

Community Action to Promote Healthy Environments: A Community-Academic Partnership to Improve the Physical Environment in Detroit, Michigan*

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**New Zealand Centre for Sustainable
Cities Seminar Series**
Wellington, New Zealand
May 9, 2018

*Funded by NIEHS Grant # RO1ES022616 and the Fred A and Barbara M. Erb Family Foundation
with additional support from NIEHS Grant # P30ES017885, the National Institute of General Medical Sciences, and the University of
Michigan, with acknowledgement to our colleagues in the Detroit Community-Academic Urban Research Center and CAPHE.

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1. University of Michigan School of Public Health
2. Detroiters Working for Environmental Justice
3. University of Michigan School of Medicine
4. Southwest Detroit Environmental Vision
5. Detroit Hispanic Development Corporation
6. Community Health and Social Services Center



Definition of Community-Based Participatory Research (CBPR)

- Community-based participatory research is a partnership approach to research that:
 - equitably involves all partners in all aspects of the research process;
 - enables all partners to contribute their expertise, with shared responsibility and ownership;
 - enhances understanding of a given phenomenon; and
 - integrates the knowledge gained with interventions.

Key Principles of CBPR

1. Recognizes community as a unit of identity
2. Builds on community strengths and resources
3. Promotes collaborative and equitable partnerships



Key Principles of CBPR (continued)

4. Facilitates co-learning and capacity building
5. Balances research and action for mutual benefit of all partners
6. Disseminates findings to all partners and involves them in the dissemination process



The Detroit Community-Academic Urban Research Center (Detroit URC)



A long-standing community-based participatory research partnership in the City of Detroit

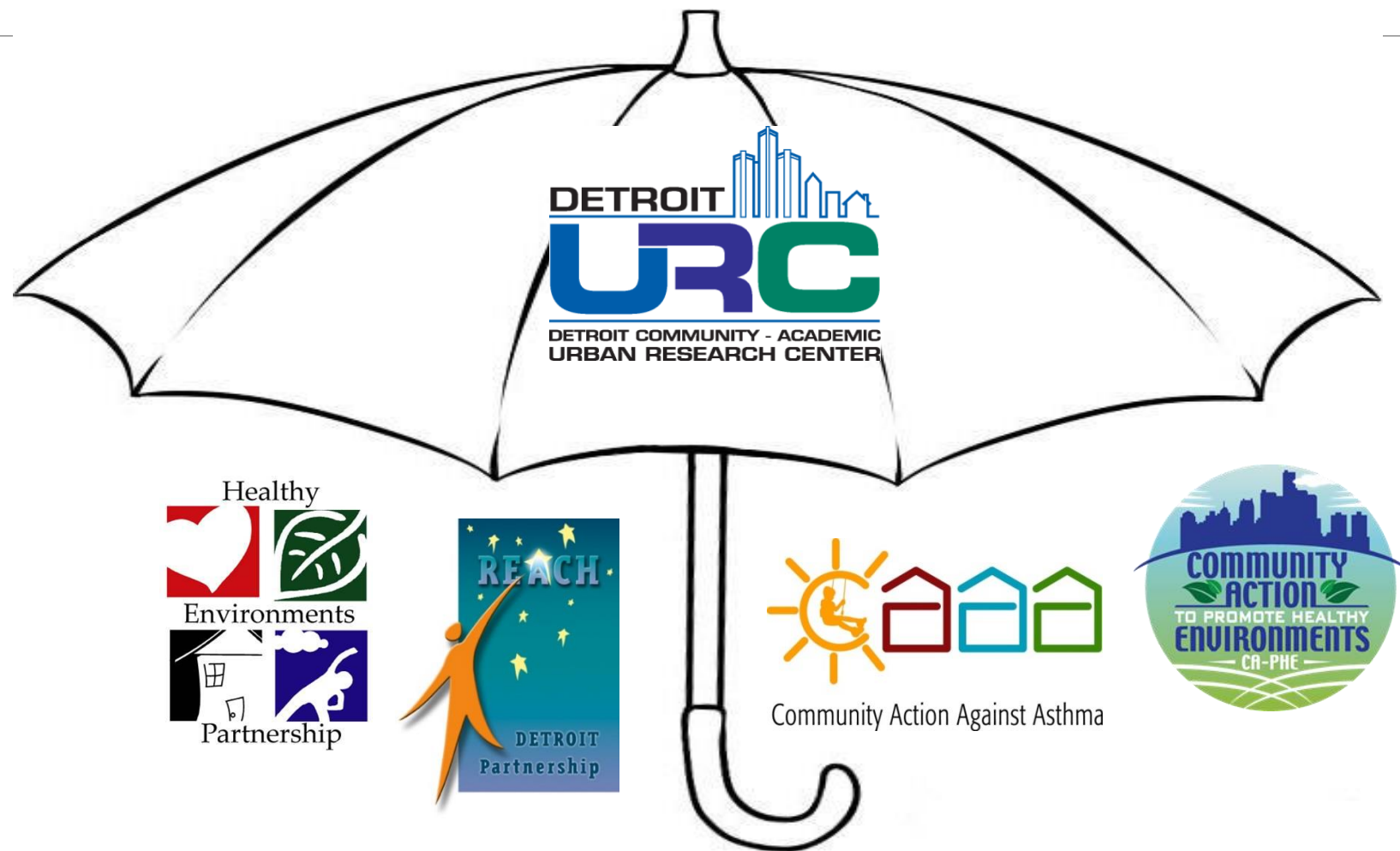
Detroit URC: 23 Years of CBPR Partnership



