NORTH HOUSTON HIGHWAY IMPROVEMENT PROJECT (NHHIP)

CITY OF HOUSTON TTI COMMITTEE MEETING

Quincy D. Allen, P.E. - TxDOT Houston District Engineer
June 13, 2019
NHHIP Urban Myth Busters

- **Capacity:** additional capacity is **multi-purpose** and **managed**.
  - Transit focused
  - Benefits of managed lanes
  - Significant pedestrian and bike improvements
  - Necessary to implement system safety and design criteria

- **Flooding:** NHHIP designed to incorporate Houston’s three recent major floods: 1) Memorial Day (2015), 2) Tax Day (2016), and Hurricane Harvey (2017)
  - Opportunities to leverage drainage improvements
  - Based on sound engineering

- **Air Quality:** NHHIP is a net benefit to regional air quality.
  - CO concentrations through the 2040 not expected to exceed national standards at anytime along any project segment
  - Improved in part from reduced congestion

- **Congestion:** NHHIP eases congestion through operational efficiencies and safety improvements.
  - Emphasis on evacuation improvements
North-Hardy Corridor OVERVIEW

- **2003:** North-Hardy Corridor Alternatives Analysis (METRO, TxDOT and H-GAC)
  - Examined transit and highway alternatives
  - **Determination made to complete transit alternatives analysis prior to beginning highway alternatives analysis**

- **2004:** North-Hardy Corridor Alternatives Analysis (Transit Component)
  - Identified need for direct links between transit bus service network and transit rail network
  - **Recommended high capacity transit alternatives in the form of light rail and/or commuter rail from UH Downtown to Bush Intercontinental Airport**

- **2005:** North-Hardy Corridor Alternatives Analysis (Highway Component)
  - Recommended highway alternatives from downtown Houston to Beltway 8 North

- **2011:** Determination made for a comprehensive approach for downtown’s freeway system (I-45, I-10, I-69 & SH 288) instead of piecemeal highway projects

- **2013:** METRO delivers METRORail Red Line (light rail) from UH Downtown to Northline Transit Center (north of IH 610 North between Crosstimbers and Tidwell)

- **2017:** TxDOT issues DRAFT Environmental Impact Statement identifying a Proposed Recommended Alternative for each of the 3 segments comprising the North Houston Highway Improvement Project (Highway Component)
NHHIP NEED AND PURPOSE

- **Need for Proposed Project**
  - Population and employment increases
  - Manage projected traffic growth
  - Bring to current design and safety standards
  - Move traffic efficiently, including evacuation events

- **Purpose of Proposed Project**
  - Manage congestion
  - Enhance safety
  - Provide expanded transit and carpool opportunities with 2-way, 24/7 operations
  - Improve mobility and operational efficiency

- NHHIP has **9 of the Top 40** Most Congested Roadways in Texas
SEGMENT 1: PREFERRED ALTERNATIVE ELEMENTS

- **New Multi-Purpose Capacity**
  - Add four (4) Managed lanes (HOV+Transit+Express)
    - (2-way, 24/7 operations)
  - Add one (1) frontage road lane in each direction
  - Add full-width shoulders
  - Add bike/pedestrian features along frontage roads

- **Expanded Right-of-Way**
  - North of Airline Dr: widen to the west
  - South of Airline Dr: widen to the east

<table>
<thead>
<tr>
<th>Segment 1</th>
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<tbody>
<tr>
<td>Beltway 8 to I-610</td>
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<tr>
<td>9 mi</td>
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</table>
SEGMENT 1: EXISTING vs PROPOSED

- NB Frontage Rd (2 lanes)
- SB Frontage Rd (2 lanes)
- NB Frontage Rd (3rd lane for intersection)
- SB Frontage Rd (Ramp weave lane)
SEGMENT 2: PREFERRED ALTERNATIVE ELEMENTS

- **Reconstruct I-45/I-610 Interchange**
  - Shift left-side connections between interstates to right-side
  - Lower mainlanes and managed lanes to improve sight distance

- **New Multi-Purpose Capacity** (same as Segment 1)
  - Add four (4) managed lanes (HOV+Transit+Express)
    - *(2-way, 24/7 operations)*
  - Add full-width shoulders
  - Add bike/pedestrian features along frontage roads

- **Limited Right-of-Way Expansion**
  - Preserves Hollywood Cemetery, Germantown Historic District & Woodland Park

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**Segment 2**

<table>
<thead>
<tr>
<th>I-610 to I-10</th>
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<tbody>
<tr>
<td>3 mi</td>
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</table>
SEGMENT 2: EXISTING VS PROPOSED

NEAR PATTON ST. LOOKING SOUTH (TOWARD DOWNTOWN)

View of Proposed Improvements near North Main St. with Potential Green Space

PRELIMINARY-SUBJECT TO CHANGE

Note: Green Space option is conceptual only and will require private development and funding.
SEGMENT 2: RENDERING OF PROPOSED CROSS SECTION

NEAR PATTON ST. LOOKING SOUTH (TOWARD DOWNTOWN)
“UNTANGLING THE DOWNTOWN FREEWAY SYSTEM”
SEGMENT 3: PREFERRED ALTERNATIVE ELEMENTS

- Big Fix Needed
  - Tie-in managed lanes (HOV+Transit+Express) from Segments 1 and 2 to Downtown (2-way, 24/7 operations)
  - Improve I-45/I-69 Interchange (bottleneck in Downtown Loop System)
  - Separate through-traffic from downtown destined traffic
  - Flatten curves at interchanges
  - Improve weaving conditions
  - Improve cross streets over NHHIP to incorporate City of Houston Bike Plan elements

