

# Community-Driven Health Impact Assessments

An Example from Detroit's  
Gordie Howe International Bridge Project



# The Team: Today's Presenters

- Lauren Fink, Detroit Health Department
- Dr. Natalie Sampson, University of Michigan – Dearborn
- Simone Sagovac, Southwest Detroit Community Benefits Coalition



# The Rest of the Report Team

- Angela G. Reyes, Detroit Hispanic Development Corporation
- Amy Schulz, University of Michigan School of Public Health
- Kristina Rice, University of Michigan School of Public Health
- Graciela Mentz, University of Michigan Anesthesiology Department
- Ricardo de Majo, University of Michigan School of Public Health
- Bridget Vial, Detroit Hispanic Development Corporation, 2016-2017 and 2018 Interview Teams
- Cindy Gamboa, Detroit Hispanic Development Corporation, and 2018 Interview Team



# Interviewing Team 2016-2017

- Adriana Zuniga
- Candida Leon-Torres
- Janine Hussein
- Lauren Thomas
- Maria Avila
- Marina Chavez
- Marycruz Gutierrez
- Nicole Bowman
- Ramon Ramirez
- Rita Ramirez
- Rosalinda Sanchez
- Sierra Ayers
- Teia McGahey

# Interviewing Team 2018

- Alejandra Enriquez
- Brenda Quintero
- Claudia Enriquez
- Cathy Gamboa
- Candida Leon-Torres
- Dominique Leon
- Holly Wood
- Marina Chavez
- Valeria Cossyleon



# What is a Health Impact Assessment?

- An evidence-based tool used to influence decisions on policies, plans, and projects before they are finalized to create more equitable, healthier communities.