Detroiters Working for
Environmental Justice
Fostering Clean, Healthy and Safe Communities



Detroit URC and Selected Affiliated CBPR Partnerships





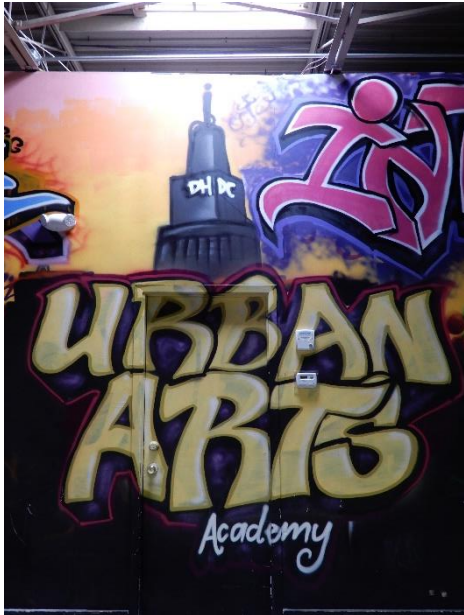
Detroit URC Selected Accomplishments

- Established 10 affiliated CBPR partnerships and implemented over 35 research projects
- Improved health status of intervention participants
- Increased capacity to engage in policy advocacy, resulting in policy change
- Hired over 400 community members for full or part-time positions
- Built new relationships
 - African American and Latino communities
 - linking University and communities

Key Strengths and Resources in Detroit



Key Strengths and Resources in Detroit (cont.)



Key Strengths and Resources in Detroit (cont.)





Community Approaches to Promoting Healthy Environments (CAPHE)

- Builds on three longstanding community-based participatory research (CBPR) partnerships
- Equitable engagement of community and academic partners in all phases of research and action
- Increase knowledge about exposure to air pollution & health effects
- Translate findings into a public health action plan
- Implement innovative policy & practice solutions to reduce pollutant exposure & mitigate adverse health effects
- Evaluates process & impact



CAPHE Partners





Air Quality in Detroit Michigan

Playground next to
Industrial Source in
Delray, Detroit, MI





CAPHE's Overarching Goals

- To develop a multilevel, integrated and scientifically-informed public health action plan designed to reduce adverse effects of air pollution on health
- To promote implementation of components of the plan





