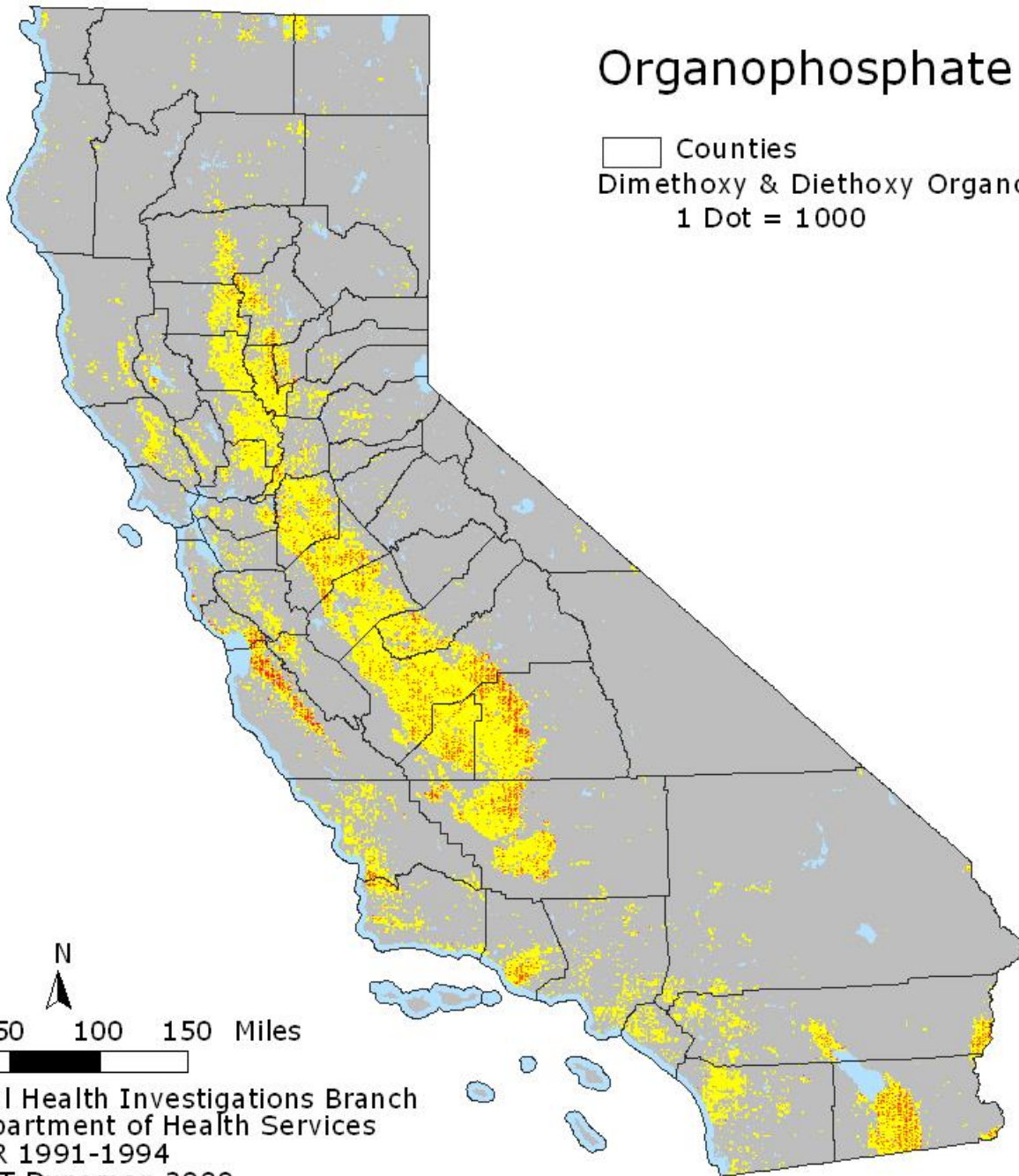
[Print Map](#)
[? Get Help](#)
[← Start Page](#)

Organophosphate Pesticide Use

□ Counties

Dimethoxy & Diethoxy Organophosphate Pesticides (lbs)