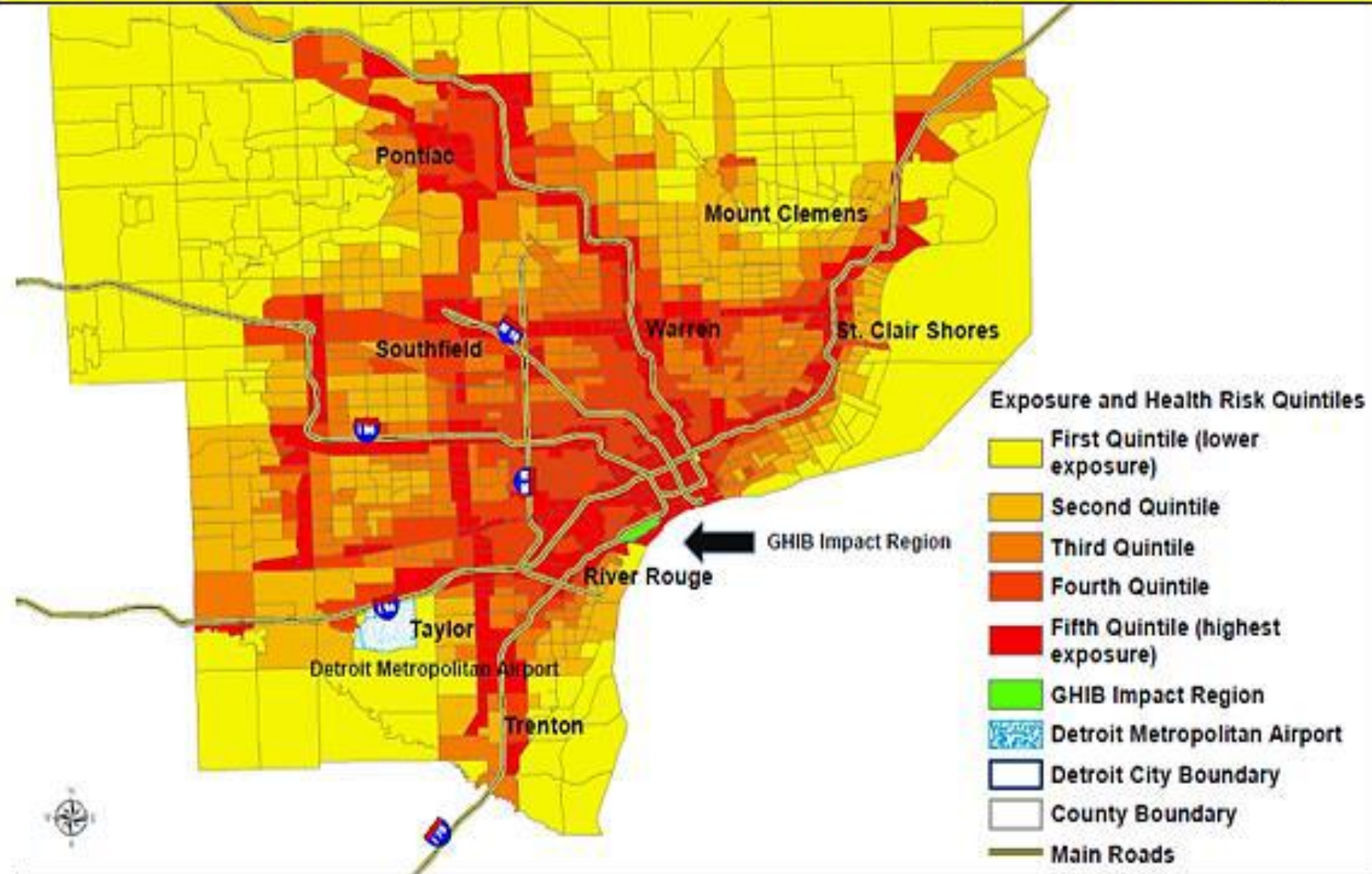
# Background

Gordie Howe International Bridge (GHIB)  
Health Impact Assessment (HIA)



# Cumulative Impacts

**Figure 2: Diesel Particulate Matter (PM) exposure, cancer and respiratory risk attributable to air pollution in the Detroit Metropolitan Area (Schulz et al. 2016)**



**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.**

Schulz, A., Mentz, G., Sampson, N., Ward, M., Anderson, R., deMajo, R., Israel, B., Lewis, T., Wilkins, D. (2016) Social and physical environments and the distribution of risk: A case example from Detroit. *DuBois Review*, 13(2), 285-304.