Partner Roles & Leadership

Community

- Identify priority action areas
- Identify key opinion & policy leaders
- Develop community & youth leadership
- Organize & coordinate with other environmental efforts

Academic

- Conduct background research
- Map vulnerable communities
- Quantify current health impacts
- Estimate health impacts of selected mitigation strategies

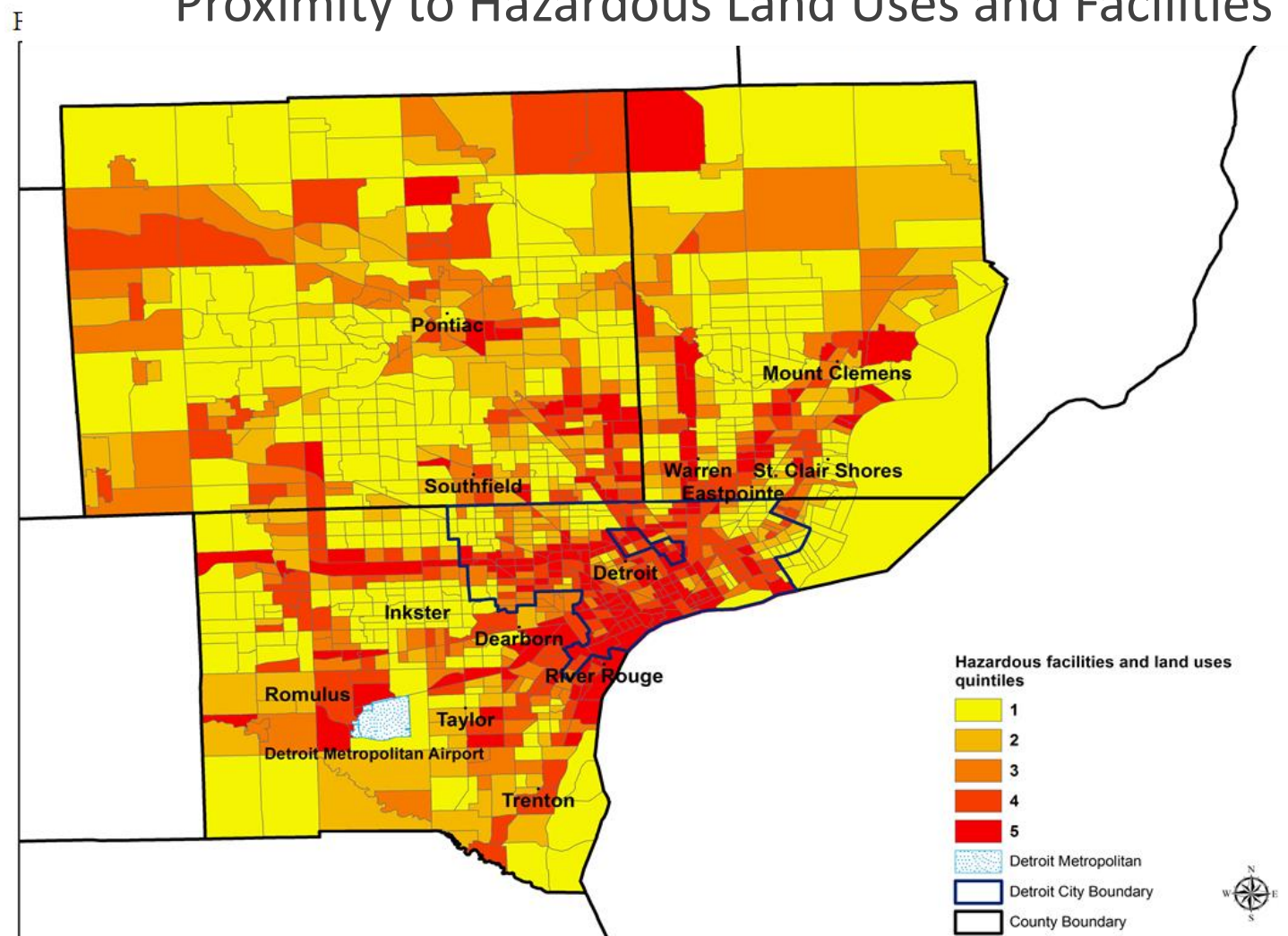
Joint Responsibility

- Identify public health problem: air pollution and health
 - Identify key priority areas for new research
- Inform strategies for compiling & synthesizing information for PHAP process
 - Define components of the public health action plan
 - Implement public health action plan components
 - Identify funding for continued action on the plan



