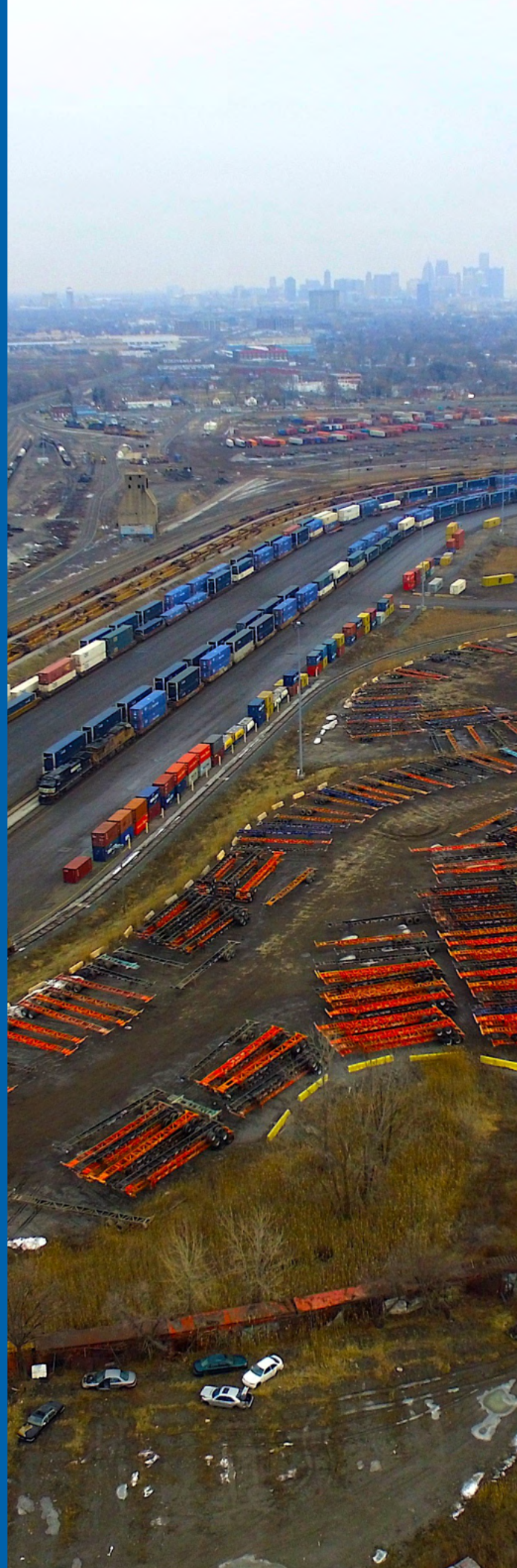


BASELINE HEALTH  
IMPACT ASSESSMENT  
FOR THE  
GORDIE HOWE  
INTERNATIONAL BRIDGE  
PROJECT

EXECUTIVE SUMMARY

Health Impact Assessment  
April 2019



# ACKNOWLEDGEMENTS

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In addition, we wish to thank the following groups: the Southwest Detroit Community Benefits Coalition Board, the Gordie Howe International Bridge Community Advisory Group, and the Resident Engagement Committee.

The 2016-2017 Bridge to a Healthy Community Survey was funded by the Fred A. and Barbara M. Erb Family Foundation, the Kellogg Foundation, the University of Michigan-Dearborn's Office of Metropolitan Impact, with additional support from the Ford Foundation and the Detroit Hispanic Development Corporation.

The 2018 Gordie Howe International Bridge HIA was funded by the Michigan Department of Health and Human Services and the Michigan Health Endowment Fund, with additional support from Community Action to Promote Healthy Environments (National Institute of Environmental Health Sciences #RO1ES022616).

Thank you especially to each family who gave their time to participate in the survey on behalf of better understanding the health of the community. All information from the surveys is anonymous.

The views and opinions expressed in this report are those of the authors and do not necessarily reflect the official policy or position of the Detroit Health Department or the City of Detroit.

Front photo credit: Community Action to Promote Healthy Environments. Springwells, Detroit, 2017.



# SUMMARY

In 2008, in response to proposals to build a bridge in southwest Detroit, an area that is currently host to several polluting industries, residents and local organizations formed the Southwest Detroit Community Benefits Coalition (SW Detroit CBC). SW Detroit CBC is a community organization with an elected board that represents hundreds of residents and other community stakeholders. The SW Detroit CBC has worked for over a decade to identify and advocate for benefits to improve quality of life for the community that will host the new international border crossing.

A federal study predicts improved regional air quality with construction of the Gordie Howe International Bridge (GHIB), but residents remain concerned about local impacts. Southwest Detroit currently has many sources of air pollution emissions from industries and transportation. A new bridge is expected to increase trade and logistics activities with additional impacts in the local neighborhoods. Together, these multiple sources of air pollution create a **combined or cumulative threat to environmental quality** and its effect upon human health.

In 2017, \$45-million was approved in City-State Agreements for community benefits in the SW Detroit area affected by the bridge. Funds were designated to support: job training and access for Detroit residents; monitoring health impacts of bridge construction and operations; monitoring air quality over time; creating an optional “home swap” program that allows residents in a defined area near the bridge to trade their home for a city-owned home elsewhere in Detroit; and a home environmental program to provide new windows and air filters to offset impacts of bridge construction and operations.

