North Houston Highway Improvement Project (NHHHIP) Health Impact Assessment

H-GAC RAQPAC Subcommittee Meeting  JULY 26, 2018

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Air Alliance Houston (AAH)
Air Alliance Houston

Air Alliance Houston believes everyone has a right to breathe clean air and where you live, work, learn, and play should not determine your health.
What I will talk about today

- Why we are concerned about NHHIP
- NHHIP Draft Environmental Impact Statement
- NHHIP Health Impact Assessment (HIA)
- Assessment Areas
Why we are concerned about NHHIP
Houston Air Quality Context

74% of Houston families are concerned about air quality in Houston.

Houston has never met national standards for ozone and ranked 11th (out of 227 cities) for ozone pollution in 2017.

Houston ranked 2nd for toxic releases among big cities in 2016.

Harris County had the highest vehicle miles traveled (VMT) in Texas with 109 million VMT in 2015 (and is forecast to add an additional 50 million VMT by 2050).

80,000 Houston-area children attend schools in traffic-related air pollution (TRAP) zones.
Traffic-related Air Pollution & Public Health

Proximity to busy roadways is associated with many health issues.

Research has consistently found that living closer to and going to school near heavy traffic is associated with:

- childhood asthma
- reduced lung function
- impaired cardiovascular health and mortality
- the development of autism
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Health impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>diesel particulate matter*</td>
<td>causes lung cancer, aggravated lung diseases, decreased lung function in children</td>
</tr>
<tr>
<td>benzene</td>
<td>leukemia, anemia, blood disorders</td>
</tr>
<tr>
<td>1,3 butadiene</td>
<td>causes cancer, respiratory irritation, aggravated lung diseases</td>
</tr>
<tr>
<td>acetaldehyde</td>
<td>causes cancer, respiratory irritation, kidney and liver damage</td>
</tr>
<tr>
<td>acrolein</td>
<td>respiratory irritation, aggravated lung diseases</td>
</tr>
<tr>
<td>formaldehyde</td>
<td>nasal and eye irritation, neurological effects, asthma and allergies, GI ulcers, liver and kidney damage, cancer</td>
</tr>
<tr>
<td>naphthalene</td>
<td>possible carcinogen, anemia</td>
</tr>
<tr>
<td>polycyclic organic matter</td>
<td>causes cancer, birth defects, low body weight in children</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>possible carcinogen, damage to hearing, respiratory irritation, kidney damage</td>
</tr>
</tbody>
</table>
TX DOT draft MSAT analysis (May 2018)

- Aggregated across 8 counties
- No baseline
- No specifics about 5%+
- No assessment of EJ communities

Source: NHHIP Draft Quantitative MSAT Analysis
May 2018
Figure 2: Affected Network Roadway Links
NHHIP Draft Environmental Impact Statement
North Houston Highway Improvement Project (NHHIP) & Air Quality

The Environmental Protection Agency (EPA) has identified several air pollutants that are emitted from mobile sources that contribute to both cancer and non-cancer health issues.

The Federal Highway Administration (FHWA) requires a quantitative assessment of these pollutants, also known as mobile source air toxics (MSATs), on projects generating 140,000 annual average daily traffic (AADT) or more in populated areas.
TX DOT draft MSAT analysis displays segments with increased MSAT emissions ...

... but does not publish segment-level projections

Source: NHHIP Draft Quantitative MSAT Analysis May 2018 Figure 2: Affected Network Roadway Links
Health Impact Assessment (HIA)

Grant period: March 2018 - March 2019
Awarded to AAH by Urban Institute, Robert Wood Johnson Foundation
What is a health impact assessment?

HIA is an objective methodology designed to establish the ways in which a proposed policy or project could benefit and/or harm community health.
HIA Process

1. **Screening:**
   Define project goals.

2. **Scoping:**
   Set parameters and methodology.

3. **Assessment:**
   Identify potential co-benefits and co-harms to population health.

4. **Recommendations**

5. **Report**

6. **Evaluation**
Screening
Setting Goals

Primary Goal:
Develop quantitative information about the project’s potential co-benefits and co-harms to health for inclusion in the Final EIS.

Long-term Goal:
Model project for inclusion of HIAs in future mobility projects in metro-Houston area.

Ancillary Goal:
Raise public awareness of the public health implications of freeways.
Scoping
Setting Parameters

Assessing two types of health effects
1. Freeway expansion
2. Mitigation strategies

Focus on one vulnerable group
School-aged children

Addressing all impact categories in coalition DEIS letter
Air quality, Mobility, Low income communities, Economic development, Parks and green space, Noise, Views
Assessment Areas
Air Quality
Research questions to ID high risk schools

1. Location $\leq 50m$ or $150m$ of NHHIP project?
2. High sum of vehicle miles traveled (VMT)?
3. High asthma rate?
4. Existing connection with the community?
Next Steps

Finish gathering data
July - August 2018

Stakeholder meetings
August/September 2018

Mobile air monitoring
August 2018 /January 2019

Perform assessment
August – December 2018

Issue report
February 2019