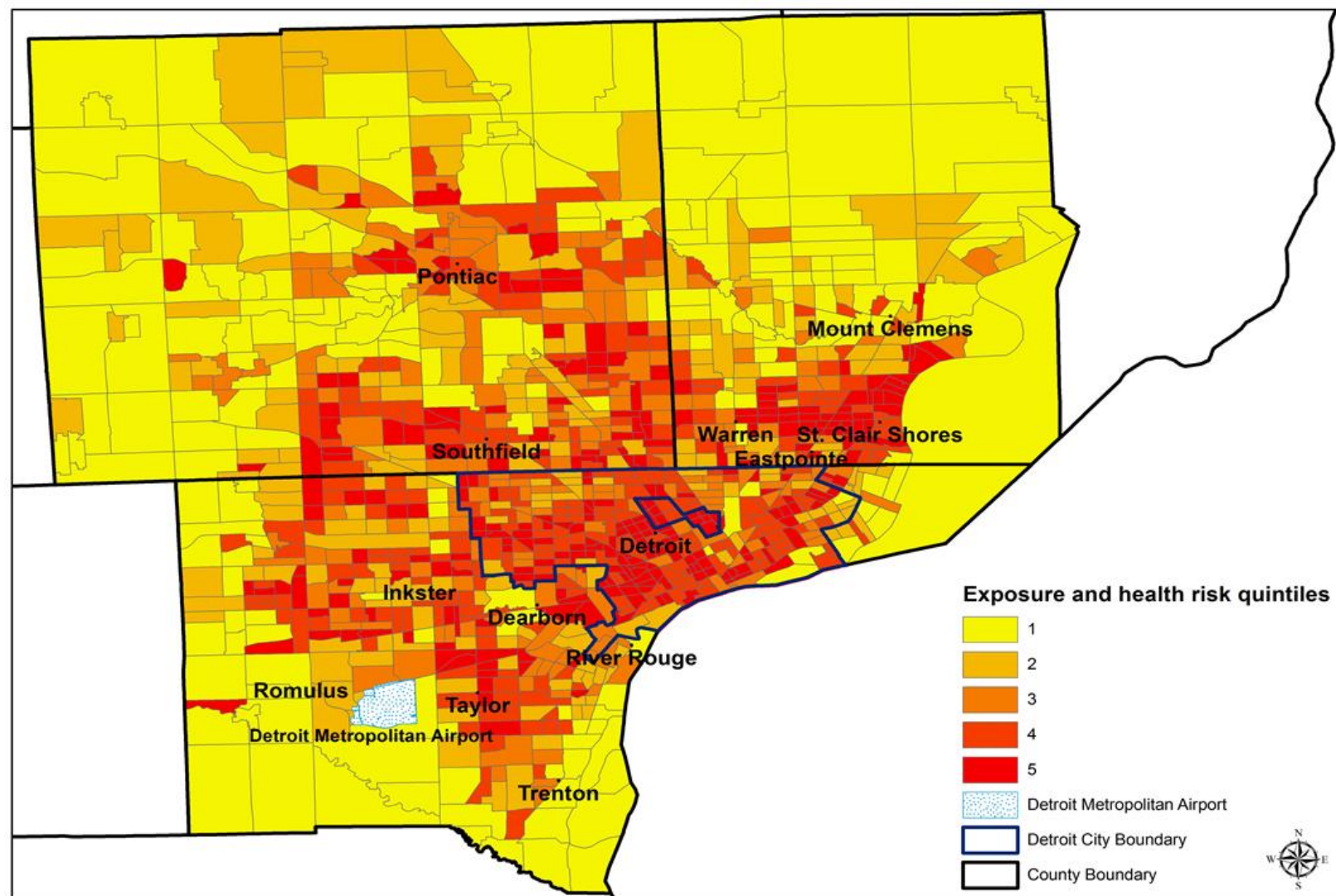
- Hazardous Facilities
- Hazardous Land Uses

