WELCOME

TxDOT Project Manager: Grant Chim, P.E.
Agenda

1. Introductions / Purpose of Meeting
2. What is a PEL (Planning & Environmental Linkages) Study?
3. Role of the Agencies
4. Purpose of the PEL Study
5. I-10E Study Limits
6. Engagement
7. Technical Process
8. Project Schedule and Next Steps
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 Agencies

Goals & Objectives

Open Communication

Inform Team

Review

Inform Team

Open Communication

Goals & Objectives
Agencies Involved

**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
Agencies

- Federal
- State
- Regional
- Local
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.
I-10E Study Limits
Engagement - Communications Tools

- Logo and branding
- Website and social media
- Fact sheets, project business cards
- Surveys
- Distribution at community centers and events
Engagement - Project Ambassadors Committee (PAC)

- Chambers County
- City of Baytown
- City of Houston
- Harris County
- METRO
Engagement - Stakeholder Groups

- Chambers of commerce, economic development councils, industry organizations, major employers
- Neighborhoods
- Social services
- Special interest, environmental
Engagement - Public Meetings

- Open house, interactive, encouraging feedback
- Four locations each round
  - Houston
  - Channelview
  - Baytown
  - Mont Belvieu
- Phase I Public Meeting: February 2018
Technical Process

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

### 2003
- The National I-10 Freight Corridor Study – Summary of Findings, Strategies, and Solutions

### 2007
- Houston Region Freight Study

### 2008
- The National I-10 Freight Corridor Study – Phase II Report / Corridor ITS Architecture

### 2010
- H-GAC Subregional Planning Initiative East Port Transportation – Land Use Vision Plan and Implementation Program

### 2011
- H-GAC Fifth Ward Pedestrian Bicyclist Special District Study

### 2012
- East End Mobility Study

### 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
I-10E Typical Roadway Sections

Segments 1 & 2: I-69 to East of BW 8

I-10E EXISTING TYPICAL SECTION
Segments 3, 4, & 5: East of BW 8 to SH 99
# Bridge Structures

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<th>PEL Segment #</th>
<th>Roadway</th>
<th>Railroad</th>
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Historical Flooding

[Map of historical flooding along the I-10E route, with annotations for project areas, road closures, and floodplains.]

*Closures and flooding related to Hurricane Harvey.*
Crash Frequency
### 2017 Truck Related Fatal Crashes*

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<td>6/25/2017</td>
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<td>4/22/2017</td>
<td>I-10E at John Martin</td>
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*Not comprehensive list

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[Map showing truck-related fatality locations along I-10E]

- Project Area
- Crash Frequency (Hotspots)
Truck Volumes & Percent Trucks

Truck Volume Ranges (per day)
- Project Limits
- 0 - 2,999 trucks
- 0,000 - 8,999 trucks
- 9,000 - 12,000 trucks

Map showing truck volumes and percentages along various roadways in Houston and Harris County.
Freight Related Traffic

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.
Project 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

Harris County
Chambers County

Houston

Galena Park

Baytown

Grand Parkway

Beach City
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

![Map showing AM Peak Hour Level of Service for I-10E Planning & Environmental Linkages Study]
PM Peak Hour Level of Service
Average Speed – 7:00 AM to 9:00 AM
Average Speed – 11:00 AM to 1:00 PM
Average Speed – 4:00 PM to 6:00 PM
Travel Time – AM

AM 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
Travel Time – Mid-Day

Map showing travel time – mid-day with different colors indicating time ranges from 1.1 to 25.0 minutes.
Travel Time – PM

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

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Next Steps - Engineering

- Analyze No-Build Scenario
- Identify Issues & Concerns
- Develop Alternatives
Next Steps - Environmental

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

- Public Meeting #1
  - 2/13: Mont Belview
  - 2/15: Baytown
  - 2/20: Channelview
  - 2/22: Houston
THANK YOU!

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