The Baseline Health Impact Assessment of the Gordie Howe International Bridge Project (or Baseline HIA Report) describes findings from a survey of residents in the area where the GHIB is being built. The survey was developed by a partnership between the Detroit Hispanic Development Corporation (DHDC), the Southwest Detroit Community Benefits Coalition (SW Detroit CBC), the University of Michigan School of Public Health (UM SPH), and the University of Michigan-Dearborn College of Education, Health and Human Services (UM Dearborn). It is one component of a 10-year initiative funded by the State of Michigan and managed by the Detroit Health Department (DHD) (see **Three phases of GHIB**), to assess the environmental and health impacts of the new bridge.



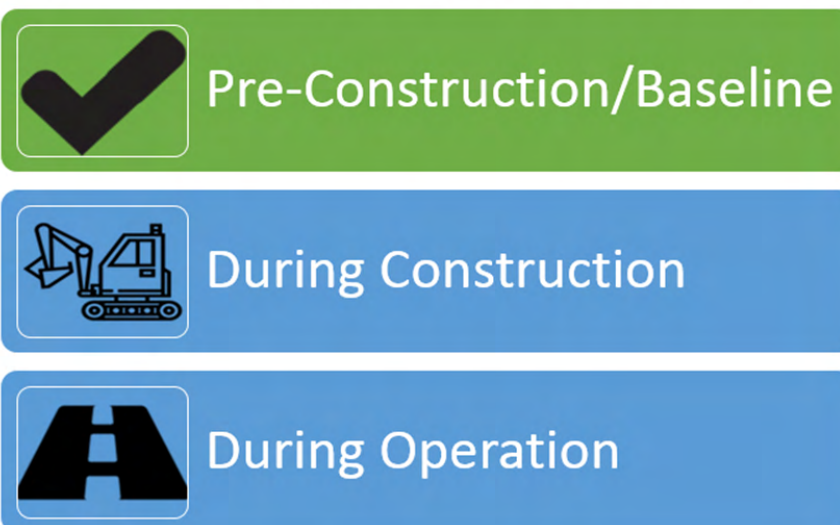
The larger goal is to address community concerns related to the GHIB by: documenting existing air quality and health conditions; tracking air quality and health over time; and identifying strategies to reduce health impacts experienced by local residents that are associated with the GHIB.

Data for the Baseline HIA was collected over two periods: The *Bridge to A Healthy Community Survey* (BHC) was conducted during August 2016- September 2017, and the *Gordie Howe International Bridge Survey* (GHIB) was conducted during July-September, 2018. Findings from both surveys are presented in the Baseline HIA Report.

This Executive Summary highlights key findings from the full report for the Baseline HIA. The selected findings are particularly relevant for the recommendations: additional data is available in the full report. Responses from residents were analyzed by researchers at the University of Michigan School of Public Health and reviewed by the full GHIB survey team. The surveys provided self-reported information based on interviews of residents.

If we missed addressing something of importance to you in the survey or the full report, let the Detroit Health Department know (<http://bit.ly/BaselineReportFeedback>) so they can consider adding to the later phases of the GHIB Health Impact Assessment.

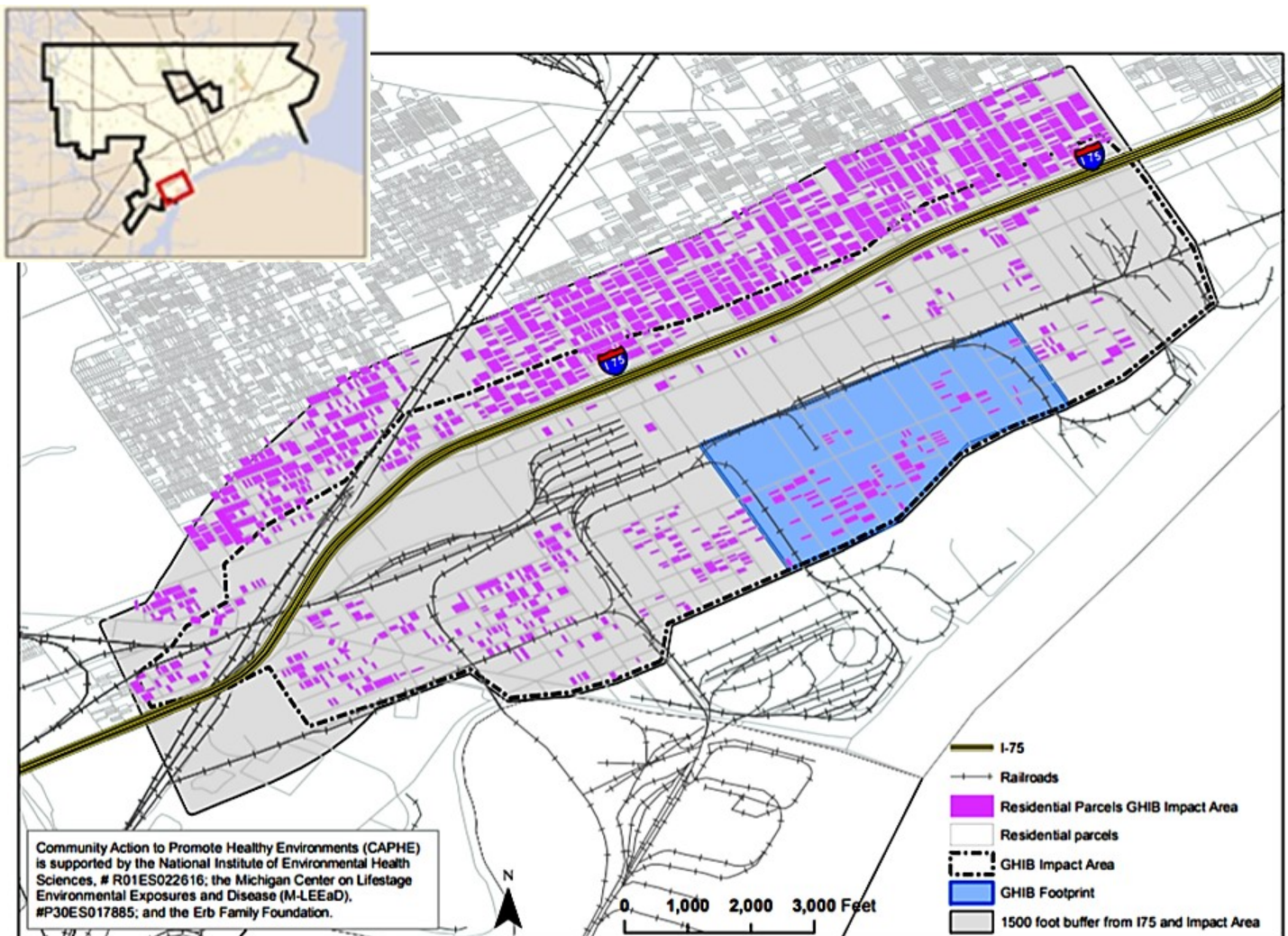
## Three Phases of GHIB Health Impact Assessment