Proximity to Hazardous Land Uses and Facilities



Cumulative impact polygons (CI) include: residential areas, child care facilities, health care facilities, schools and playgrounds. Hazardous Facilities and Land Uses include: Childcare, Healthcare, Schools K-12, Urban Playgrounds, TRI, Chrome-platers, Hazardous Waste sites, Railroad tracks, Ports, Airports, Refineries, Intermodal Distribution and Main roads.

Environmental Exposures and Health Risks



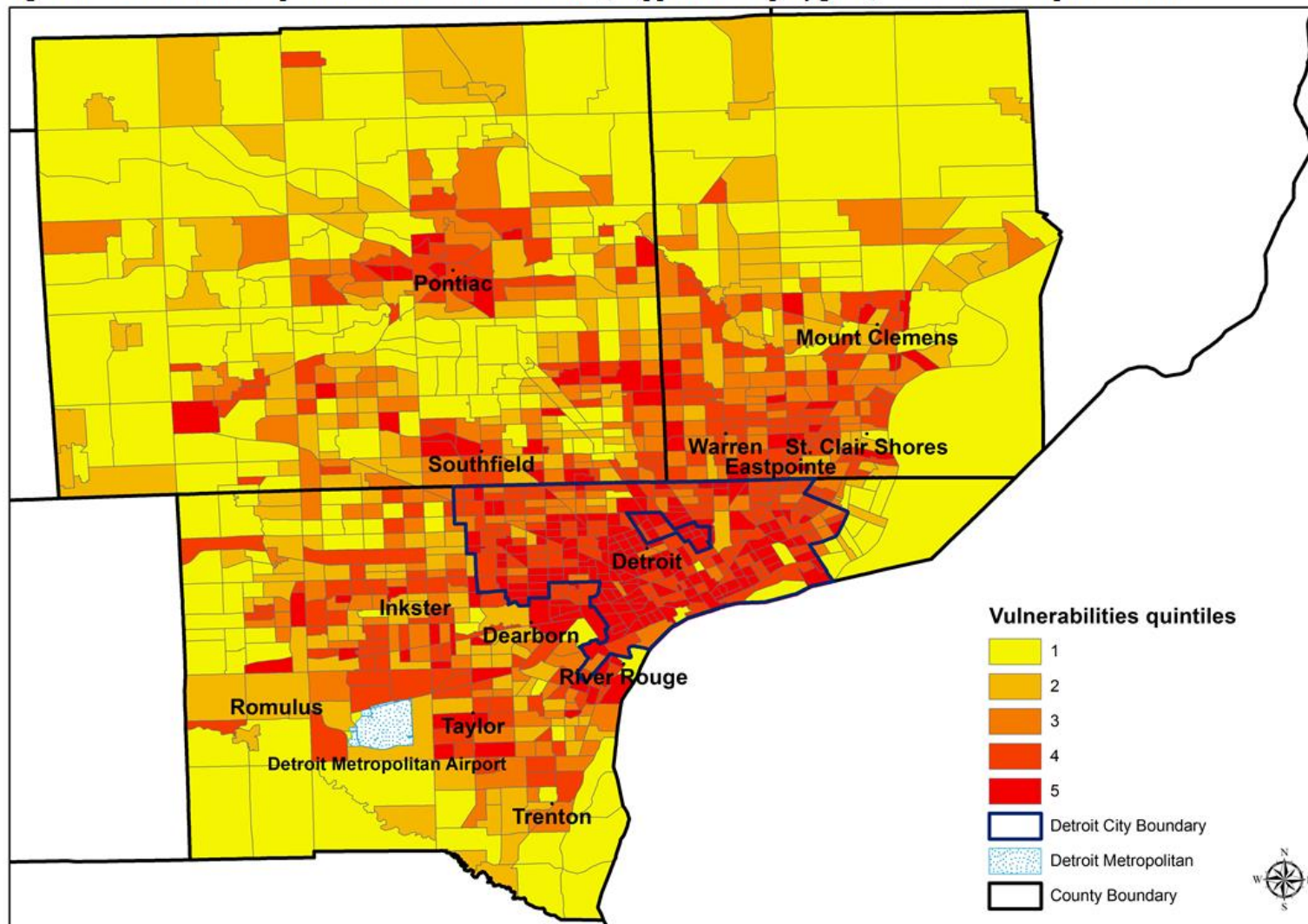
Cumulative impact polygons (CI) include: residential areas, child care facilities, health care facilities, schools and playgrounds.
Exposure and Health risk include: 2011 NATA estimates of respiratory risk, cancer risk and diesel PM (non-cancer) concentration.

