



# TEXAS DEPARTMENT OF TRANSPORTATION



## 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



Source: Shutterstock



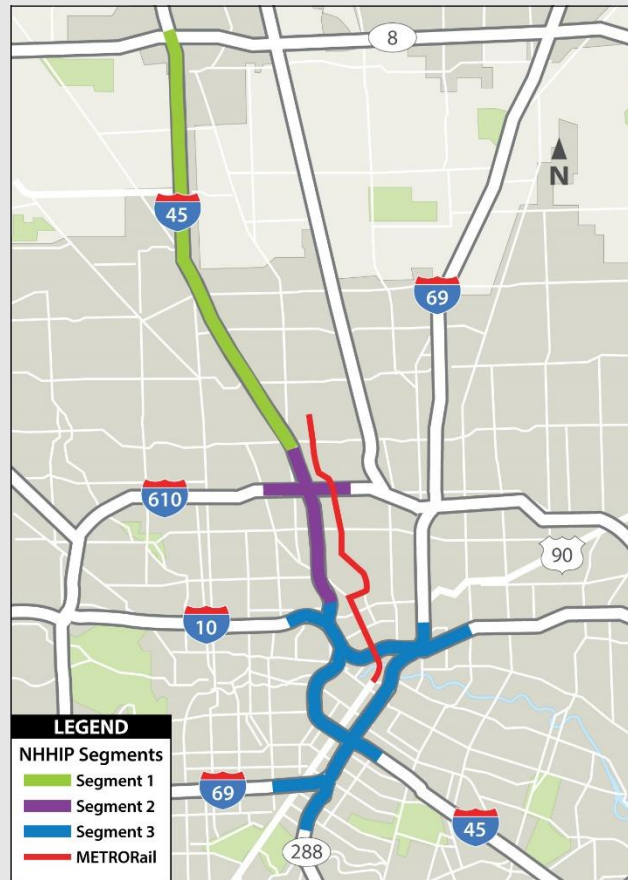
**11.9M**  
million gallons of excess



**788M**  
in congestion costs

# **NORTH HOUSTON HIGHWAY IMPROVEMENT PROJECT**

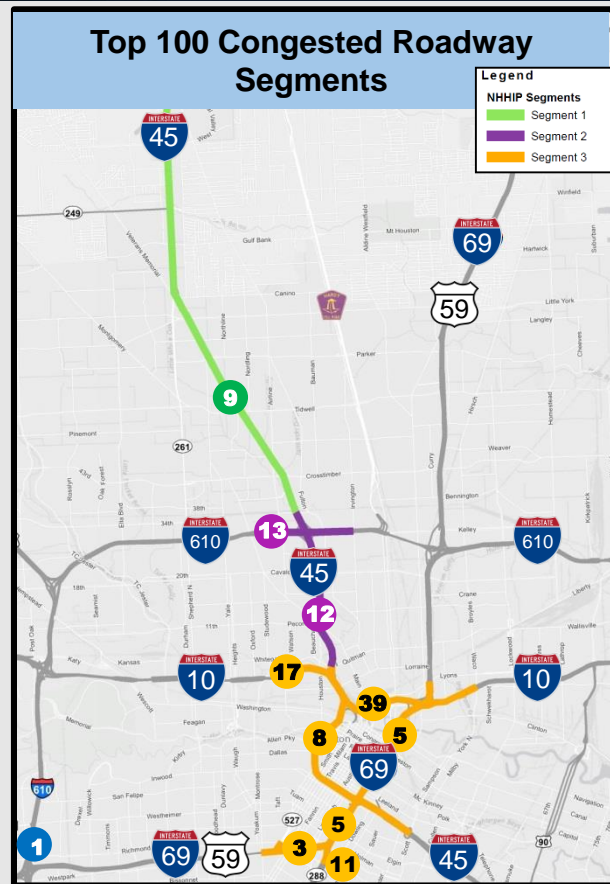
# North-Hardy Corridor OVERVIEW



- **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

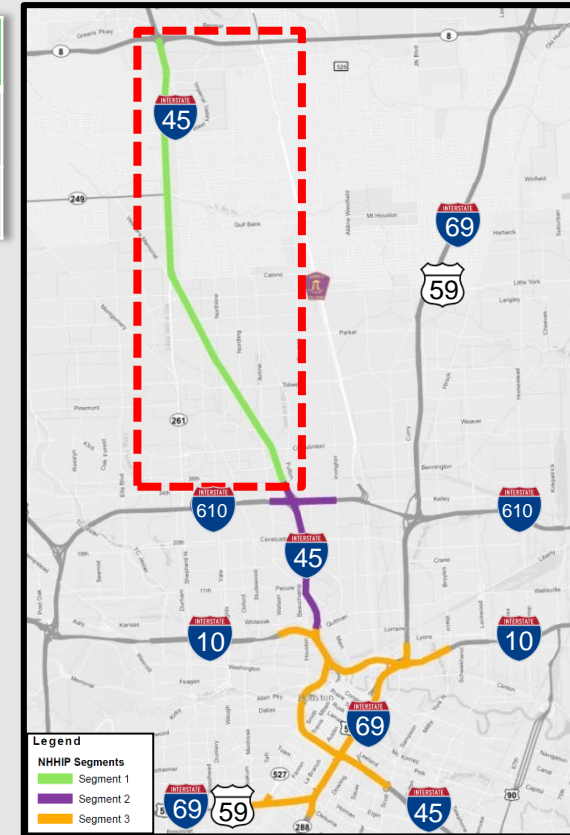