# A Decade of Organizing

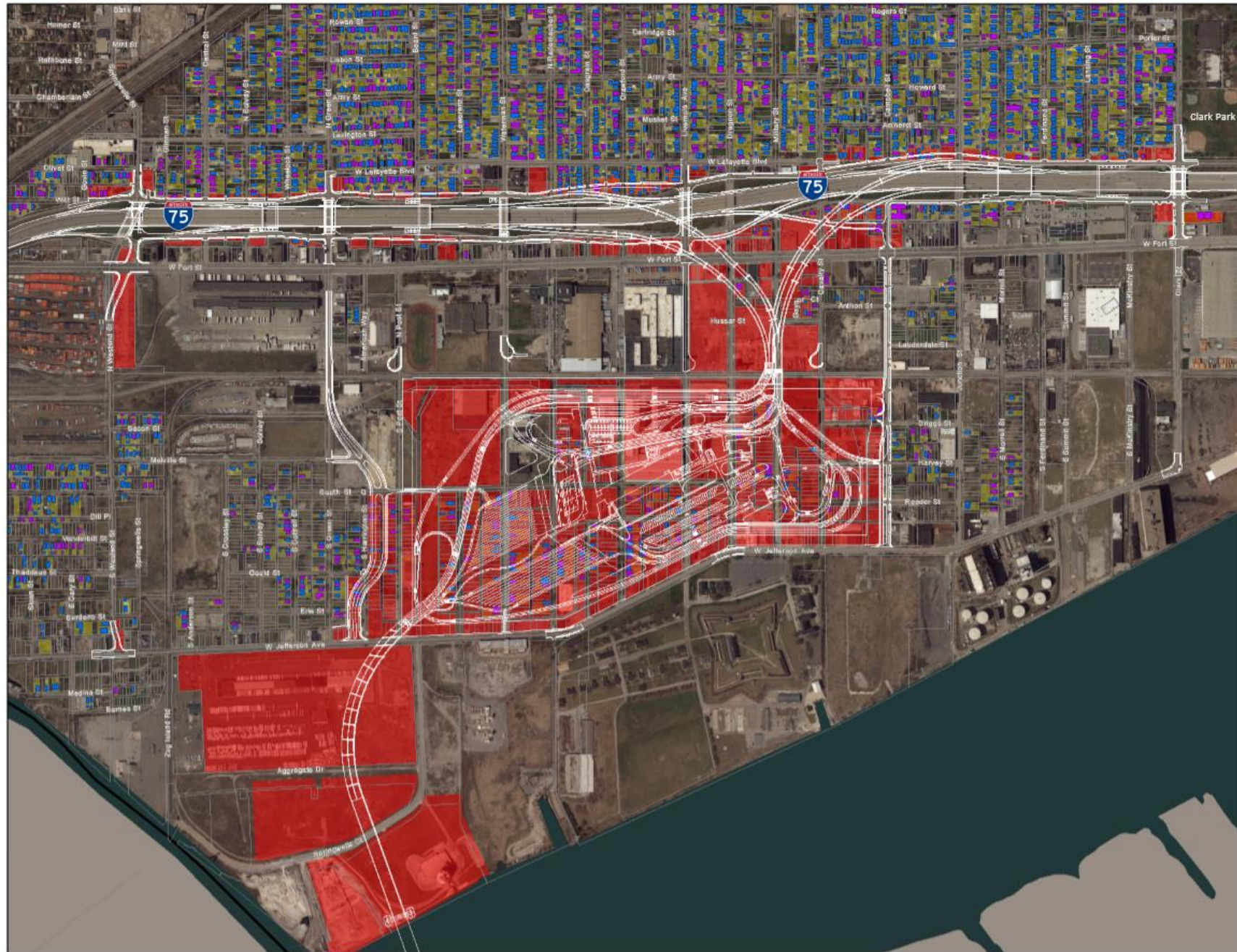


Thomasenia Weston speaks at a press conference on Saturday, March 16, 2019. (Photo: Max Ortiz, The Detroit News)



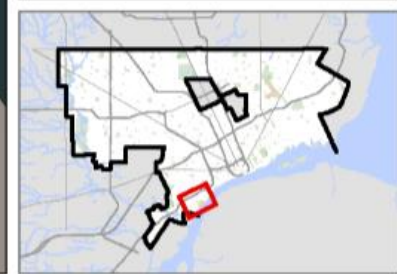
Khloe Johnson holds a sign. (Photo: Max Ortiz, The Detroit News)





# Gordie Howe International Bridge Residential Ownership

- MDOT Buyout Parcels
- Residential Structure
- Residential Structure Owner Type**
  - Landlord
  - Owner Occupant



# The Role of City Government



- Detroit Health Department charged with managing three health-related community benefits
  - Stationary Air Quality Monitoring
  - Mobile Air Quality Monitoring
  - Health Impact Assessment
- Bridging Neighborhoods Program created to manage Home Swap and home retrofit benefits