AIM 2: Identifying vulnerable communities

Schulz, Mentz, Sampson et al, 2016. Race and the distribution of social and physical environmental risk. DuBois Review, In Press



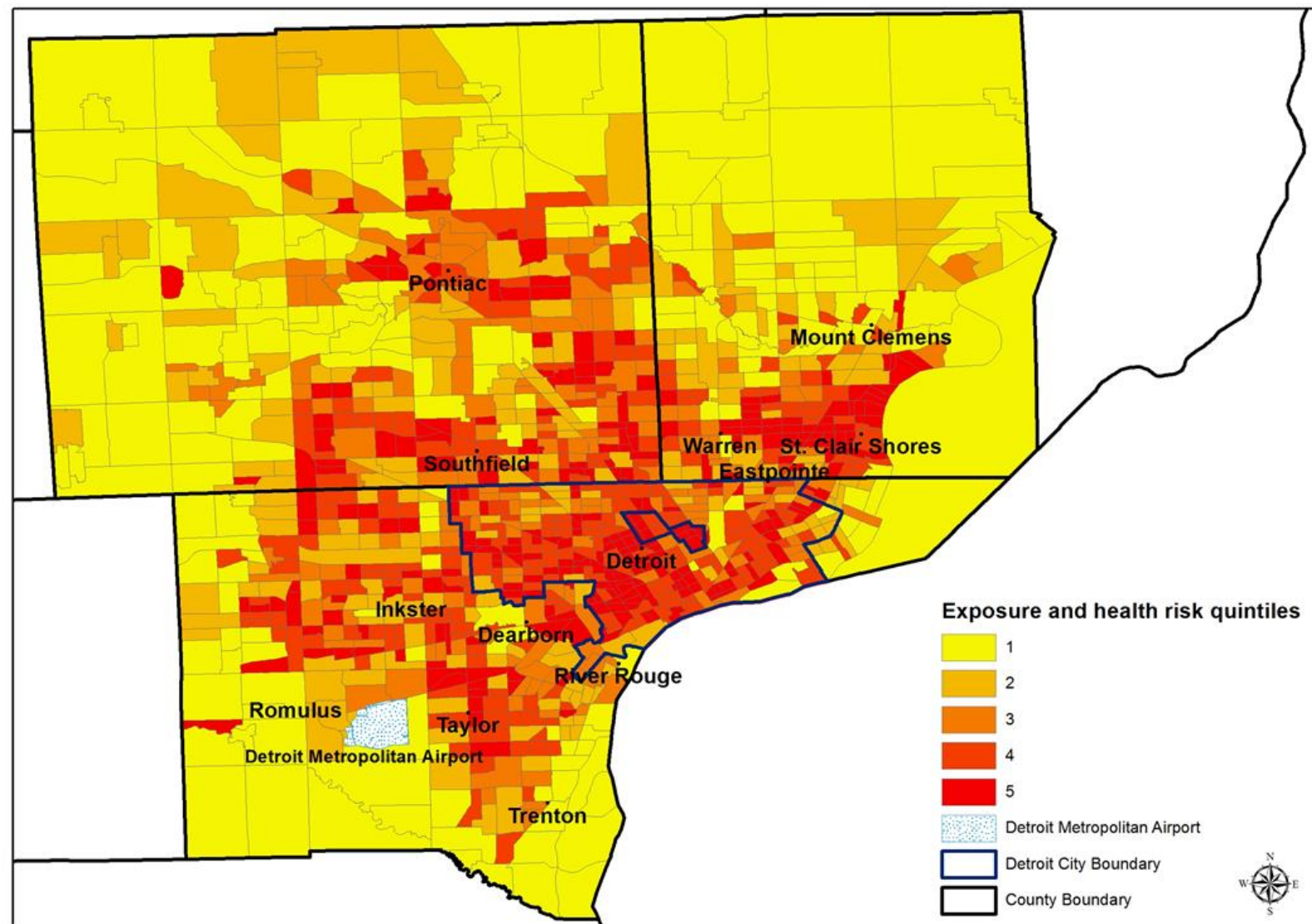
Figure 4: Vulnerabilities quintile score at the tract level (mapped on CI polygons)—Detroit Metropolitan Area