# RESULTS

The BHC and Ghib surveys asked questions about current health status, and resident concerns, and invited for input on potential strategies to reduce air pollution emissions and exposures. The full report includes data from closed and open-ended questions and secondary sources, along with a full description of the survey methodology and protocols.

In the BHC 2016-2017 survey, **302** households were surveyed. Respondents included residents throughout Delray and within 500 feet (about 1 1/2 blocks) adjacent to the North Service Drive of I-75.



Population age over 17. Source:ACS 2014. Five years estimate census data. Estimated population over 17 years old living in buffer of 1500 foot is 6830

## Gordie Howe International Bridge (GHIB) Survey Area: residential parcels in impact area

In the 2018 GHIB survey, **146** households were surveyed. Of those, 26 households from the 2016-2017 survey were re-interviewed as a replicate sample. Respondents to the 2018 survey were primarily residents living between 500 to 1500 feet (about 1 1/2 to 5 blocks) north of the North Service Drive of I-75.

Survey sections included:

- **demographics (e.g. age, education or survey respondents, etc.).**
- **resident's self-reports on their neighborhoods, social support, and concerns**
- **housing characteristics**
- **health status of household members, and**
- **resident's suggestions for how to address concerns.**

Results reported in the Baseline HIA Report include data for **435 adult respondents**, and information reported by survey respondents for about **1,629 household members of all ages**.



# NEIGHBORHOOD & SOCIAL SUPPORT

Emotional, tangible and informational social support are linked to better health outcomes. Neighbors can be an important source of social support. The survey asked residents how they felt about their neighborhoods, and about their social relationships with their neighbors.

86% felt at home in their neighborhood



70% felt their neighborhood was a good place to live



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



## PLANS TO MOVE & NEIGHBORHOOD CONCERNS

At the time of the survey, a majority of residents reported they did not plan to move. In the GHIB impact area, 26% of respondents indicated they planned to move in the next 5 years or less, compared to 16% of respondents living north of I-75. Implementing strategies to protect the residents that remain from exposure to air pollutants could reduce adverse effects of air pollutants on their health.

The BHC and GHIB baseline surveys were conducted prior to bridge construction. Construction phase impacts, as well as operational phase impacts of the GHIB on residents lives may influence resident's plans to move over time.

Survey respondents reported concerns about air pollution and noise associated with the bridge in the BHC and GHIB baseline surveys.

**65-67%** Indicated that outdoor air quality was a top concern, including emissions from trucks or industry, fumes, and odors.

**46-47%** Indicated that noise was a top concern.

In the GHIB survey, the proportion of respondents indicating that the following were "very much a concern" were:

**76%** Traffic congestion making it hard to get places.

**75%** Clogged sewers or standing water in the streets.

**61%** Vibration from trucks or construction activity damaging property.

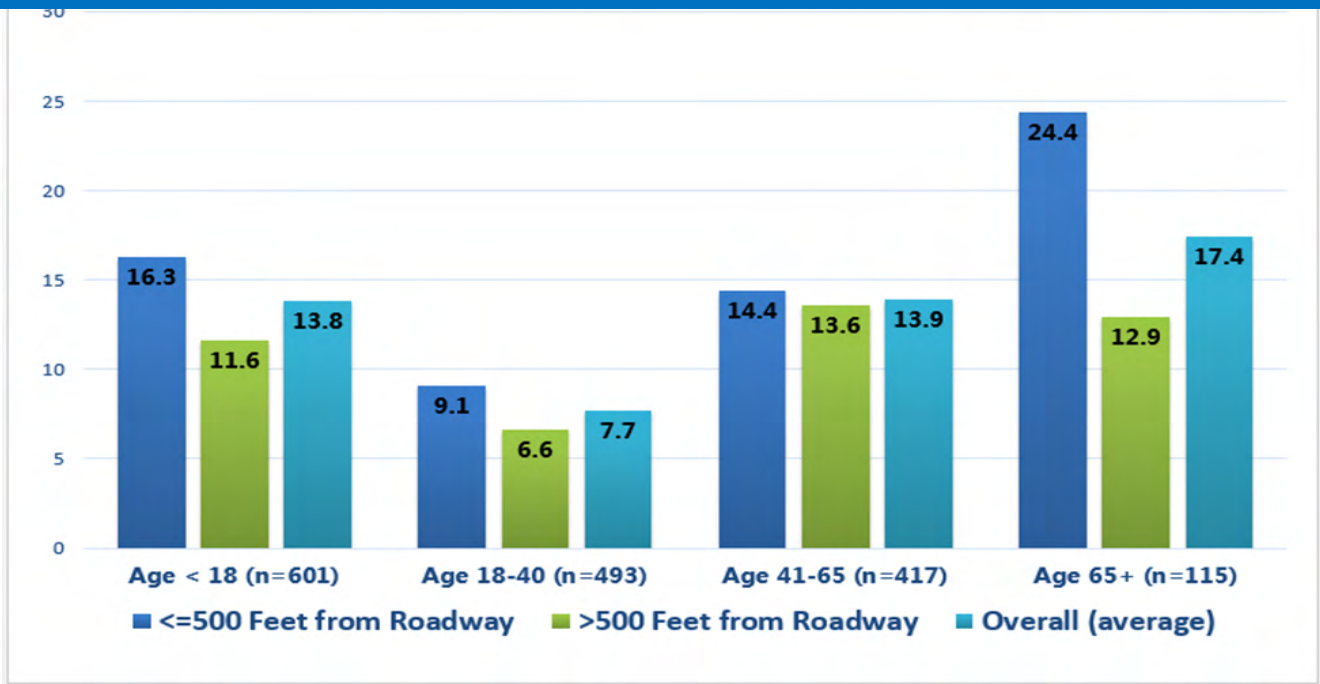
**60%** Road dust.