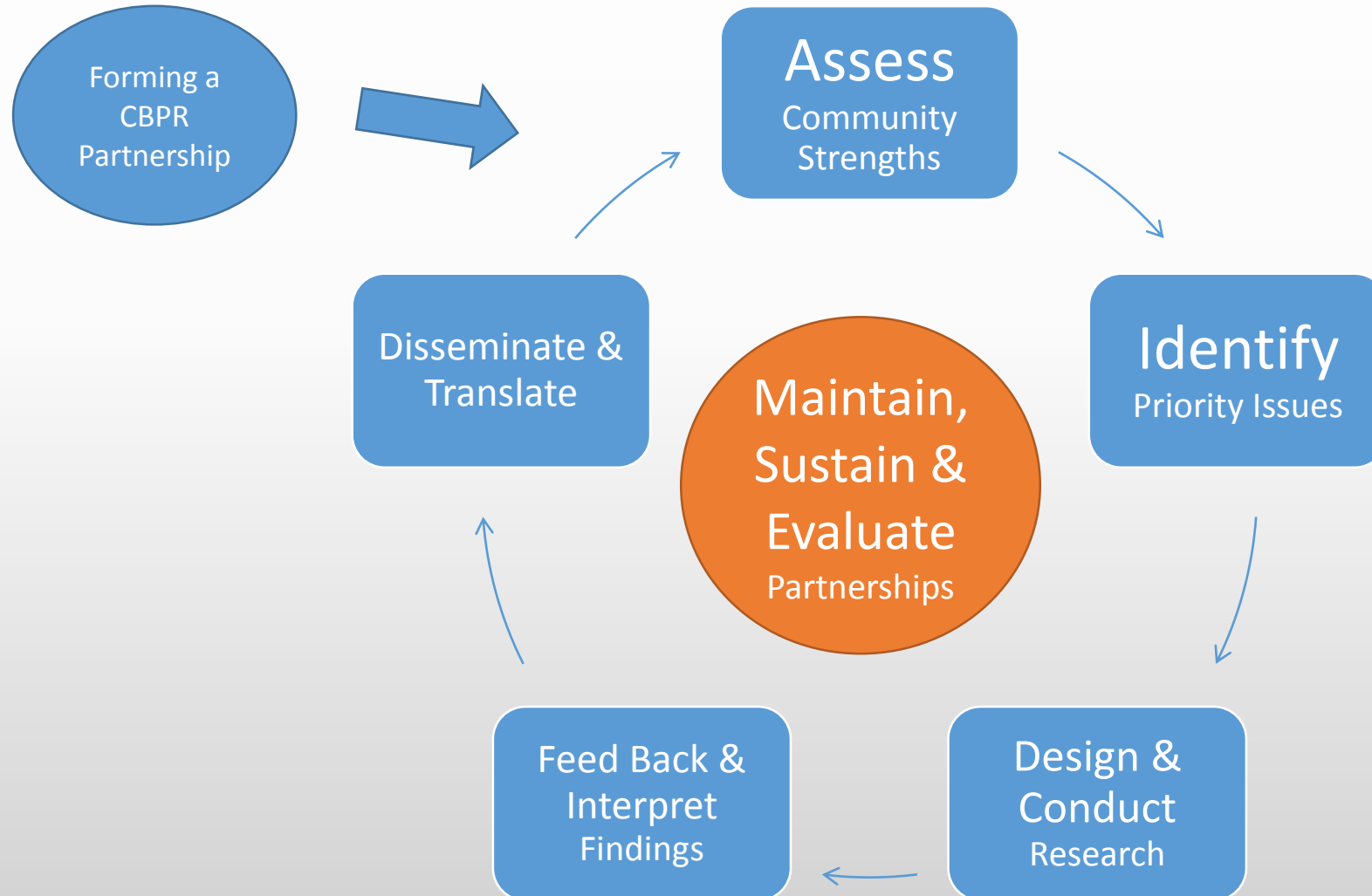
# Timeline: GHIB Air Quality Monitoring and Health Impact Assessment (HIA)







