WELCOME

TxDOT Project Manager: Grant Chim, P.E.
<table>
<thead>
<tr>
<th>#</th>
<th>Agenda Item</th>
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<tbody>
<tr>
<td>1</td>
<td>Introductions / Purpose of Meeting</td>
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<tr>
<td>2</td>
<td>What is a PEL (Planning &amp; Environmental Linkages) Study?</td>
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<td>3</td>
<td>Role of the Stakeholders</td>
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<td>4</td>
<td>Purpose of the PEL Study</td>
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<td>I-10E Study Limits</td>
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<td>Engagement</td>
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<td>7</td>
<td>Technical Process</td>
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<td>8</td>
<td>Project Schedule and Next Steps</td>
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</table>
What is a Planning & Environmental Linkages (PEL) Study?

- An early planning study that links planning and the National Environmental Policy Act (NEPA) environmental studies.

- Initiates coordination with oversight agencies, stakeholders, and members of the public.

- Streamlines the overall project development process and minimizes duplication.
Role of the Stakeholders

Engage

Inform Team

ID Groups

Review
Stakeholder Groups Represented

- Chambers of commerce, economic development councils, industry organizations, major employers
- Neighborhoods
- Social services
- Special interest, environmental
Purpose of the PEL Study

- Explore improvements for a variety of transportation modes, such as high-occupancy vehicle lanes, truck lanes, transit, rail, bicycle, and pedestrian.
- The PEL process will identify projects for future implementation based on needs within the study area.
Engagement - Communications Tools

- Logo and branding
- Website and social media
- Fact sheets, project business cards
- Surveys
- Distribution at community centers and events
Engagement - Public Meetings

- Open house, interactive, encouraging feedback
- Four locations each round
  - Houston
  - Channelview
  - Baytown
  - Mont Belvieu
- Phase I Public Meeting: February 2018
Engagement - Project Ambassadors Committee (PAC)

- Chambers County
- City of Baytown
- City of Houston
- Harris County
- METRO
Agencies

- Federal, such as U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service
- State, such as Texas Commission on Environmental Quality and Texas Parks and Wildlife Department
- Harris County Toll Road Authority
- Harris County Flood Control District
- Chambers-Liberty Counties Navigation District
- Railroads
- Emergency management: federal, state, and local
Technical Process

- Data Collection
- Previous Studies
- Environmental Constraints
- Traffic Data
- Port and Freight Traffic
- Accident and Crash Data
- Drainage Information
Corridor Segments

Map showing corridor segments with different colors and distances.
Traffic Data Collection

- Mainlane volume counts (39)
- Intersection turning movement counts (66)
- 24-hour volume counts (365)
- System to system counts (34)
- Bluetooth data collection (73)
- Cell phone data collection
Data Collection Locations
## Previous Studies

<table>
<thead>
<tr>
<th>Year</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>- The National I-10 Freight Corridor Study – Summary of Findings, Strategies, and Solutions</td>
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<tr>
<td>2007</td>
<td>- Houston Region Freight Study</td>
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<tr>
<td>2008</td>
<td>- The National I-10 Freight Corridor Study – Phase II Report / Corridor ITS Architecture</td>
</tr>
<tr>
<td>2010</td>
<td>- H-GAC Subregional Planning Initiative East Port Transportation – Land Use Vision Plan and Implementation Program</td>
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<tr>
<td>2011</td>
<td>- H-GAC Fifth Ward Pedestrian Bicyclist Special District Study</td>
</tr>
<tr>
<td>2012</td>
<td>- East End Mobility Study</td>
</tr>
</tbody>
</table>
| 2013 | - H-GAC Regional Good Movement Plan  
- Baytown Mobility Plan |
| 2014 | - Final Environmental Impact Statement – The Grand Parkway Segments H and I-1  
- H-GAC Fifth Ward / Buffalo Bayou / East End Livable Centers Study |
| 2016 | - H-GAC 2040 Regional Transportation Plan (RTP)  
- I-10 Corridor Coalition – A TPCB Peer Exchange  
- H-GAC Kashmere Gardens Livable Centers Study  
- Texas Freight Mobility Plan |
| 2017 | - H-GAC Regional Transit Framework Study  
- North Houston Highway Improvement Project Draft Environmental Impact Statement  
- H-GAC State Highway 146 Subregional Study  
- Houston Bike Plan |
2017

- I-10 Western Connected Freight Corridor, Concept of Operations Study
Environmental Constraints

- Land Use
- Demographics
- Water Resources
- Biological Resources
- Hazardous Materials
- Neighborhood and Community Resources
- Cultural Resources (Historical & Archeological)
- Parks / Recreation / Conservation Areas
Identified Environmental Constraints

- **Land Use / Demographics / Community Resources**
  - Fifth Ward Neighborhood – environmental justice community; potential historic district

- **Cultural Resources**
  - Sloan Memorial United Methodist Church – historic church
  - Evergreen Cemetery
  - San Jacinto Funeral Home & Memorial Park

- **Hazardous Materials**
  - San Jacinto Foundry – Superfund site
  - San Jacinto River Waste Pits – Superfund site

- **Parks**
  - Kress Lyons Park
  - Hennessey Park

- **Water Resources**
  - Hunting Bayou
  - Greens Bayou
  - Carpenters Bayou
  - San Jacinto River
  - Cedar Bayou
Existing Conditions Report