**57%** Loss of property value.



# HEALTH STATUS OF HOUSEHOLD MEMBERS

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



Survey respondents were asked to report on their own health and that of other members of their households. The n = is the total number of people about whom health was reported. The prevalence of reported asthma among children under the age of 18 in the GHIB area was 13.8%. Among those living 500 feet or less from I-75 or trucking routes through the GHIB area, the prevalence was 16.3%. Prevalence of reported asthma for those aged 65 and older living 500 feet or less from I-75 or trucking routes was 24.4%, compared to 12.9% for those in this age group living more than 500 feet from those roadways.

## DETROIT



Children Under 18

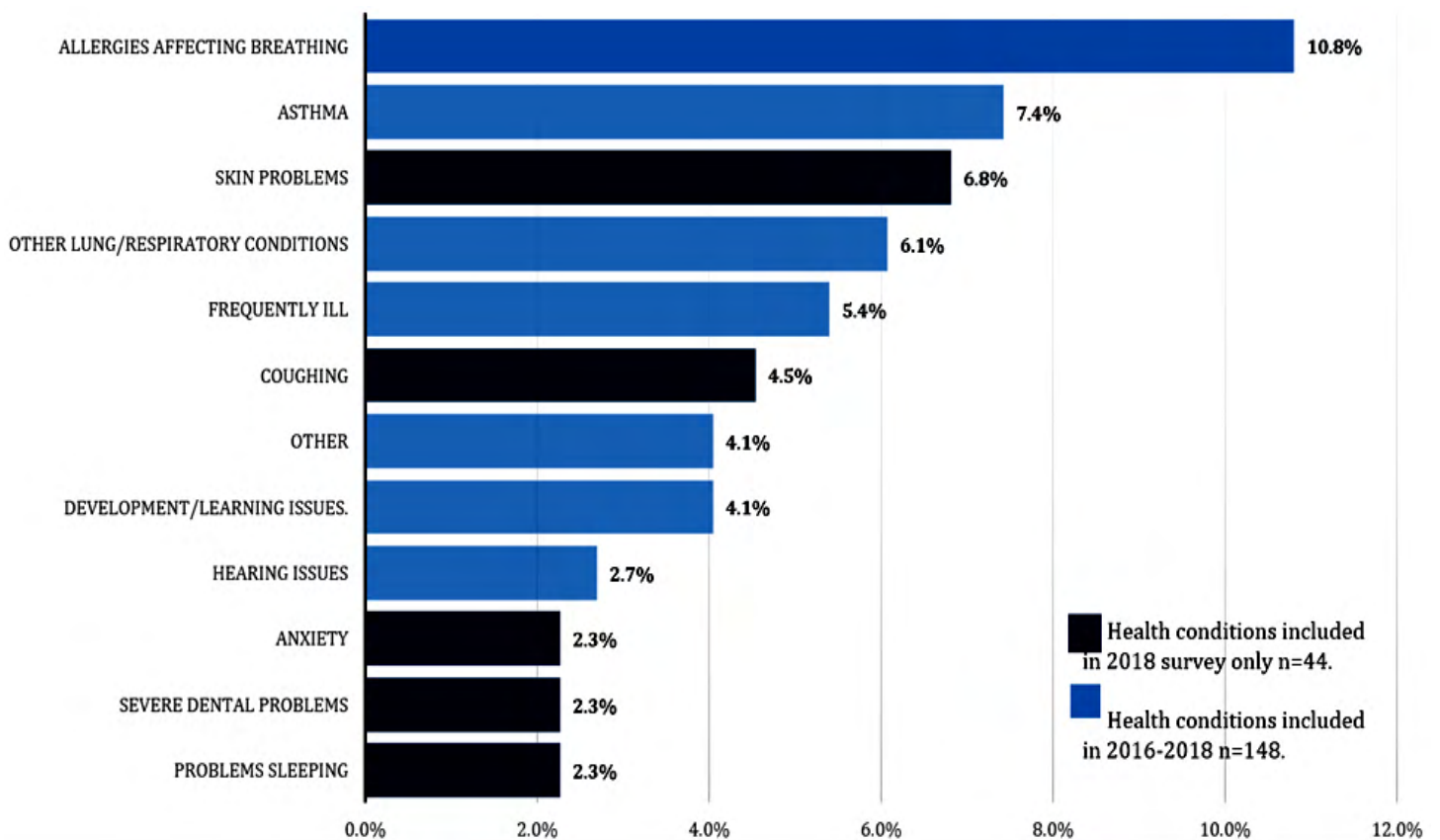
## MICHIGAN



Children Under 18

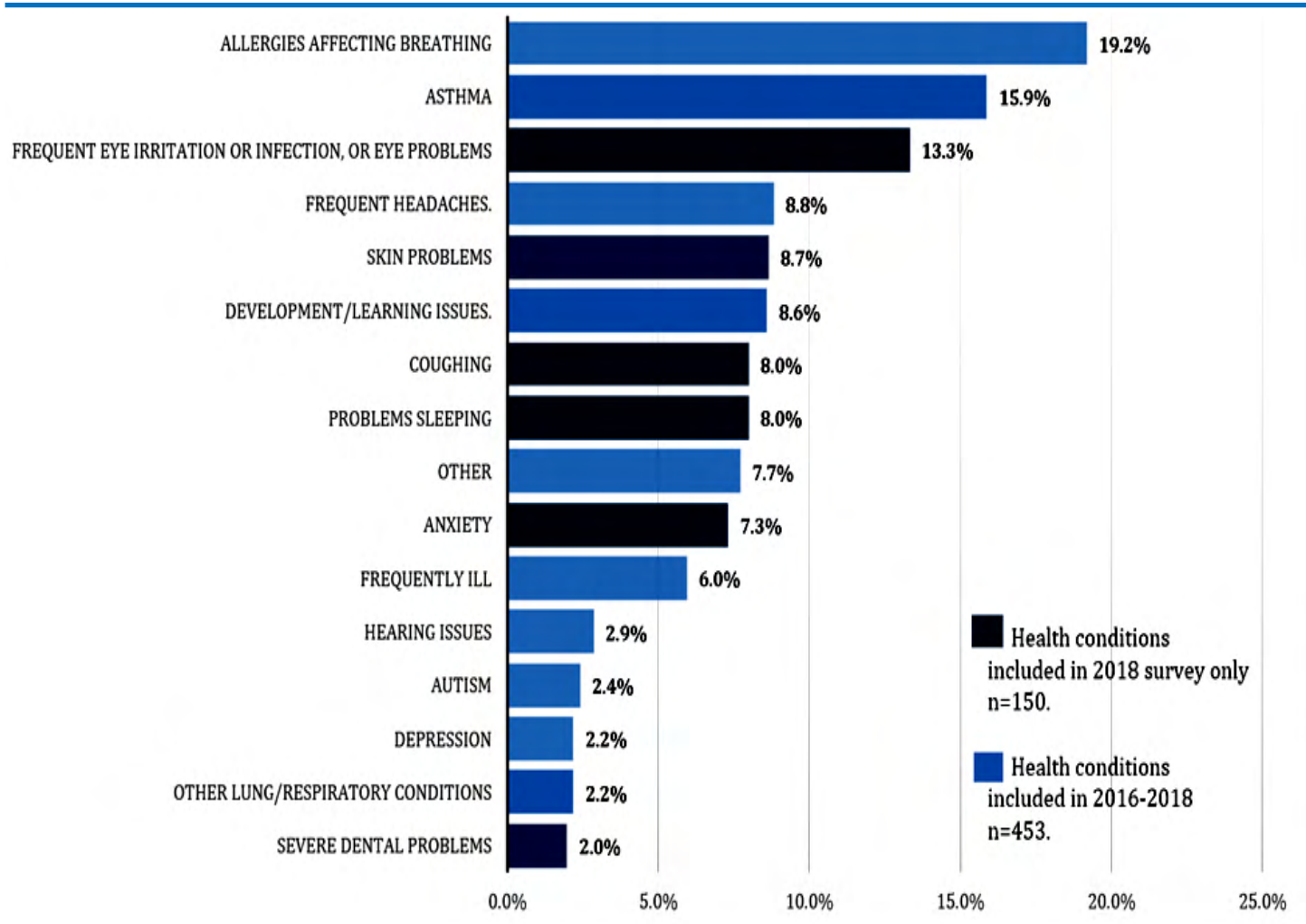
The Michigan Behavioral Risk Factor Survey indicates that 14.3% of children under the age of 18 in Detroit have been told by a health care provider that they currently have asthma, compared to 8.9% of children under 18 in Michigan.

The following figures show health conditions for all household members by age group, as reported by survey respondents. The health options reported were drawn from a pre-determined list and provide a baseline against which results from future waves of survey data can be compared.