# The Role of Academic Partners: Community-based Participatory Research





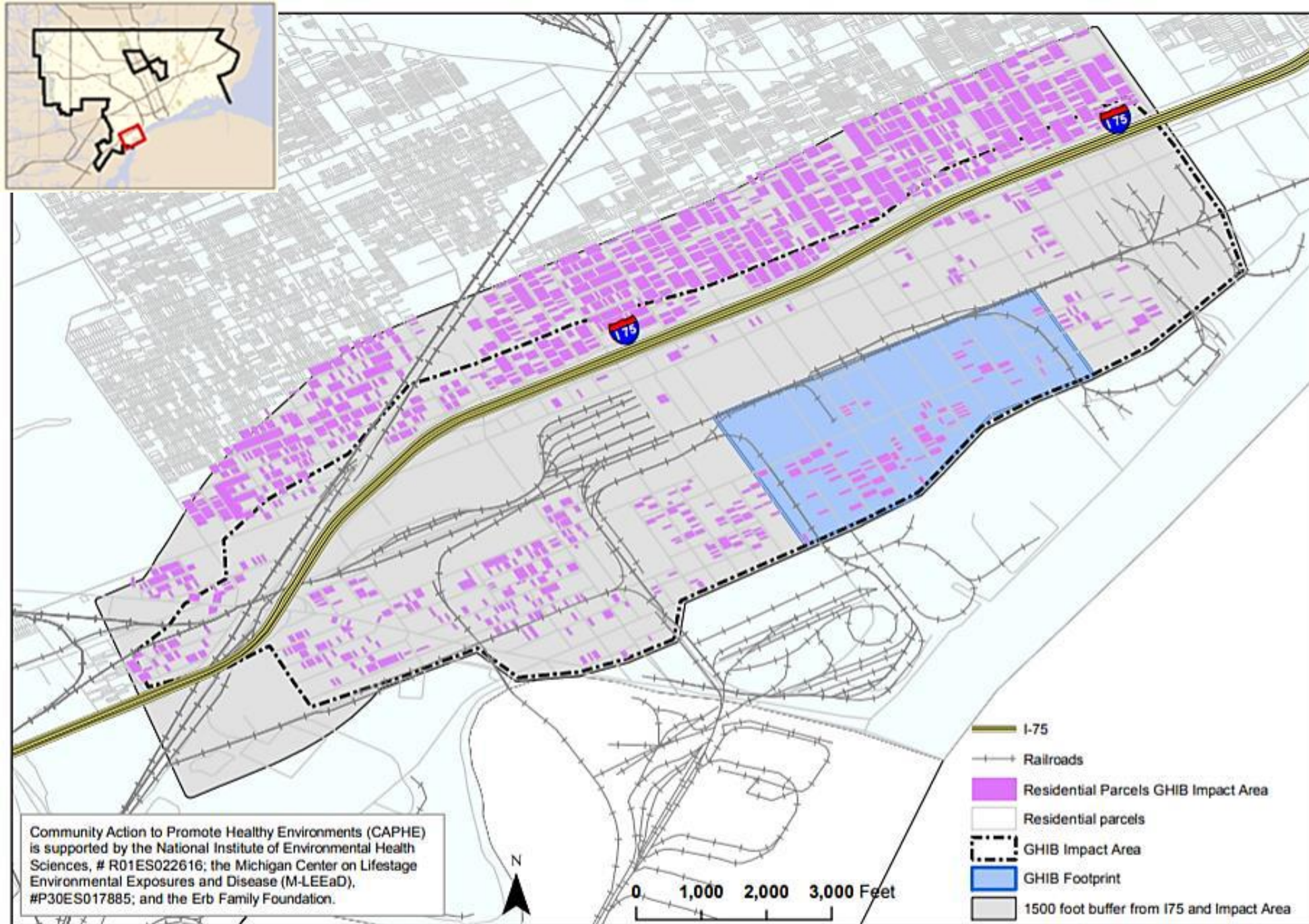
# The Essential Role



# of Community

# Methods





## Definitions:

- Footprint
- Impact Area
- Buffer Area

# Data Collection (2016-2017)

- All residents in the study area were invited to participate
- Respondents in 302 households, roughly one in three eligible households, completed the 100-item survey

# Data Collection (2018)

- Two-stage stratified random sample expanded to include a larger impact area
- Slight improvements to survey instrument and protocols
- Approximately 10% overlap with respondents from the 2016-2017 survey (to address potential confounding)

# Data Collection

- Two surveys (2016-2017 and 2018) can be treated as two cross-sectional samples done in different spatial areas at two time points with 10% overlap



# Selected Findings

# Demographic characteristics of survey respondents, household members, and census block group

		Survey respondents (2016-2018) (n=435) (A)	American Community Survey adults 18 and older (n=11,320) (B)	p-value (A) vs (B)	Survey household members (n=1629) (C)	American Community Survey all household residents (n=16,382) (D)	p-value (C) vs (D)	p-value (A) vs (D)
Age <sup>1</sup>	Age 4 and younger			0.4343	9.1	9.9	0.084	
	Age 5-17				27.9	21		
	Age 18-64	85.9	87.2		56	60.3		
	Age 65 and older	14.1	12.8		7.1	8.8		
Gender <sup>2</sup>	Female	68.1	50.5	<0.001	na	50.7		
	Male	32	49.5			49.3		
Education <sup>3</sup>	Less than High School Graduation	48.7	n.a.		na	46.2		0.464
	High School Graduation	28.9				30.6		
	More than High School Graduation	22.4				23.3		

<sup>1</sup>. All survey respondents were aged 18 and older (n=432): Household members were aged 0-65+ (n=16,382)

<sup>2</sup>. Gender is available for survey respondents only in 2018, thus not included in statistical comparisons for all household members

<sup>3</sup>. ACS data for education includes those aged 25 and older, thus this comparison includes only survey respondents aged 25 and older (n=415)



**77%** of 2018  
respondents identified  
as Hispanic or Latinx



# 70%

felt their  
neighborhood was  
a good place to live







**73%** had  
others they  
could turn to if  
they needed  
help around the  
house

# 66%

Indicated that outdoor air quality was a top concern.