- Need for Proposed Project
  - Population and employment increases
  - Manage projected traffic growth
  - Bring to current design and safety standards
  - Move traffic efficiently, including evacuation events
- Purpose of Proposed Project
  - Manage congestion
  - Enhance safety
  - Provide expanded 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



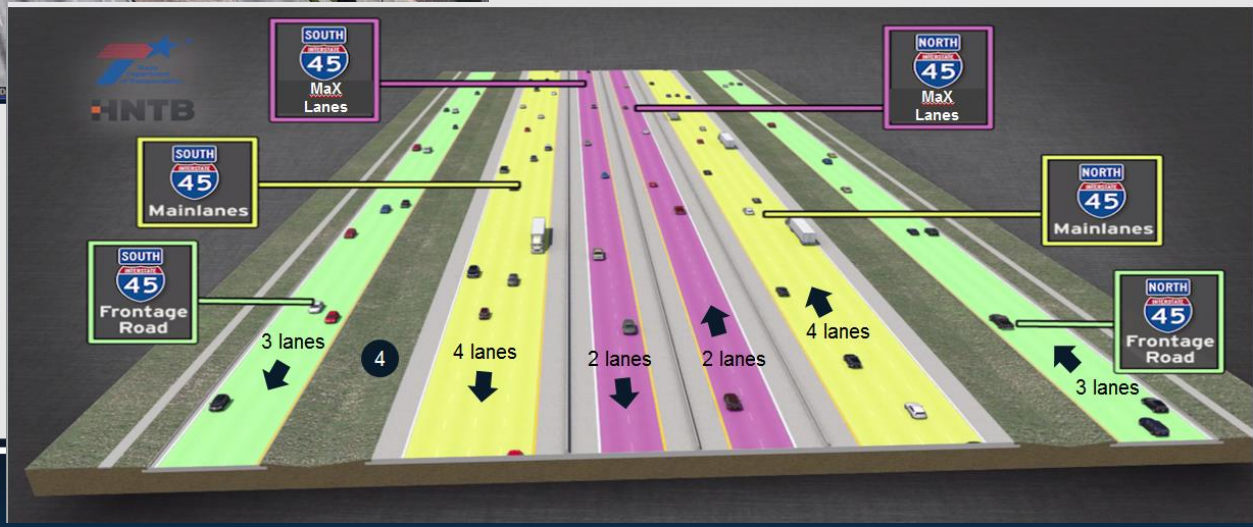
# SEGMENT 1: PREFERRED ALTERNATIVE ELEMENTS