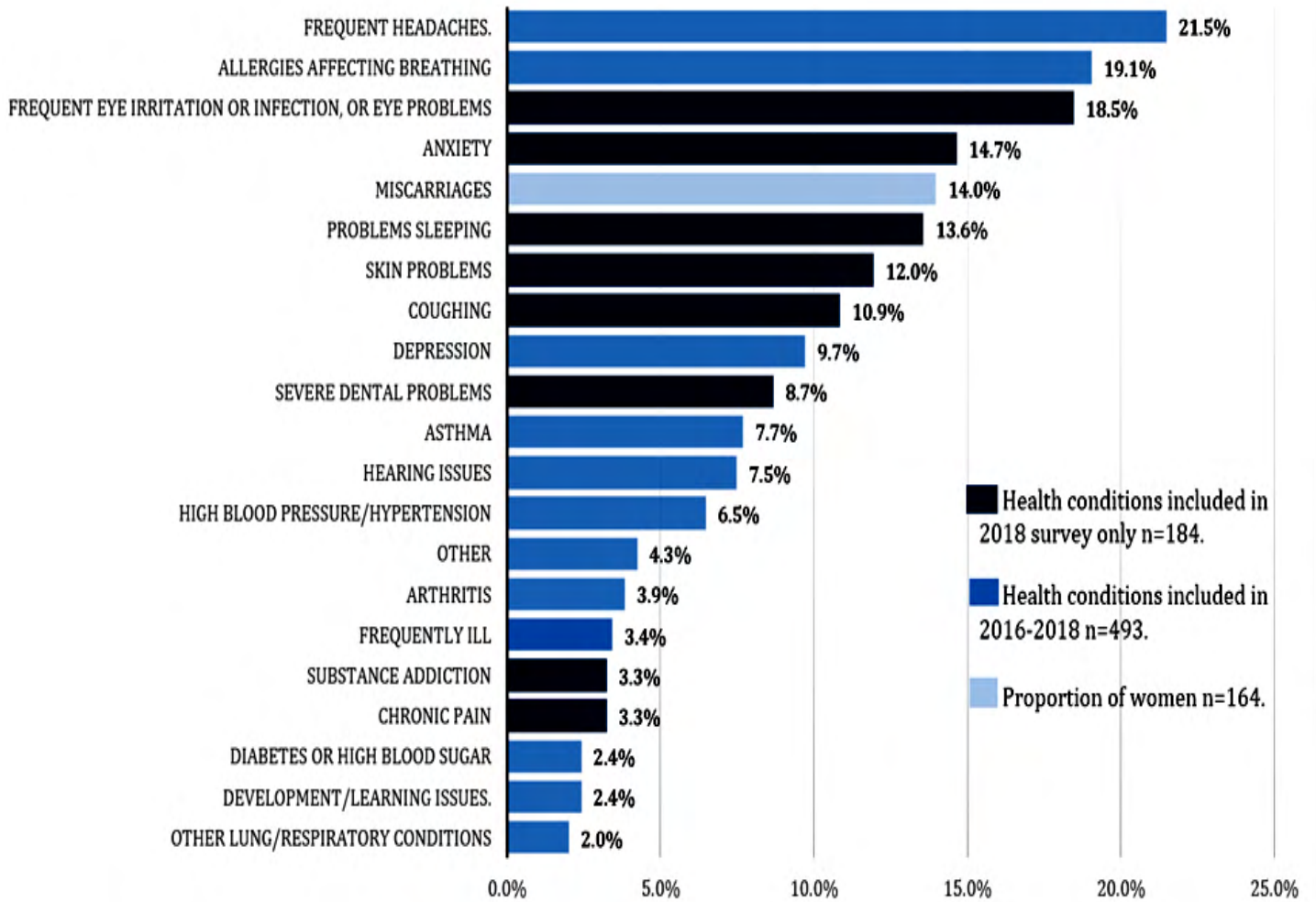
### Health conditions reported for children under the age of 5

Of the 148 children under the age of 5 on whom data was obtained, 10.8% were reported to have allergies affecting breathing, followed by asthma (7.4%), skin problems (6.8%), and other lung/respiratory conditions (6.1%). Between 4-5% of children under 5 were reported to have frequent illnesses, coughing, other health issues not included in the pre-identified list, and developmental/learning issues.



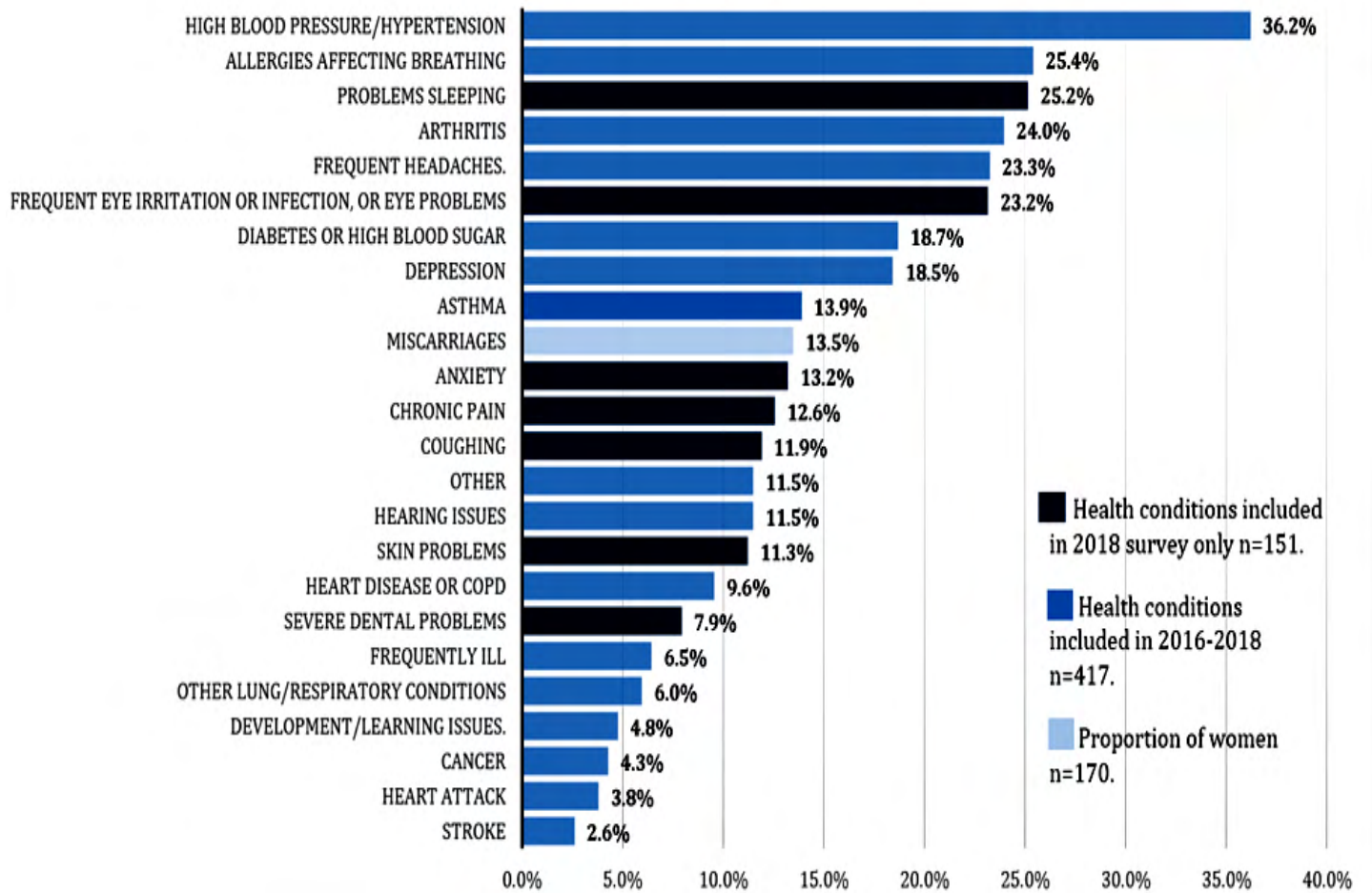
### Health conditions reported for those aged 5-17