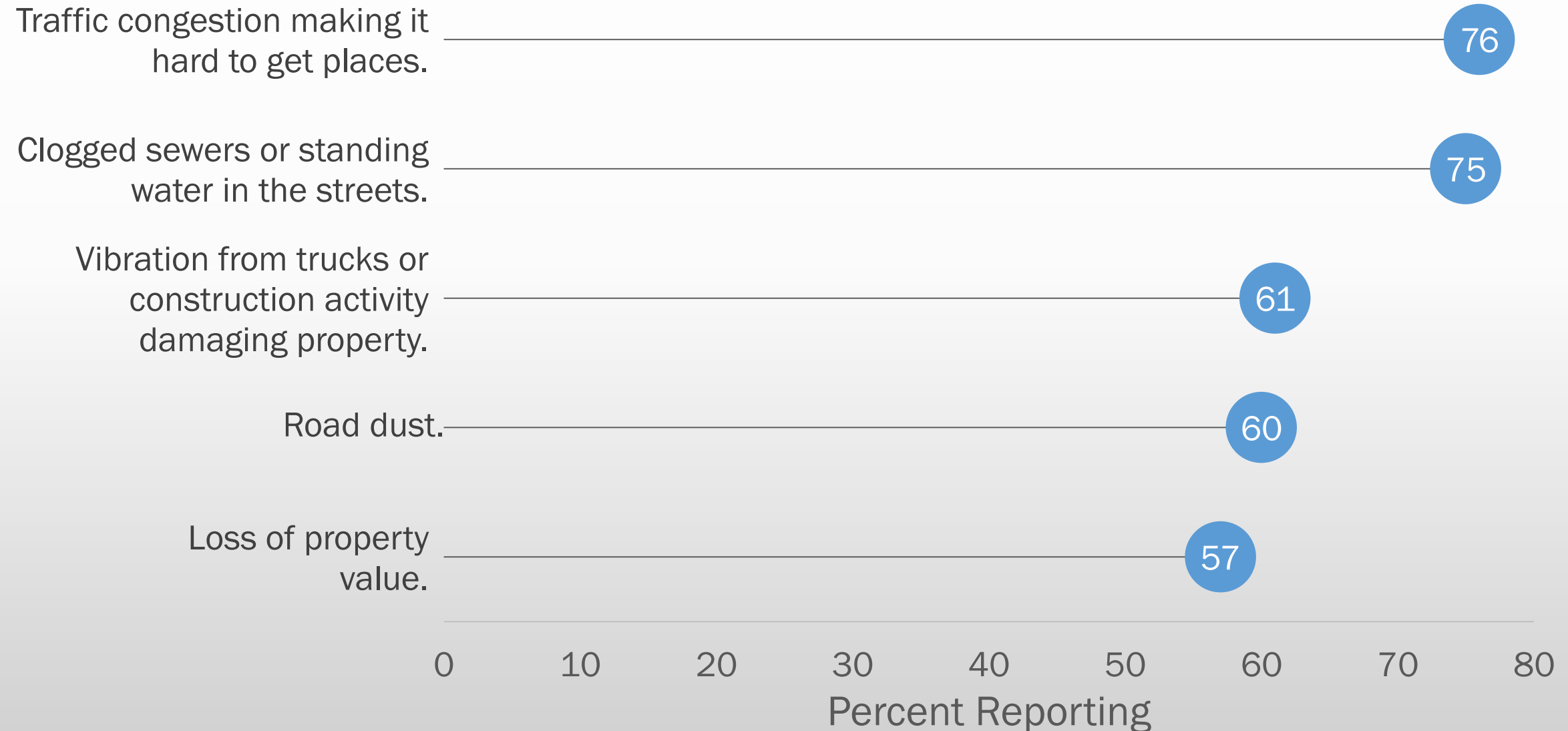




**45%**

indicated that  
noise was a top  
concern

# Resident concerns



## Intention to move by residents in impact or buffer areas of GHIB (weighted)

Plan to move	Living in impact area (n=224)	Living in buffer area (n=211)	Statistical test of difference <sup>1</sup>
Within one year	8.6%	5.3%	0.01
Between 1-5 years	17.7%	10.4%	
More than 5 years	5.9%	4.7%	
Not planning to move	57.8%	73.6%	

<sup>1</sup> p-value corresponds to test of independent proportions - Chisquare test