Cumulative impact polygons (CI) include: residential areas, child care facilities, health care facilities, schools and playgrounds. Vulnerabilities includes: % below the national poverty level, % renters, median house value (reverse coded), % > age 24 with < high school completion, children age < 5, adults age >= 60, and linguistic isolation.



Cumulative Risk



Cumulative impact polygons (CI) include: residential areas, child care facilities, health care facilities, schools and playgrounds.
 Exposure and Health risk include: 2011 NATA estimates of respiratory risk, cancer risk and diesel PM (non-cancer) concentration.



Quantified Health Impacts

- **Each year** in the Detroit Metropolitan Area, air pollution is responsible for:
 - 690 deaths
 - 1800 hospitalizations and emergency room visits
 - Thousands of missed school and work days

Total monetized cost of \$6.9 billion per year

These effects occur disproportionately in Detroit and surrounding areas with high concentrations of poverty, African American and Latino residents



CAPHE Resource Manual

Scientific evidence base
used throughout the CAPHE Public Health Action Planning
process to discuss and identify key air pollution mitigation
strategies with community organizations, community members,
and City, State and Federal representatives.



Phase 2: Engaging Broader Stakeholders & Refining the Recommendations





CAPHE Public Health Action Plan: Evidence Based Recommendations



- Point source controls
- Enhanced compliance & enforcement
- Diesel engine retrofits
- Anti-idling campaign
- Transportation control measures
- Buffers & barriers
- Indoor air filters
- Monitoring
- Renewable Energy

Available: <http://caphedetroit.sph.umich.edu/>

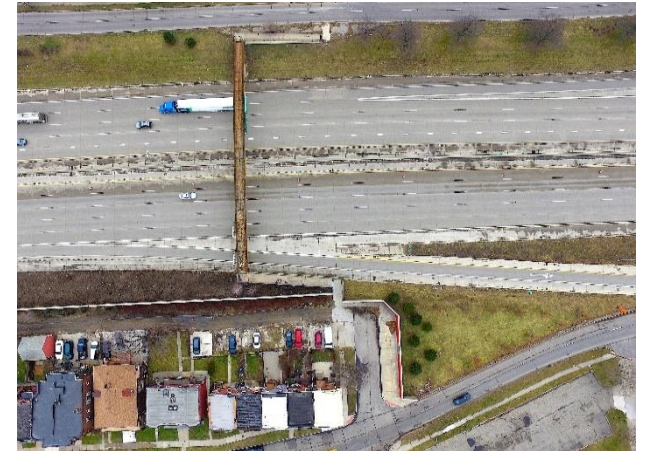




Implementation – Prioritized Strategies



Filters in Schools
Vegetative Buffers
Renewable Energy
Health Impact Assessments
Monitoring