- Corridor Overview
- Physical Features
- Water and Drainage Features
- Utilities
- Transportation Facilities
- Traffic Data
- Safety Analysis
- Traffic Analysis & Operation
Roadway Network & Hurricane Evacuation Routes
Number of Lanes
I-10E Typical Roadway Sections

- Number of Lanes
- Lane Widths
- Right of Way (ROW)
- Mainlanes (ML)
- Frontage Road (FR)
- Eastbound / West Bound (EB / WB)

Study Limits

5 Segments
- 1: I-69 to east of I-610
- 2: East of I-610 to east of BW 8
- 3: East of BW 8 to Spur 330
- 4: Spur 330 to County Line
- 5: County Line to SH 99
Segments 1 & 2: I-69 to East of BW 8
Segments 3, 4, & 5: East of BW 8 to SH 99

I-10E EXISTING TYPICAL SECTION
## Bridge Structures

<table>
<thead>
<tr>
<th>PEL Segment #</th>
<th>Roadway</th>
<th>Railroad</th>
<th>Utility</th>
<th>Pedestrian</th>
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<td>Total</td>
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<td>5</td>
<td>4</td>
<td>4</td>
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<td>128</td>
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ITS Device Locations
# 2017 Truck Related Fatal Crashes*

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
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<tbody>
<tr>
<td>6/25/2017</td>
<td>I-10E at Gellhorn</td>
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<tr>
<td>8/23/2017</td>
<td>I-10E at Dell Dale</td>
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<tr>
<td>4/4/2017</td>
<td>I-10E at Wade Rd</td>
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<tr>
<td>4/22/2017</td>
<td>I-10E at John Martin</td>
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</tbody>
</table>

*Not comprehensive list

![Map of truck-related fatal crashes along I-10E, highlighting specific locations with red markers.](image)
Figure 2.15
Volume and Mode Share By Value, 2007 and 2035

Source: CS analysis of IHS Global Insight and U.S. Army Corps of Engineers data.
Projected Conditions Report

- Travel Demand Modeling
  - H-GAC Subarea Model
  - Cell phone data for Origin-Destination

- Future No-Build Years
  - 2018 Existing
  - 2025 Opening
  - 2030 Interim
  - 2040 Design
Existing Volumes

Max: 99,940 vpd

Min: 32,540 vpd

Daily Traffic Volume Ranges (thousand vehicles per day)
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80-89
- 90-99

0 1 2 Mi
Levels of Service

- **LOS A**
  - Free-flow operation

- **LOS B**
  - Reasonably free flow
  - Ability to maneuver is only slightly restricted
  - Effects of minor incidents still easily absorbed

From *Highway Capacity Manual, 2000*
Levels of Service

- **LOS C**
  - Speeds at or near FFS
  - Freedom to maneuver is noticeably restricted
  - Queues may form behind any significant blockage

- **LOS D**
  - Speeds decline slightly with increasing flows
  - Density increases more quickly
  - Freedom to maneuver is more noticeably limited
  - Minor incidents create queuing

From Highway Capacity Manual, 2000
Levels of Service

- **LOS E**
  - Operation near or at capacity
  - No usable gaps in the traffic stream
  - Operations extremely volatile
  - Any disruption causes queuing

- **LOS F**
  - Breakdown in flow
  - Queues form behind breakdown points
  - Demand > capacity

From *Highway Capacity Manual, 2000*
AM Peak Hour Level of Service
PM Peak Hour Level of Service
Average Speed – Mid-Day

Mid-Day Average Speed (mph)

- Green: 55.1 - 70.0
- Yellow: 40.1 - 55.0
- Orange: 25.1 - 40.0
- Red: 10.0 - 25.0

0 1 2 Mi
Travel Time – Mid-Day

Mid-Day Peak Travel Time (minutes)
- 1.1 - 5.0
- 5.1 - 10.0
- 10.1 - 15.0
- 15.1 - 20.0
- 20.1 - 25.0

0 1 2 Mi

Harris County  Chambers County
Travel Time – PM
Level of Service vs. Travel Time Reliability

- Recurring variations in demand: 0% to 62% variation
- Severe weather (e.g., heavy rain, snow, poor visibility)
  - Heavy rain: 16% reduction
  - Very low visibility: 12% reduction
- Incidents (e.g., crashes, disabled vehicles, debris): up to 100%
- Work zones: 15% reduction in capacity for shoulder closed
- Special events: increase in demand
## Project Schedule

<table>
<thead>
<tr>
<th>Phase</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<td></td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
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<tr>
<td>Phase I</td>
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<td>Existing Conditions</td>
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<td>Project Ambassadors Committee (PAC)</td>
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<td>Public Meeting</td>
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</tbody>
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Next Steps - Engineering

- Forecast Future Traffic
- Analyze No-Build Scenario
- Identify Issues & Concerns
- Develop Universe of Alternatives
Next Steps - Environmental

- Prepare constraints map
- Qualify resources
- Quantify resources
Next Steps - Public Outreach

- Agency Coordination Meeting #1 (January / February 2018)
- Public Meeting #1 (February 2018)
THANK YOU!

Contact:
Grant Chim, P.E.
Grant.Chim@TxDOT.gov
(713) 802-5259