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

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)
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)

2006–2016
- Community Advocacy

2016
- City-State Agreement Signed

2017–2018
- Contracts Awarded
- Air Quality Monitors Installed
- HIA Conducted

2019
- First HIA Report

2019–2028
- Ongoing monitoring
- Two more HIAs
Southwest Detroit Air Monitors and Emissions Sources

- Existing emissions sources
- Air monitoring locations
The Role of Academic Partners: Community-based Participatory Research

- Forming a CBPR Partnership
- Assess Community Strengths
- Identify Priority Issues
- Maintain, Sustain & Evaluate Partnerships
- Disseminate & Translate
- Feed Back & Interpret Findings
- Design & Conclude 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

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

1. All survey respondents were aged 18 and older (n=432): Household members were aged 0-65+ (n=16,382)
2. Gender is available for survey respondents only in 2018, thus not included in statistical comparisons for all household members
3. 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.
Indicated that outdoor air quality was a top concern.

66%
45% indicated that noise was a top concern
Resident concerns

- Traffic congestion making it hard to get places. 76%
- Clogged sewers or standing water in the streets. 75%
- Vibration from trucks or construction activity damaging property. 61%
- Road dust. 60%
- Loss of property value. 57%
<table>
<thead>
<tr>
<th>Plan to move</th>
<th>Living in impact area (n=224)</th>
<th>Living in buffer area (n=211)</th>
<th>Statistical test of difference$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within one year</td>
<td>8.6%</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>Between 1-5 years</td>
<td>17.7%</td>
<td>10.4%</td>
<td></td>
</tr>
<tr>
<td>More than 5 years</td>
<td>5.9%</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>Not planning to move</td>
<td>57.8%</td>
<td>73.6%</td>
<td>0.01</td>
</tr>
</tbody>
</table>

$^1$ 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.
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
“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:

[Logos of MDHHS, Erb Family Foundation, Michigan Health Endowment Fund, and Community Action to Promote Healthy Environments CEP-FIRE]

RO1ES022616
P30ES017885