- **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

<b>Segment 1</b>
Beltway 8 to I-610
9 mi



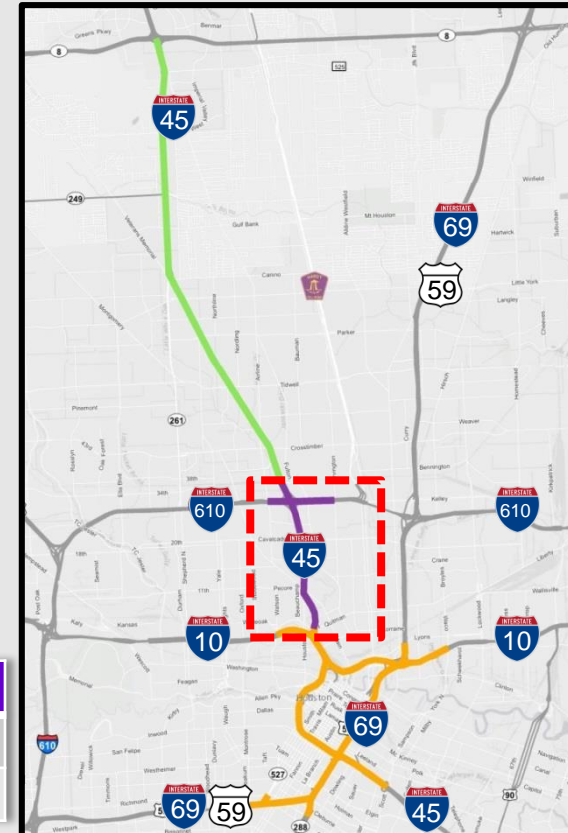
# SEGMENT 1: EXISTING vs PROPOSED



# SEGMENT 2: PREFERRED ALTERNATIVE ELEMENTS

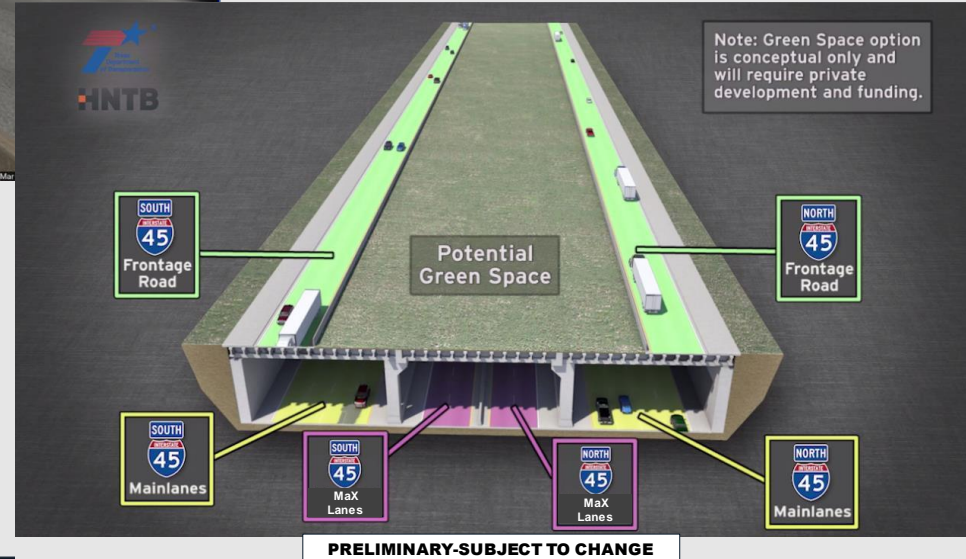
- **Reconstruct I-45/I-610 Interchange**
  - Shift left-side connections between interstates to right-side
  - Lower mainlanes and managed lanes to improve sight distance
- **New Multi-Purpose Capacity (same as Segment 1)**
  - Add four (4) managed lanes (HOV+Transit+Express)  
*(2-way, 24/7 operations)*
  - Add full-width shoulders
  - Add bike/pedestrian features along frontage roads
- **Limited Right-of-Way Expansion**
  - Preserves Hollywood Cemetery, Germantown Historic District & Woodland Park