In this age group, nearly 1 in 5 children were reported to have allergies affecting breathing (19.2%). The second most commonly reported health issue was asthma (15.9%). Frequent eye irritation or infections or other eye problems were reported for 13.3%. Between 8 and 9% reported frequent headaches, skin problems, developmental or learning issues, coughing or problems sleeping. 7.3% reported anxiety, 6% reported frequent illnesses, and between 2-3% in this age group reported hearing issues, autism, depression, other lung/respiratory conditions and severe dental problems.



### Health conditions reported for those aged 18-40

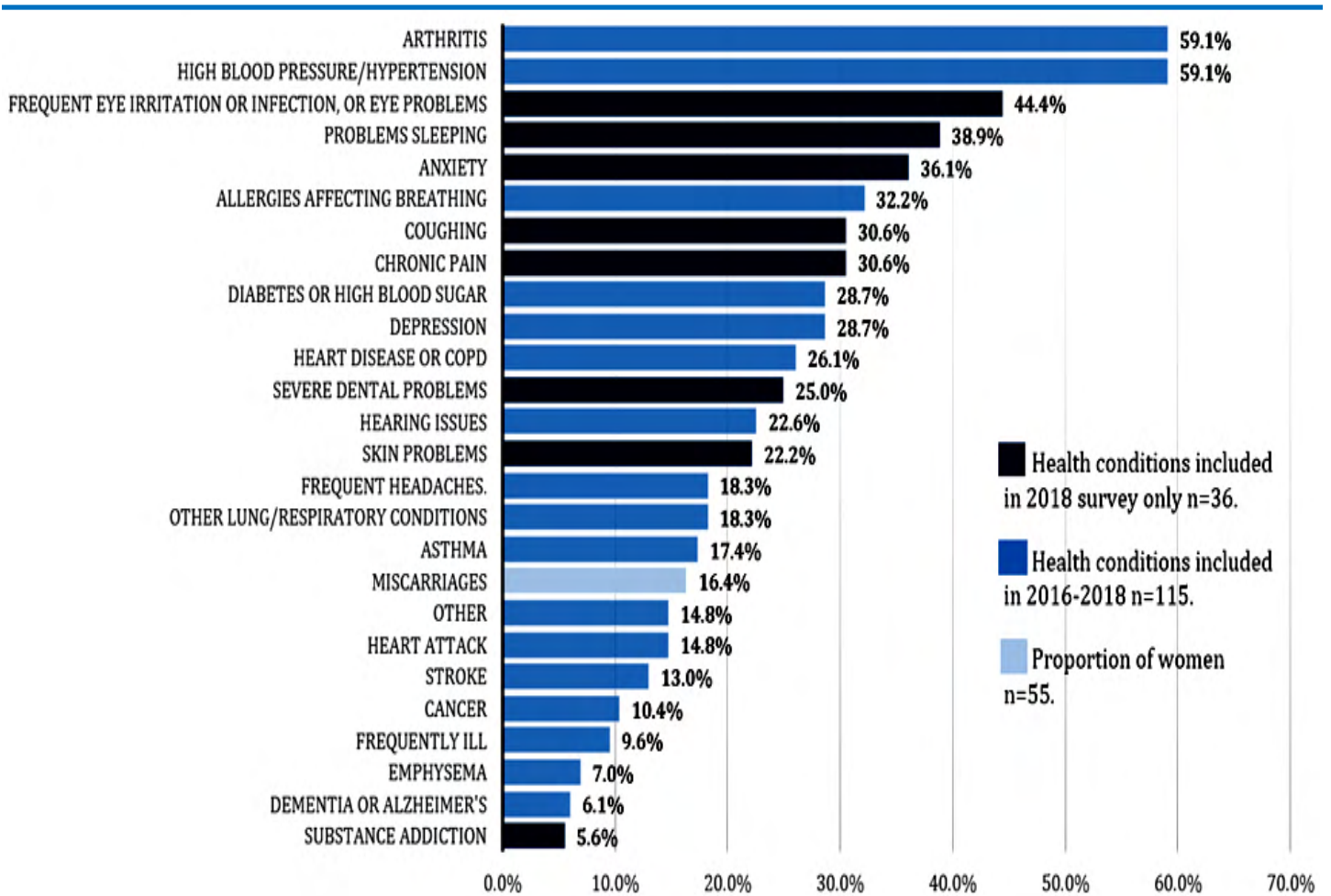
About 1 in 5 in this age group report frequent headaches (21.5%) and allergies affecting breathing (19.1%). Frequent eye irritations or infections or other eye problems were reported by 18.5%, 14.7% reported anxiety, 13.6% problems sleeping, and 12% reported skin problems. These were followed by coughing (10.9%), depression (9.7%), severe dental problems (8.7%), asthma (7.7%), hearing issues (7.5%) and high blood pressure (6.5%). Fourteen percent of women in this age group were reported to have experienced a miscarriage.