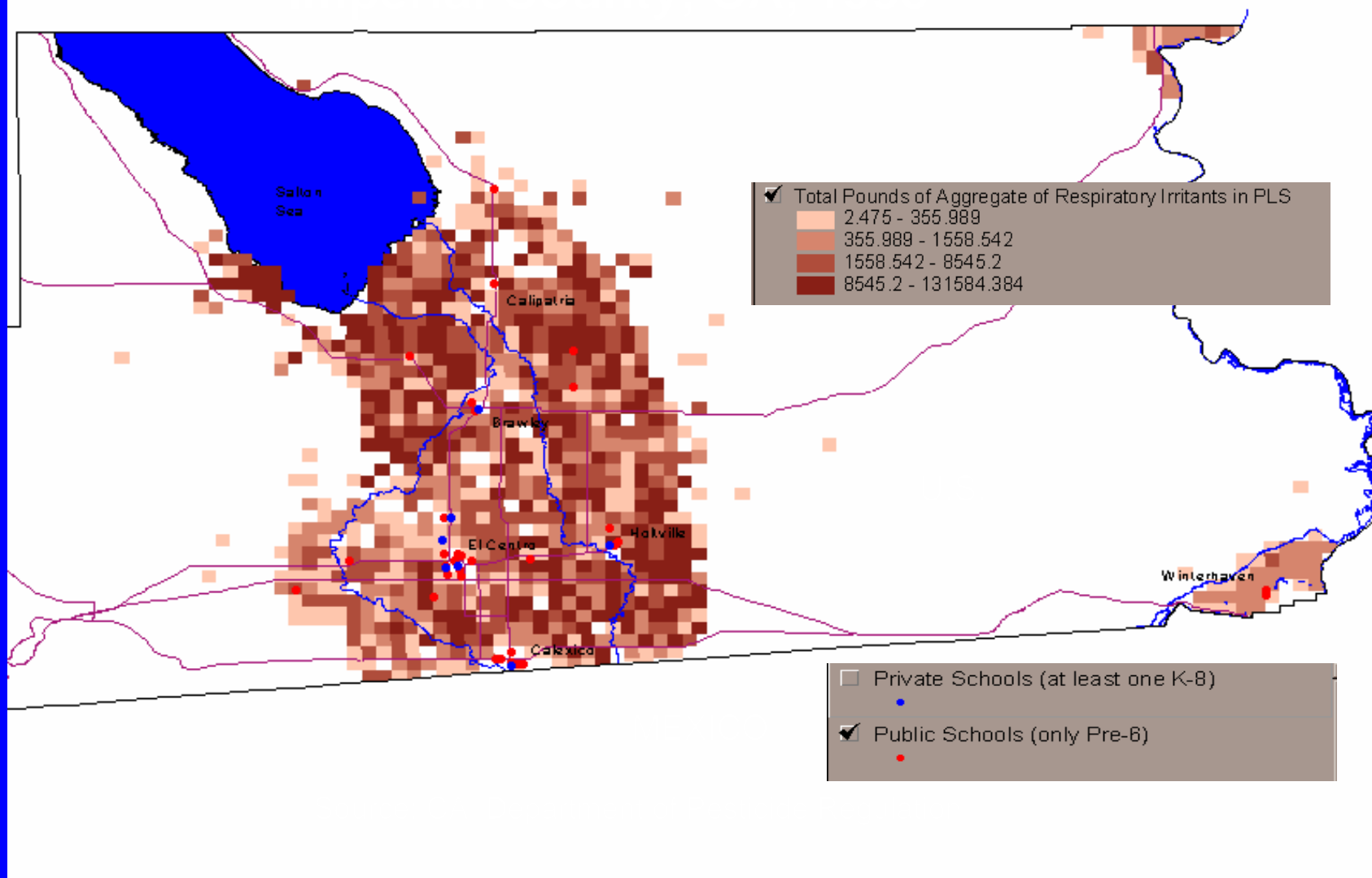
1 Dot = 1000



50 0 50 100 150 Miles

Environmental Health Investigations Branch
California Department of Health Services
Sources: PUR 1991-1994
GDT Dynamap 2000