# Findings regarding young children

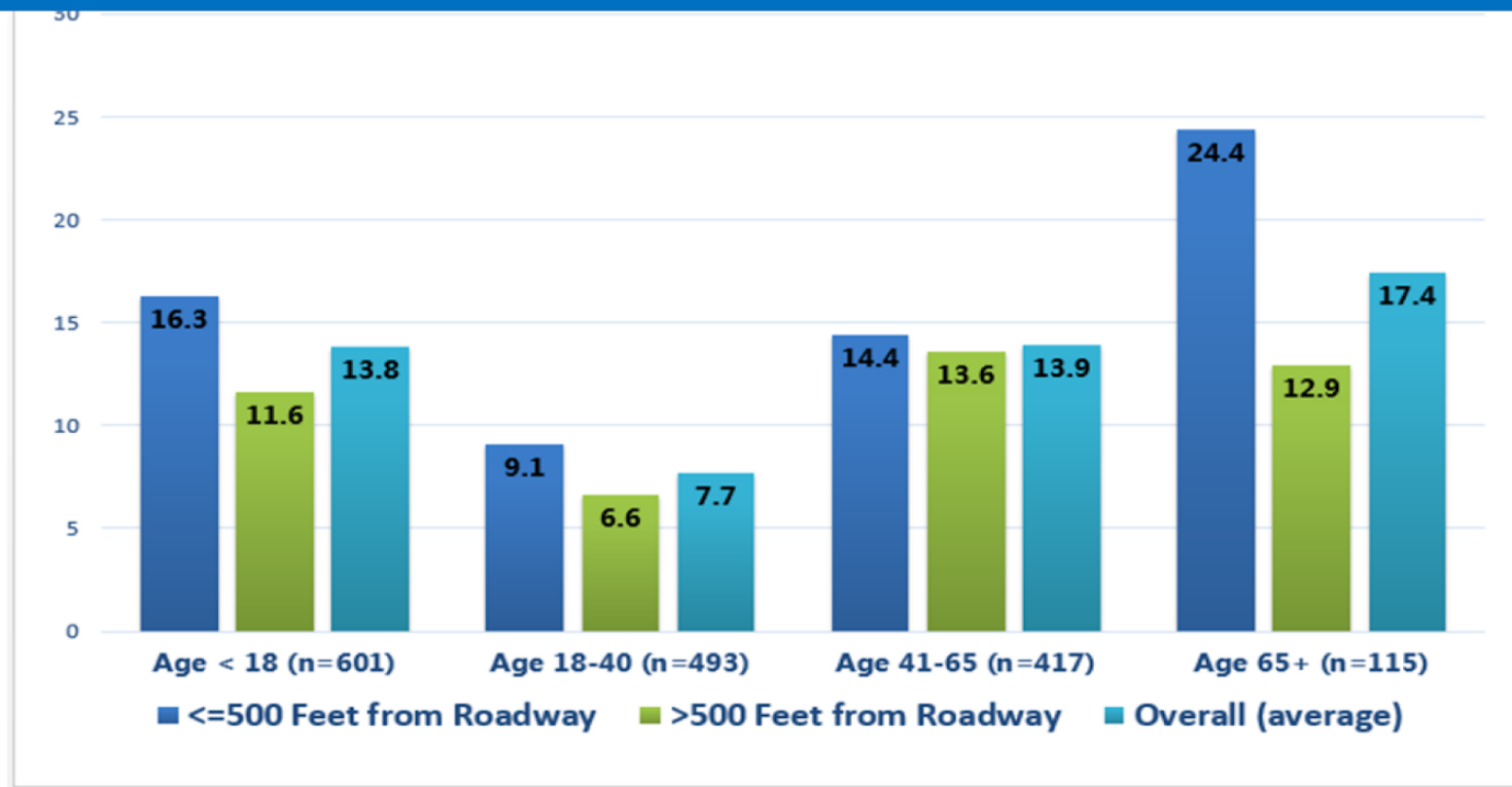
This residential area is home to many families, with among the highest proportions of children under the age of 5 in Detroit.