Segment 3
Downtown Loop System
12 mi
NHHIP: THE PROPOSAL

- **CONGESTION RELIEF**
  - Increase in free flow speed of 20 mph around Downtown = 55 mph limit (Year 2040 AM Peak)
  - 50% reduction in delay during peak hour (Year 2040 AM Peak)
  - Systemwide reduction in delay and increase to average speeds
  - Potential major air quality improvement for the region & positive overall impacts

- **SAFETY**
  - Reduced crash rates by 30% compared to No Build Year 2040
  - Increased sight distance

*PRELIMINARY-SUBJECT TO CHANGE*
NOTE: Green space option is conceptual only and would require separate development and funding.
Once I-45 is relocated with NHHIP, the existing Pierce Elevated alignment and infrastructure is no longer needed by the state as a transportation use…
Artist’s rendering of one option to repurpose Pierce Street

Former alignment of I-45 Pierce Elevated Freeway
The visualizations shown in this video are conceptual only for the purpose of portraying proposed geometric features, including number of lanes, intersections, ramps and bridges.

The visualizations presented are not intended to portray current or future traffic operational characteristics of the corridor.

The improvements shown in this video are subject to change, based on further program development.
SEGMENT 3 – IMPROVEMENTS

- Significant operational improvements enhancing safety and efficiency

- Over $100M per year in user delay cost savings (based on 50% reduction in delay during AM Peak)

- Vehicle Emissions: reduction of vehicle air pollution contributions that improve health outcomes.

- Segment 3 (est. $4B) provides unprecedented congestion relief along with safety and air quality improvements
By 2027, $1B in new property tax revenues to the City are projected, an 800% fiscal ROI.

Since 2000, area real estate value increases have been more than twice city-wide increases.

Generated over $1.3B in economic benefits to Dallas between 2009 and 2016.

NHHIP estimated to generate between $5B and $9B (NPV) in economic benefits over the next 20 years.

Source: Central Houston, Inc. / HR&A Advisors, Inc. (2018 NHHIP Economic Development Study)
PUBLIC INVOLVEMENT
## PUBLIC INVOLVEMENT SUMMARY (2013-2019)

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>Formal Public Meetings</strong></td>
<td>16</td>
</tr>
<tr>
<td>4 Rounds of Public Meetings (2011-2017)</td>
<td>12</td>
</tr>
<tr>
<td>Public Hearings in May 2017</td>
<td>4</td>
</tr>
<tr>
<td><strong>Stakeholder Meetings</strong></td>
<td>252</td>
</tr>
<tr>
<td>Local, State, &amp; Federal Officials</td>
<td>22</td>
</tr>
<tr>
<td>Agencies (Cities, County, METRO)</td>
<td>53</td>
</tr>
<tr>
<td>Management Districts &amp; Chambers of Commerce</td>
<td>55</td>
</tr>
<tr>
<td>Super Neighborhoods, Neighborhood Associations &amp; Civic</td>
<td>18</td>
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<tr>
<td>Clubs</td>
<td></td>
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<tr>
<td>TIRZ &amp; Redevelopment Authorities</td>
<td>12</td>
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<tr>
<td>Organizations &amp; Associations</td>
<td>24</td>
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<tr>
<td>Corporations (Houston Sports Teams, Railroads)</td>
<td>17</td>
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<tr>
<td>Developers</td>
<td>13</td>
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<tr>
<td>Individual Businesses &amp; Property Owners</td>
<td>40</td>
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<tr>
<td><strong>Total</strong></td>
<td>268</td>
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Working Other (Cooperating and Participating Agencies)

- **Federal Agencies**
  - FHWA, FTA, Army Corp of Engineers, Coast Guard, EPA, Fish & Wildlife, HUD

- **State Agencies**
  - TCEQ, General Land Office, Historical Commission, Parks & Wildlife, Railroad Commission

- **Local Agency Partners**
  - COH, Houston METRO, Houston Galveston Area Council (HGAC), Harris County Public Infrastructure & Flood Control, HCTRA

- **Local Management Districts**
  - Central Houston, East Downtown, Greater East End, Greater Northside, Greenspoint, Montrose, Airline Improvement, Greater Southeast, Midtown
Area-specific focused meetings is to share key information with community leaders

- Project Update
- Discuss residential/community impacts and discuss potential concerns, mitigation and remedies
  - System Safety and Connectivity
  - Mitigation for Residential Displacements
  - Pedestrian and Bike Improvements
  - Noise Mitigation
  - Air Quality
  - Drainage/Flooding Concerns
  - Pierce Elevated
  - Visual Impacts & Aesthetic Enhancements
Ongoing Engagement

- Traffic Management Steering Committee
- Mayor Turner’s NHHIP Steering Committee
- COH Planning Department Initiatives
  - Initial Segment 3 Meetings
  - COH Facilitation Meetings
    - Upcoming Public Meetings
    - Additional Stakeholder Meetings
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<tr>
<th>Year</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>2019-2020</td>
<td>• Continued Community and Stakeholder Engagement</td>
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<tr>
<td>Early 2020</td>
<td>• TxDOT Finalize Environmental Process</td>
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<tr>
<td>Mid to Late 2020</td>
<td>• Right-of-Way Acquisition for Segment 3</td>
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<tr>
<td>2021</td>
<td>• Construction Begins on Segment 3</td>
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<tr>
<td>After 2024</td>
<td>• Construction on Segments 1 and 2</td>
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For More Information on the project visit: www.IH45NorthandMore.com

Contact TxDOT-Houston District Public Information Office by email at HOU-PIOwebmail@TxDOT.gov or call 713-802-5076.

Follow us on Twitter: @TxDOTHoustonPIO

North Houston Highway Improvement Project