Distribution of Respiratory Irritant Pesticide Use



Mulberry Elementary School
Imperial County California

Photos from the USGS Digital Ortho
Quadrangle Series, circa 1996
Color is false infrared

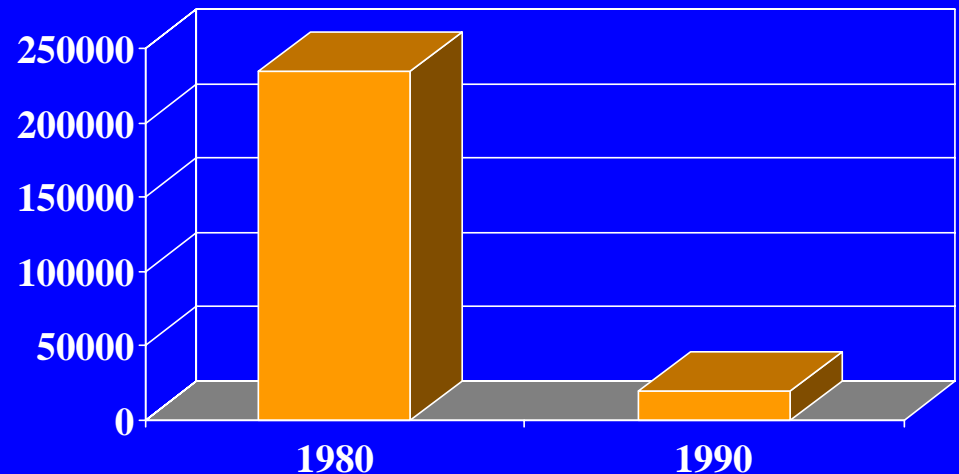
Scale 1:11,5000, 1" = 958'



Tracking cannot survive without well trained env. public health workforce

- Public health program funding decreasing
 - 32 states cut their public health budgets between FY '02-'03
 - \$1.1 billion cut in Function 550 for FY '05
- Workforce is shrinking; moving to private sector
- Inability to fill new positions
- Leadership gap

Estimated Size of Environmental Public Health Workforce in the U.S.



Source: USDHHS, 1988; HRSA, 2000

1 per 1000 0.7 per 10,000

Recommendations For Future

- Need to continue to build capacity to address and be responsive to environmental health issues of local concern.
 - Surveillance data should support actions to protect communities and support evidence-based policies
- IT/Surveillance capabilities of tracking can only be developed with strong collaborations with key partners

Recommendations For Future (cont.)

- Continue emphasis on all areas of env. health gap (i.e. health outcome, exposure, and hazard surveillance), along with data linkage
- Continue to allow states the flexibility in program priorities which address state/local needs and are responsive to constituents. Balance national and state priorities.



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Summary of Program Components

Planning Consortium	Needs Assessment	Technical Assessment	Outreach and Training	Alameda County Pilot Project	Central Valley/South Coast Pilot Project
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In order to involve stakeholders, incorporate needs and issues, and utilize their expertise in planning for an Environmental Health Tracking Network, we have convened a **Planning Consortium** composed of representatives from local agencies, community-based and non-governmental organizations, environmental advocacy groups, the University of California, and state and federal agencies such as US EPA, California Department of Health Services, and Cal/EPA.

The Planning Consortium has met four and has contributed significantly toward planning for an Environmental Health Tracking Network in California; especially toward our understanding of stakeholder perspectives and needs. The consortium is currently facilitating the development of protocols and policies for an Environmental Health Tracking Network in California. Examples include: accountability mechanisms, transparency policies, stakeholder involvement/public participation guidelines, procedures for responding to community concerns/requests, etc.

[Click here for more information and update regarding the Planning Consortium >>](#)

1515 Clay St., Suite 1700
Oakland, CA 94612

email: info@catracking.com
phone: (510) 622-4500
fax: (510) 622-4505

Some documents are available here in Adobe Acrobat Reader format (PDF). To view or print them, you will need the Adobe Acrobat Reader. [Get Acrobat Reader >>](#)