<b>Segment 2</b>
I-610 to I-10
3 mi



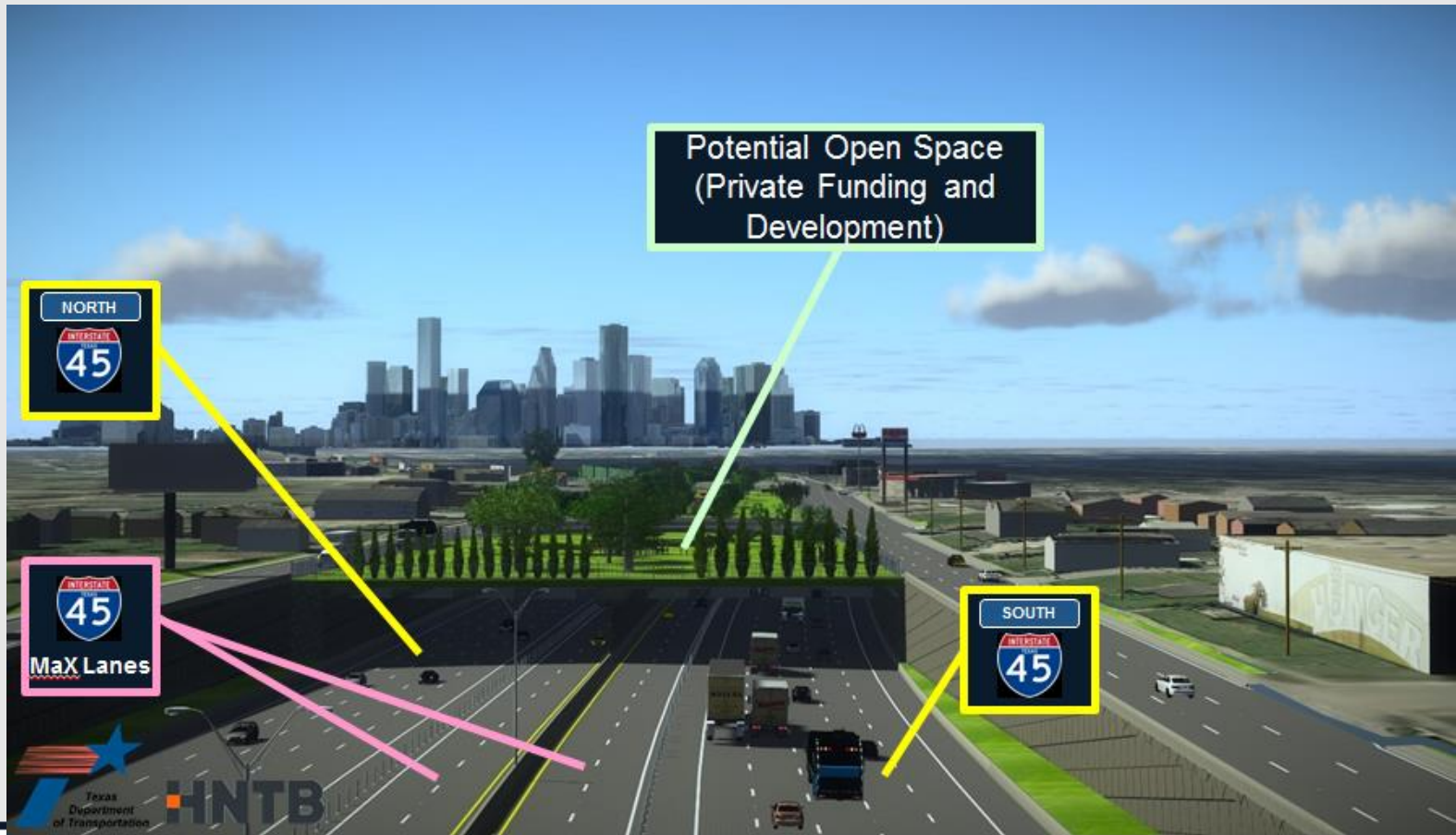


# SEGMENT 2: EXISTING VS PROPOSED



NEAR PATTON ST. LOOKING SOUTH (TOWARD DOWNTOWN)

# SEGMENT 2: RENDERING OF PROPOSED CROSS SECTION



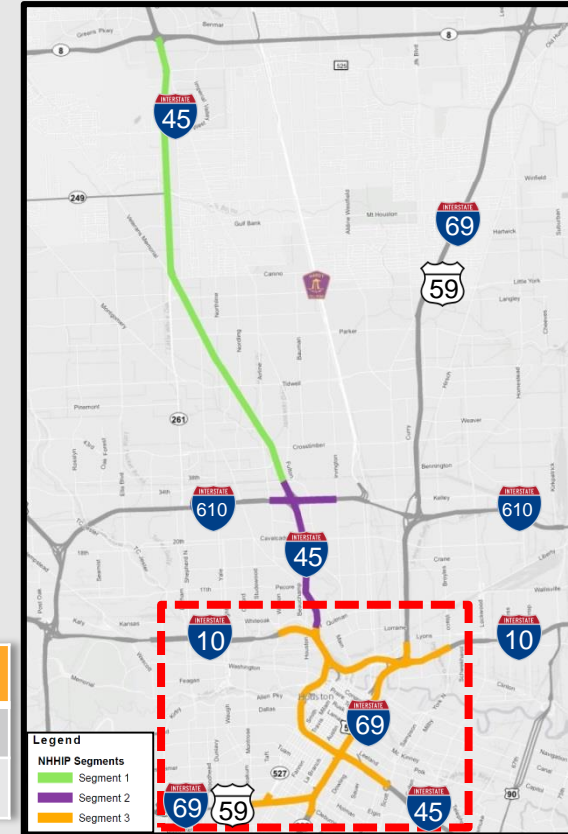
NEAR PATTON ST. LOOKING SOUTH (TOWARD DOWNTOWN)

# “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**

# NHHIP: POTENTIAL GREEN SPACE BEHIND THE GRB

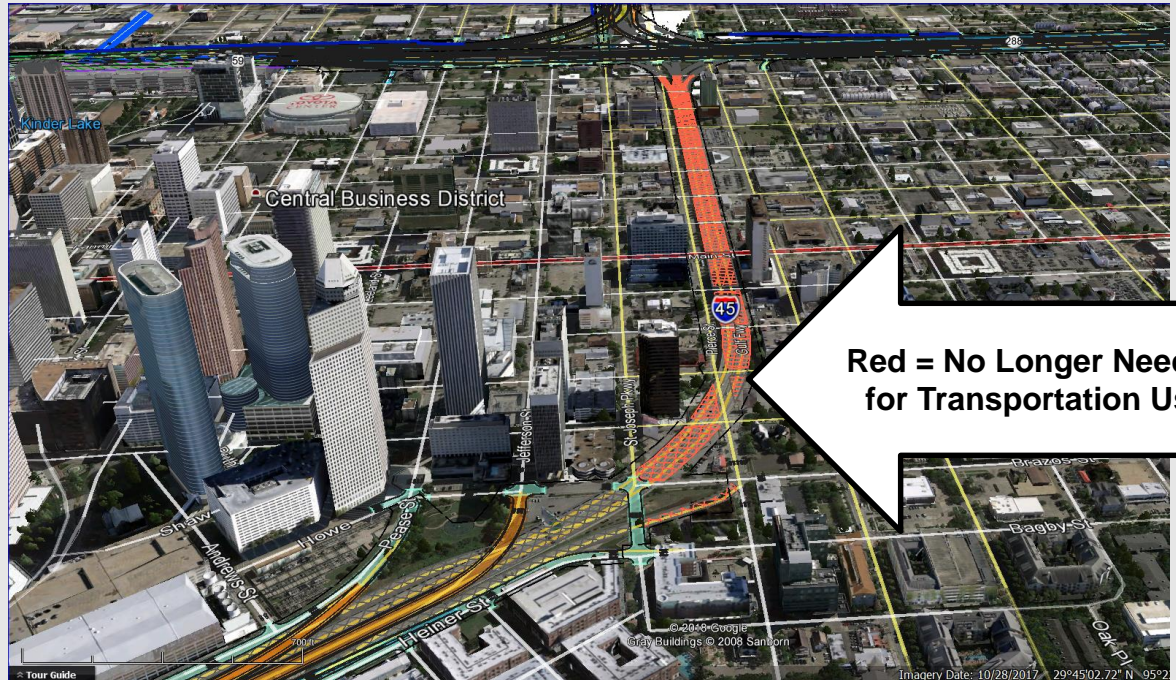
PRELIMINARY-SUBJECT TO CHANGE



*North Houston Highway Improvement Project*

# NHHIP: REPURPOSED FREEWAY - NEW OPPORTUNITIES

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...



**PRELIMINARY-SUBJECT TO CHANGE**

# NHHIP: REPURPOSED FREEWAY - NEW OPPORTUNITIES

## Artist's rendering of one option to repurpose Pierce Street

*Former alignment of I-45 Pierce Elevated Freeway*



### 1 GREEN LOOP

Create a trail with a generous pedestrian path, an amenity zone, and a two-way bikeway. Paving, materials, and patterns should be high-quality and consistent to brand the trail.

### 2 ACTIVE FRONTAGE

Energize the Green Loop by lining it with active ground floor uses, cafe seating, public art, and other amenities.

### 3 TREE ALLÉE

Plant an allée of large canopy trees to provide shade and identity for the Green Loop.

### 4 REPROGRAMMED INFRASTRUCTURE

Evaluate the options for preserving a portion of the Pierce Elevated, potentially incorporating retail or recreation uses above and below the decommissioned highway.

### 5 LOW-IMPACT DEVELOPMENT

Implement state-of-the-art water quality and detention/retention strategies to reduce the impacts of flood events.

### 6 SIGNATURE DESTINATIONS

Develop a signature destination, potentially reutilizing a portion of the Pierce Elevated.

### EXISTING CONDITIONS





# NORTH HOUSTON HIGHWAY IMPROVEMENT PROJECT

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**

# NHHIP: ECONOMIC BOOST FOR HOUSTON



THE HIGH LINE  
NEW YORK



THE 606  
CHICAGO



KLYDE WARREN PARK  
DALLAS



NHHIP  
HOUSTON

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)

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



# Working Other (Cooperating and Participating Agencies)

## ■ Federal Agencies

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

## ■ State Agencies

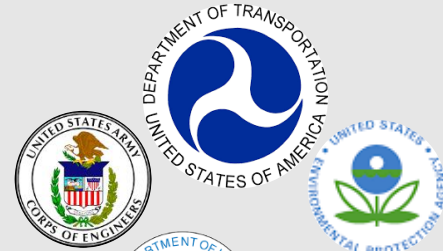
- TCEQ, General Land Office, Historical Commission, Parks & Wildlife, Railroad Commission

## ■ 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, Grater East End, Greater Northside, Greenspoint, Montrose, Airline Improvement, Greater Southeast , Midtown

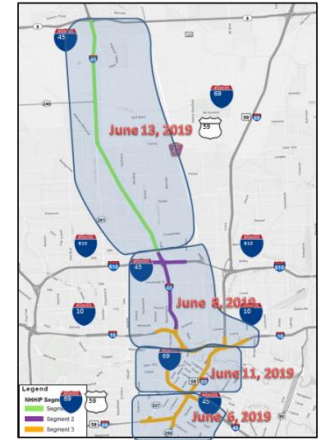


# RESIDENTIAL & COMMUNITY INTERFACE MEETINGS

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

NHHIP Residential & Community Interface Meetings



# 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

I-45 NHHIP Traffic Management Steering Committee



### Committee Charter

The North Houston Highway Improvement Project (NHHIP) Traffic Management Steering Committee was formed to support the exploration, planning, advancement and execution of strategies to support traffic management initiatives during construction.

**PRIMARY GOAL**

Explore, plan and execute strategies to support sound, innovative and proactive traffic management initiatives for the NHHIP construction to minimize adverse impacts to the community.

**KEY OUTCOMES**

- Enhance safety, connectivity and mobility
- Long-term change in use of alternative travel modes
- Enhance accessibility
- Build the capacity and ability to respond to future challenges
- Minimize adverse impacts to businesses and communities during construction
- Promote economic growth and community sustainability



## North Houston Highway Improvement Project



Come hear about the latest developments from the City of Houston and TxDOT.

**Public Meeting**

6:00 p.m. to 8:00 p.m. (Presentation at 6:30 p.m.)  
**Thursday, June 20, 2019**  
Harris County Department of Education Conference Center\*  
6300 Irvington Boulevard  
Houston, TX 77022

\*Park in the parking garage and take elevator to 5th Floor

**Wednesday, June 26, 2019**  
Acres Homes Multi-Service Center  
6719 W. Montgomery Road  
Houston, TX 77091

Venga a escuchar sobre los últimos desarrollos de la Ciudad de Houston y TxDOT.

**Reunión Pública**

6:00 p.m. a 8:00 p.m. (Presentación a las 6:30 p.m.)  
**jueves, 20 de junio de 2019**  
Harris County Department of Education Conference Center\*  
6300 Irvington Boulevard  
Houston, TX 77022

\*Estacionese en el garage de estacionamiento y tome el ascensor hacia el quinto piso

**miércoles, 26 de junio de 2019**  
Acres Homes Multi-Service Center  
6719 W. Montgomery Road  
Houston, TX 77091



# CURRENT STATUS & NEXT STEPS

2019-  
2020

- Continued Community and Stakeholder Engagement

Early  
2020

- TxDOT Finalize Environmental Process

Mid to  
Late  
2020

- Right-of-Way Acquisition for Segment 3

2021

- Construction Begins on Segment 3

After  
2024

- Construction on Segments 1 and 2

# Houston District Resources & Questions

**Quincy Allen, P.E.**

TxDOT Houston District Engineer

713-802-5001

**Raquelle Lewis**

TxDOT Houston District PIO

713-802-5071 or email: [raquelle.lewis@txdot.gov](mailto:raquelle.lewis@txdot.gov)

*For More Information on the project visit:*

[www.IH45NorthandMore.com](http://www.IH45NorthandMore.com)

Contact TxDOT-Houston District Public Information Office by email at [HOU-PIOwebmail@TxDOT.gov](mailto:HOU-PIOwebmail@TxDOT.gov) or call 713-802-5076.

*Follow us on Twitter: @TxDOTHoustonPIO*