### Health conditions reported for those aged 41 to 64

The most commonly reported health problem was high blood pressure or hypertension (36.2%). Roughly 1 in 4 reported allergies affecting breathing (25.4%), problems sleeping (25.2%) arthritis (24%), frequent headaches (23.3%) and frequent eye irritation or infections or eye problems (23.2%). About 1 in 5 reported diabetes (18.7%), depression (18.5%), with 13.2% reporting anxiety and 13.9% reporting asthma. Additional health problems were reported by 12% or fewer in this age group. Among women in this age group, 13.5% were reported to have experienced a miscarriage.





### Health conditions reported for those aged 65 and older

Among those aged 65 and over, the most frequently reported health issues were arthritis (59.1%) and high blood pressure or hypertension (59.1%). Two in five reported frequent eye irritation or infection (44.4%), followed by problems sleeping (38.9%) and anxiety (36.1%). About a third reported allergies affecting breathing (32.2%), 30.6% reported coughing, 18.3% reported other lung or respiratory conditions and 17.4% reported asthma. Roughly one in three reported chronic pain (30.6%), followed by diabetes (28.7%), depression (28.7%), heart disease or COPD (26.1%) or severe dental problems (25.0%). About one in five reported hearing issues (22.6%), skin problems (22.2%), or frequent headaches (18.3%). About 16% of women in this age group reported having experienced a miscarriage. Other health problems were reported by 15% or fewer in this age group.



# RECOMMENDATIONS TO REDUCE EMISSIONS\*

Reducing pollutant emissions will reduce adverse health effects.

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## REDUCE IDLING

- Increase enforcement of anti-idling ordinance by enabling multi-agency enforcement
- Develop app or add capacity to *Improve Detroit* app for reporting idling issues

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## INCREASE COMPLIANCE WITH AIR QUALITY STANDARDS

- Enact stronger emission standards for diesel engines
- Enact more stringent air quality standards near highways

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## UTILIZE CLEAN FUELS

- Require & monitor use of clean fuels throughout the GHIB area during construction process
- Develop incentive programming to encourage use of zero-emission vehicles, including cars, trucks, and construction equipment

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## EXPAND RETROFITTING

- Expand diesel retrofits and fleet engine replacements



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*“Mandatory emission standards on semi-trucks to keep it [emissions] to a minimum, but affordable for truck owners to improve emissions”*

*“Pongan cosas en los camiones para reducir la contaminación*

*(Retrofit the trucks to reduce contamination)”*

*-Survey participants*

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\* All recommendations are based on survey findings, national research, and best practices. See full report for more resources and/or descriptions on recommendations.



# RECOMMENDATIONS TO REDUCE EXPOSURES

Health benefits can be attained by minimizing the exposures of workers and residents to air pollutants once they are emitted.

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## MOVE TRUCK ROUTES

- Establish and enforce trucking routes that have the least impact on residential neighborhoods & areas with sensitive populations

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## REQUIRE SPATIAL BUFFERS

- Require spatial buffers of at least 500 feet between heavily trafficked roadways and land uses with sensitive populations
- Expand relocation opportunities to a minimum of 500 feet & increase uptake Home Sway Program among eligible families

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## INSTALL VEGETATIVE BUFFERS

- Plant vegetative buffers in strategic places near the GHIB, prioritizing residential areas with sensitive populations, freeways, heavily trafficked roadways, areas with high cumulative risk & areas where minimum setbacks are not met
- Plant trees throughout Southwest to replace those removed during initial construction phase of GHIB

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## EXTEND FILTER PROGRAMMING

- Extend programming for high efficiency filters and other retrofits in homes near construction yards and site for the Gordie Howe Bridge, up to 500 feet from roadways



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*“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*





# OTHER RELEVANT STRATEGIES

Several additional strategies could impact resident's quality of life and the ability to understand the impacts of air quality on resident's quality of life.

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## EXPAND HEALTH CARE ACCESS

- Expand access to health care by assuring access to health insurance, neighborhood-based mental health and physical health care sources, and addressing transportation issues

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## SUPPORT MONITORING

- Support expanded monitoring of air quality

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*“Look into safety and health, think about the people that have been here for years”*

*“Take in consideration the health of the community - the children, and moms to be, and adults”*

*-Survey participants*

DO YOU HAVE FEEDBACK ON THIS REPORT OR  
QUESTIONS ABOUT THE FUTURE WAVES OF THE  
HEALTH IMPACT ASSESSMENT?

<http://bit.ly/BaselineReportFeedback>