Working with Policy Makers – Press Conference & Policy Advocacy





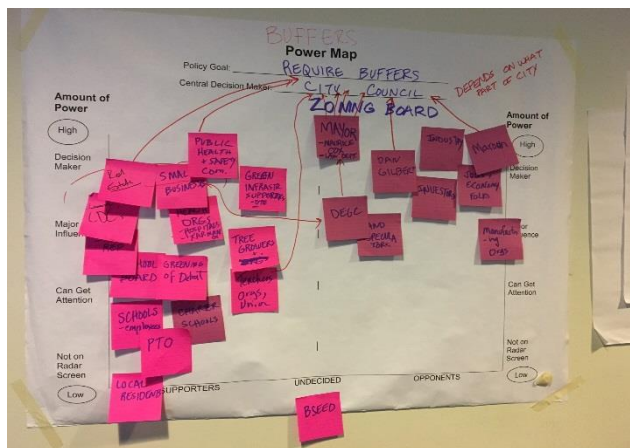
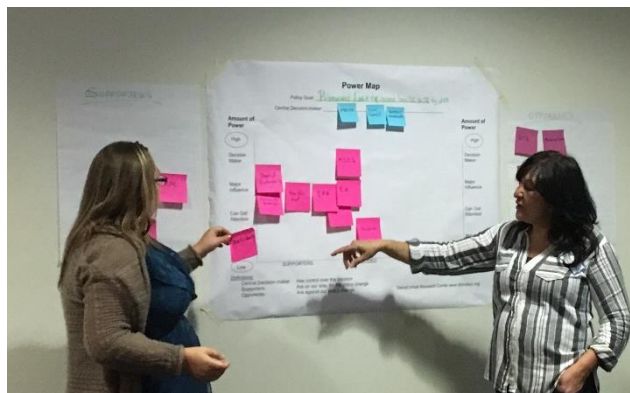
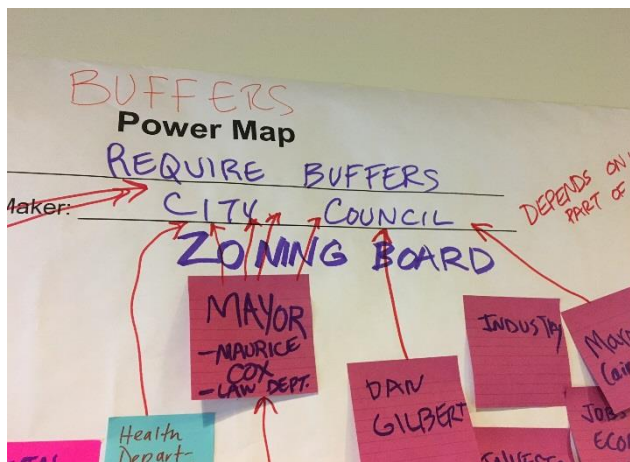
Working with Policy Makers – Legislative Luncheon







Policy Advocacy Trainings





Mini Grants to
Support Action by
Local Groups to
Improve Air Quality





Formative Evaluation

Process Evaluation

- Capacity in working together
- Group process dynamics/Collaborative engagement
- Creation of public health action plan
- Development of implementation strategy

Impact Evaluation

- Increased awareness of strategies to reduce air pollution among residents and decision makers
- Implementation of public health action plan components
- Mini-Grant actions/accomplishments
- Policy education trainings

Benefits of Using a CBPR Approach

- Enhances relevance and use of data
- Enhances quality and validity of research



Benefits of Using a CBPR Approach (cont.)

- Strengthens intervention design and implementation
 - Recruitment
 - Retention
- Knowledge gained and interventions benefit the community



Benefits of Using a CBPR Approach (cont.)

- Provides resources for communities involved
- Joins partners with diverse expertise to address complex public health problems
- Increases trust and bridges cultural gaps between partners
- Has potential to translate research findings to guide development of further interventions and policy change



Concluding Remarks and Questions



www.detroitURC.org