Health conditions reported for children (n=148) include:

- Allergies affecting breathing (10.9%)
- Asthma (7.4%)

# Self-reported asthma was more common near heavily trafficked roadways

Percent of household members in the baseline HIA survey reported to have asthma by age and distance from I-75 and trucking routes



# Recommendations

- Reduce emissions
  - Reduce idling
  - Increase compliance with air quality standards
  - Utilize clean fuels
  - Expand retrofitting



# Recommendations

- Reduce emissions
  - Reduce idling
  - Increase compliance with air quality standards
  - Utilize clean fuels
  - Expand retrofitting
- Reduce exposures
  - Move truck routes
  - Require spatial buffers
  - Install vegetative buffers
  - Extend filter programming

# Resident voices, survey, and existing evidence informed recommendations

*“Different routes for trucks, time limits for when trucks go down side streets”*

*“More trees, buffers, parks for the environment”*

*“Provide air filters for the interior of the home because my daughter has asthma”*

*-Survey participants*

# Collaborative HIA Process: Three Views

- Opportunities & Challenges from the Health Department Perspective



# Collaborative HIA Process: Three Views

- Opportunities & Challenges from the Community Perspective





# Collaborative HIA Process: Three Views

- Opportunities & Challenges from the Academic Perspective



# Three Planned HIAs: Next Steps



Pre-Construction/Baseline



During Construction



During Operation

# HIA as a tool for Health in All Policies

## Health in All Policies



“If successful programs are to be developed to prevent disease and improve health, attention must be given not only to the behavior of individuals, but also to the environmental context within which people live.”

- Institute of Medicine

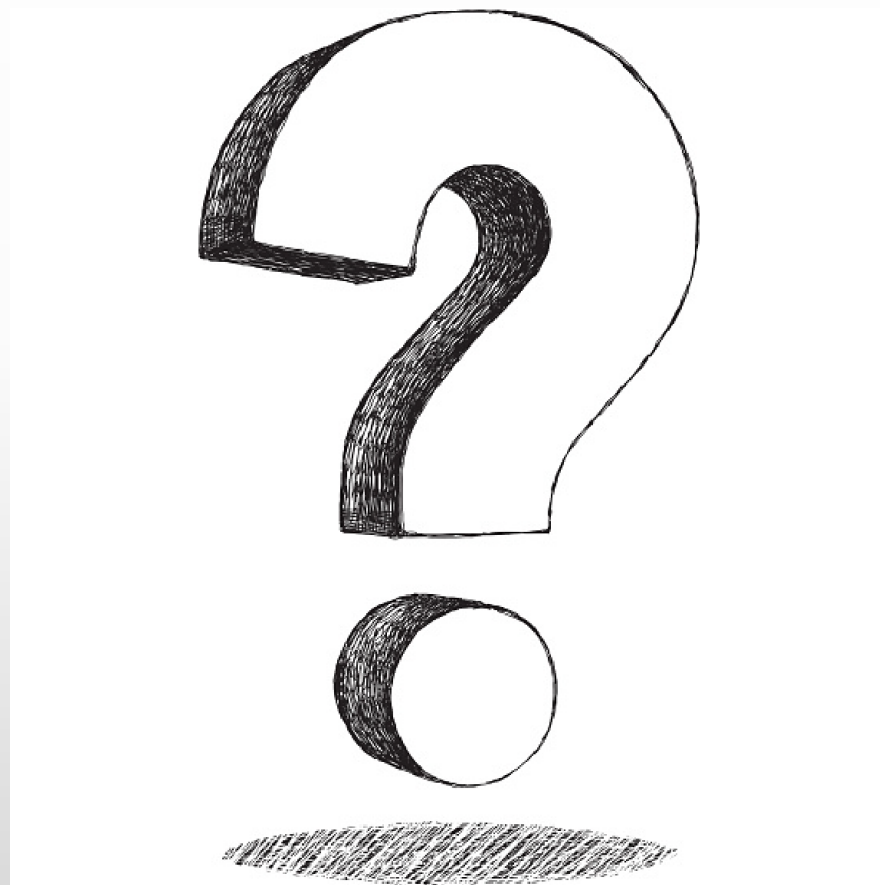
Institute of Medicine (US) Committee on Capitalizing on Social Science and Behavioral Research to Improve the Public's Health; Smedley BD, Syme SL, editors. Washington (DC): [National Academies Press \(US\)](#); 2000.

# Discussion

- Discussion Prompts:
  - Review question prompts with your group
  - Small groups will discuss for 5-10 minutes
  - Large group will come together for a debrief of the discussions
- Scenario Prompts:
  - Review scenario prompts with your group
  - Small groups discuss the scenario and “what would you do?” for 5-10 minutes
  - Large group will come together for a debrief of the discussions



# Questions?



# Support for the GHIB HIA from:

