



# PROJECT AMBASSADORS COMMITTEE MEETING

I-45N Planning and Environmental Linkages Study  
Beltway 8 North – Loop 336 South





# INTRODUCTIONS

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# SAFETY MOMENT

**1** Introductions

**2** Safety Moment

**3** What is a PAC?  
Roles and Responsibilities

**4** Route Importance

**5** Study Overview

**6** Study Area

**7** What is a PEL?

**8** Study Process / Schedule

**9** Nearby Projects

**10** Corridor Specific Information

**11** What we Know Already. . .

**12** Purpose & Need: Feedback on  
Needs in the Corridor

**13** Stakeholder Groups

**14** Next Steps

**15** Project Contact Information

## Makeup

- Elected officials and leadership from planning agencies and local government agencies

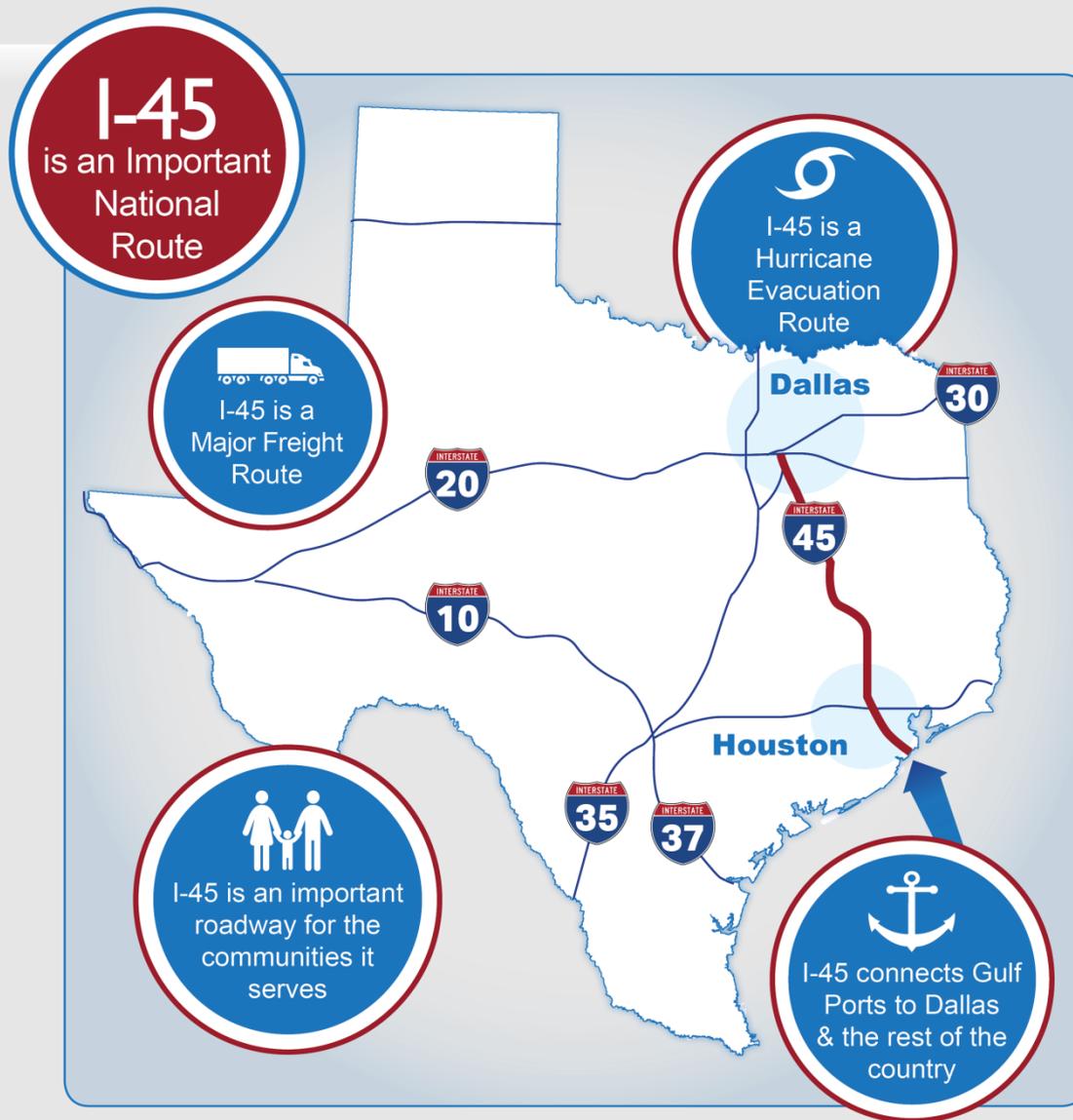
## Member Responsibilities

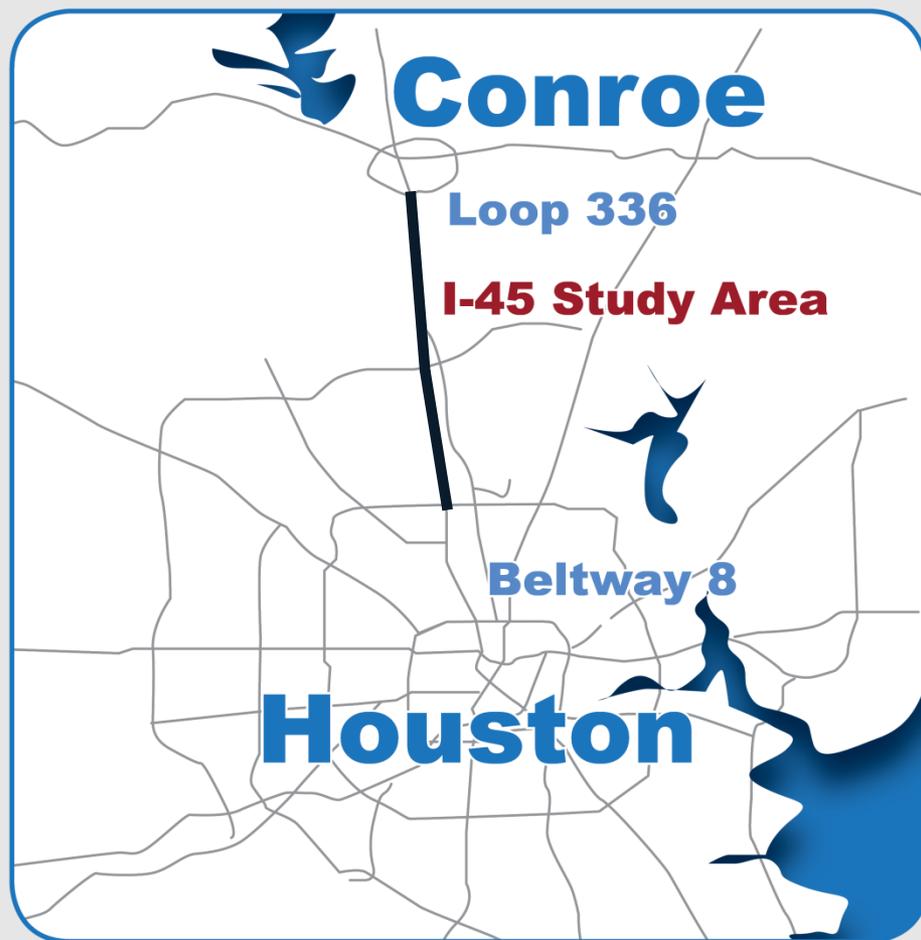
- Attend scheduled meetings
- Communicate TxDOT project information to community
- Bring community ideas and concerns to TxDOT's attention



- Provide input and feedback on issues of concern in the I-45 study area as well as on PEL study activities, collected data, and documents
- Serve as liaison to respective organizations/constituencies
- Provide feedback on the project's public involvement plans and activities
- Encourage community involvement and input in the project, and consider that input in discussions about the project

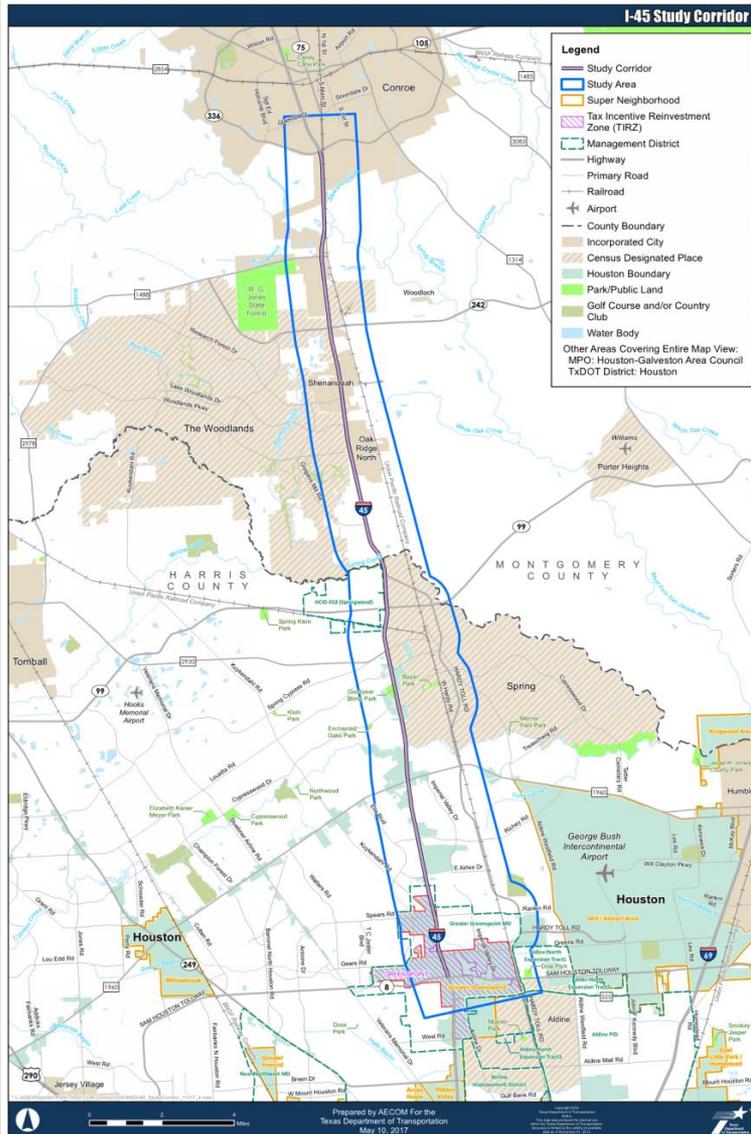
# Route Importance





## I-45N PEL Study Area

- \* **STUDY LIMITS:**  
Beltway 8 North to Loop 336 South
- \* **PROJECT LENGTH:**  
24 Miles
- \* **COUNTIES:**  
Harris, Montgomery
- \* **CITIES:**  
Houston, Woodlands, Oak Ridge North,  
Shennandoah, Conroe



## Study area includes:

- I-45 – BW 8N to Loop 336S
- Hardy Toll Road – I-45 to BW 8

## Purpose of study area:

- Evaluate existing corridor needs
- Develop environmental constraints map
- May change as alternatives are developed

# I-45 Study Area History



1950      1960      1970      1980      1990      2000      2010      2020

## I-45 Changes

**1960**  
I-45 Constructed from Spring to Conroe following US 75  
  
6 Lanes from I-610 to FM 1960  
4 Lanes North of FM 1960

**1979**  
Constaflow Bus / HOV Lane opened

**1984**  
Reversible Transit Way Opens

**2001**  
Reconstruction of I-45 from Beltway 8 to Cypresswood Dr.

**2003**  
I-45 Transitway Extension

**2012**  
Reversible HOV Lane converted to HOT Lane

**2017**  
Diamond Lanes added to I-45

## Area Changes

**1956**  
Dwight Eisenhower authorizes interstate system

**1962**  
I-610 is Connected to I-45

**1970**  
Large Scale Residential Development in Corridor

**1988**  
Hardy Toll Road Constructed

**2003**  
Beltway 8 is Connected to I-45

**2016**  
Grand Parkway (SH99) is Connected to I-45

## Current Events

  
**1963**  
Johnson is President

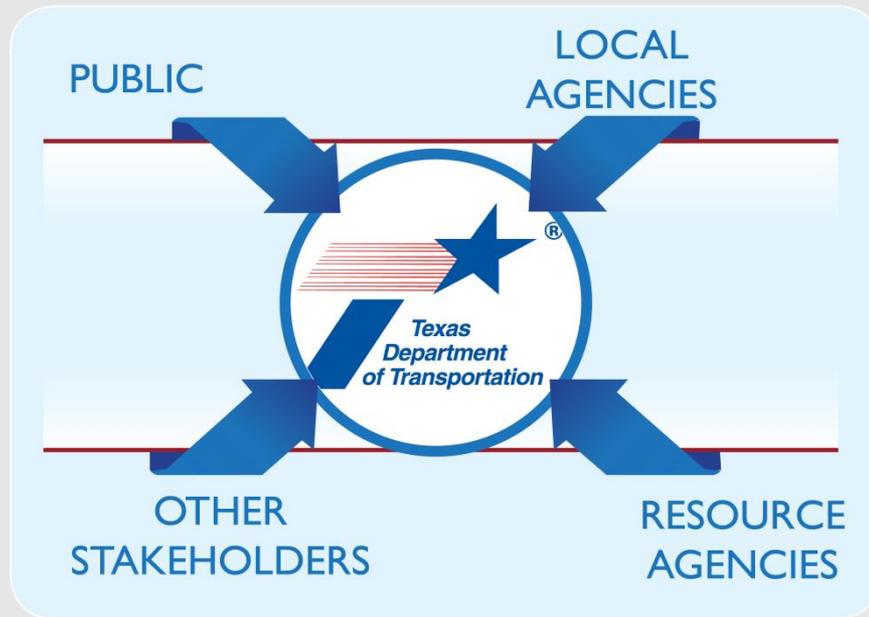
  
**1981**  
Regan is President

  
**1989**  
G.H.W. Bush is President

  
**2001**  
G.W. Bush is President

## PEL = Planning and Environmental Linkages

### PEL Coordination



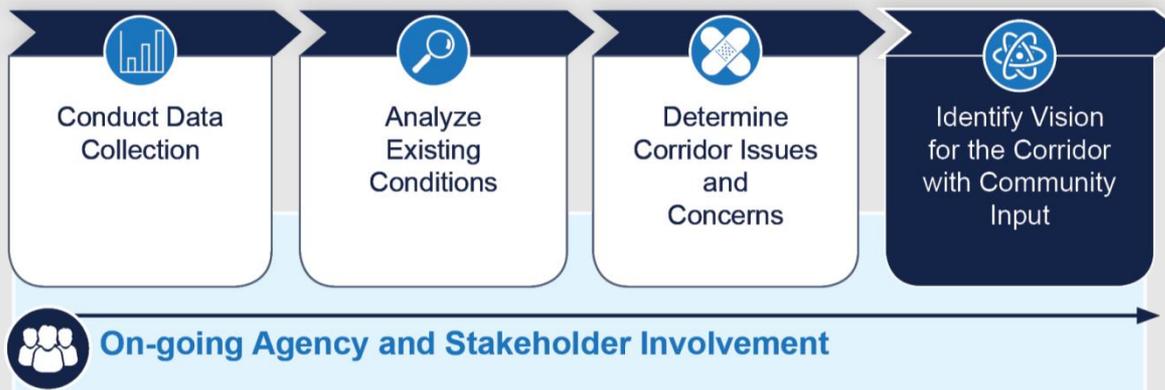
- Approach to decision making
- Early consideration of:
  - Environmental goals
  - Community goals
  - Economic goals
- Promotes efficient and cost-effective solutions
- Reduces delays in project implementation



**Communication  
& collaboration  
are key to a  
successful project!**

## PHASE I

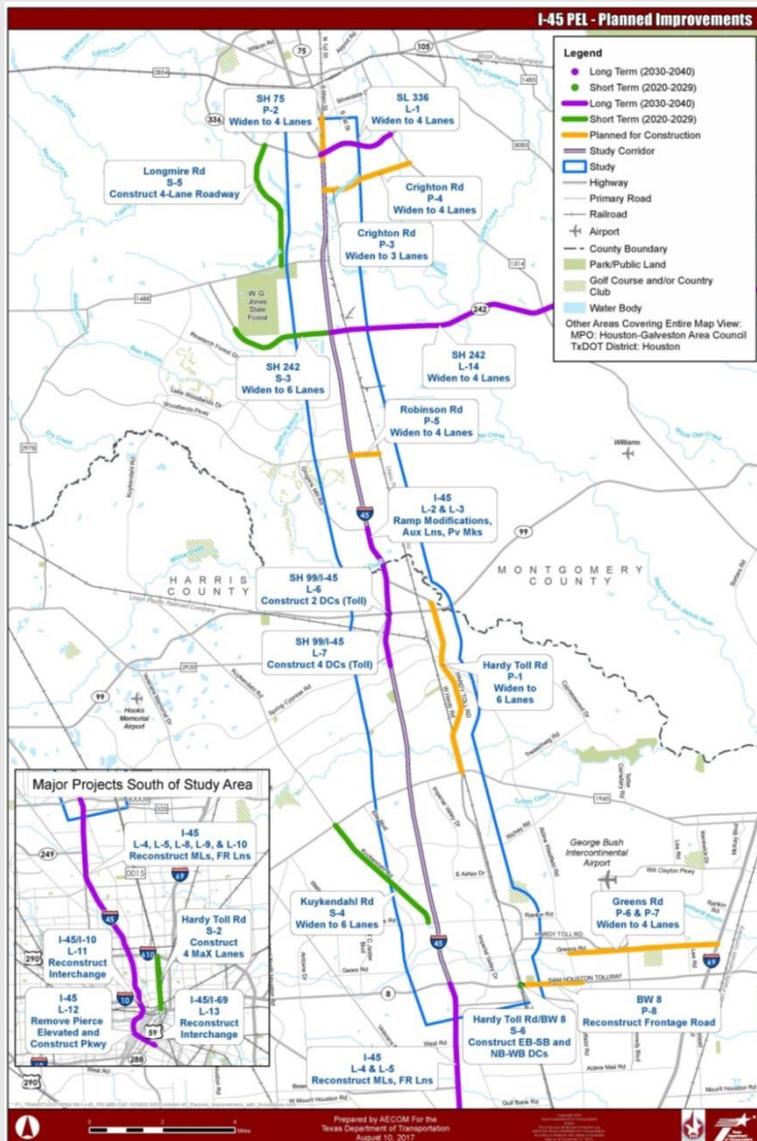
Spring 2017 - Summer 2018



## PHASE 2

Fall 2018 - Summer 2020





## Sources:

- TxDOT
- H-GAC



Does your community have any applicable projects not on the map?

## TxDOT:

- 2017 UTP (2016)
- 2017-2020 STIP (2016)
- I-45 Freight Corridor Plan (2016)
- Texas Freight Mobility Plan (2016)
- Statewide Freight Resiliency Plan (2011)
- Potential Effects of the Panama Canal Expansion on the Texas Transportation System (2011)

## H-GAC:

- 2040 RTP (2016)
- 2017-2020 TIP (2016)
- Montgomery County Thoroughfare Plan (2016)
- 2040 Pedestrian & Bicycle Plan (2015)
- South County Mobility Plan (2015)
- Regional Goods Movement Study (2011)
- Regional Commuter Rail Connectivity Study (2008)

## NHHIP:

- NHHIP Draft EIS (2017)
- North-Hardy Planning Alternatives Analysis Report (2005)

## TTI:

- Living, Working and Moving Around Houston (2017)
- Texas Transportation Poll (2016)
- North Freeway Transitway: Evaluation of the Second Year of Barrier-Separated Operation (1988)

## The Woodlands Township:

- Origin-Destination Study (2017)
- Transit Plan (2015)
- Major Thoroughfare Access to SH 99 (2014)

## City of Conroe:

- Comprehensive Plan (2007)

## Transportation Research Record:

- Development of a Freeway Traffic Management Project through PPP (1993)

## FEMA:

- Mass Evacuation: The Harris County, Texas, Office of Homeland Security and Emergency Management's Interactive Hurricane Evacuation Map (2010)





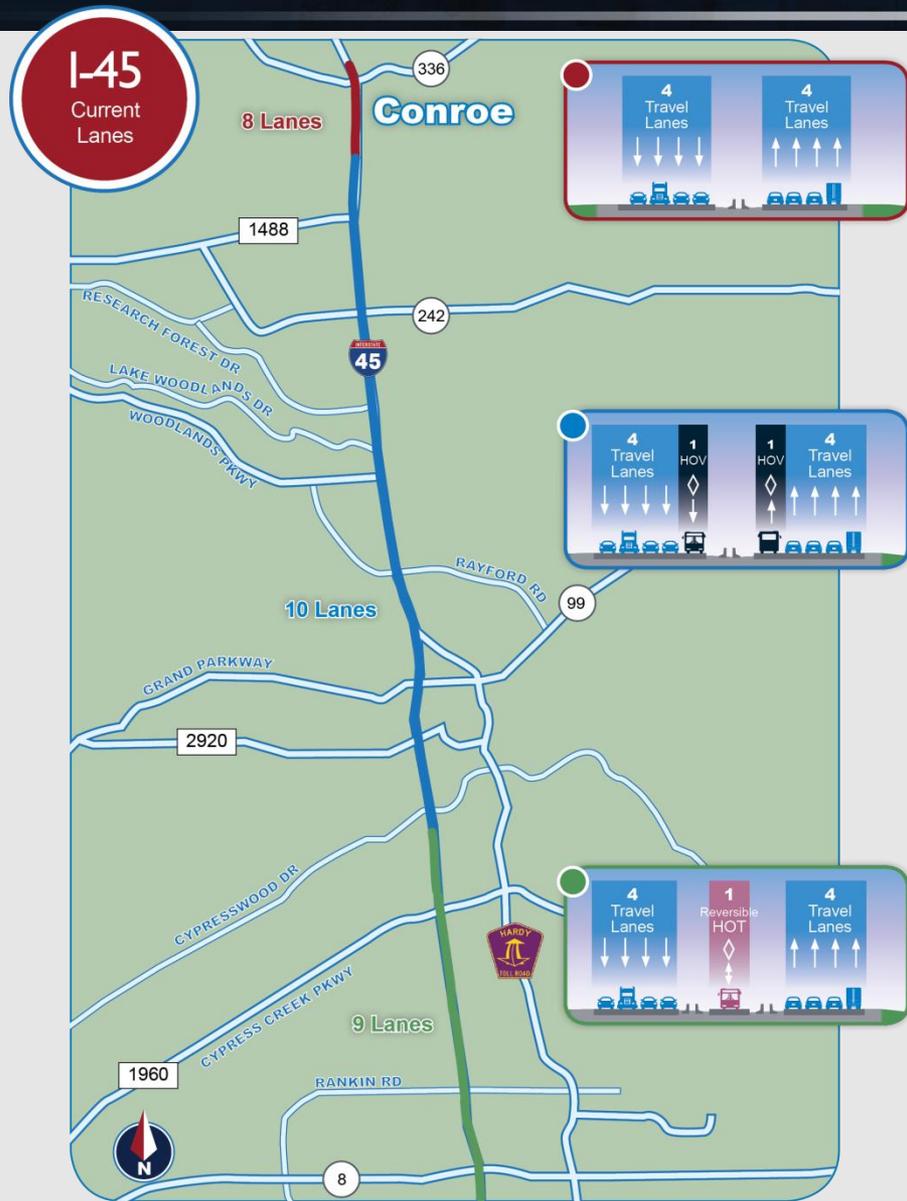
# CORRIDOR SPECIFIC INFORMATION

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- Traffic volumes
- Travel time
- Origin / destination
- Safety data
- Freight data
- Geometric design data
- Environmental data
- Previous studies
- Planned developments and improvements

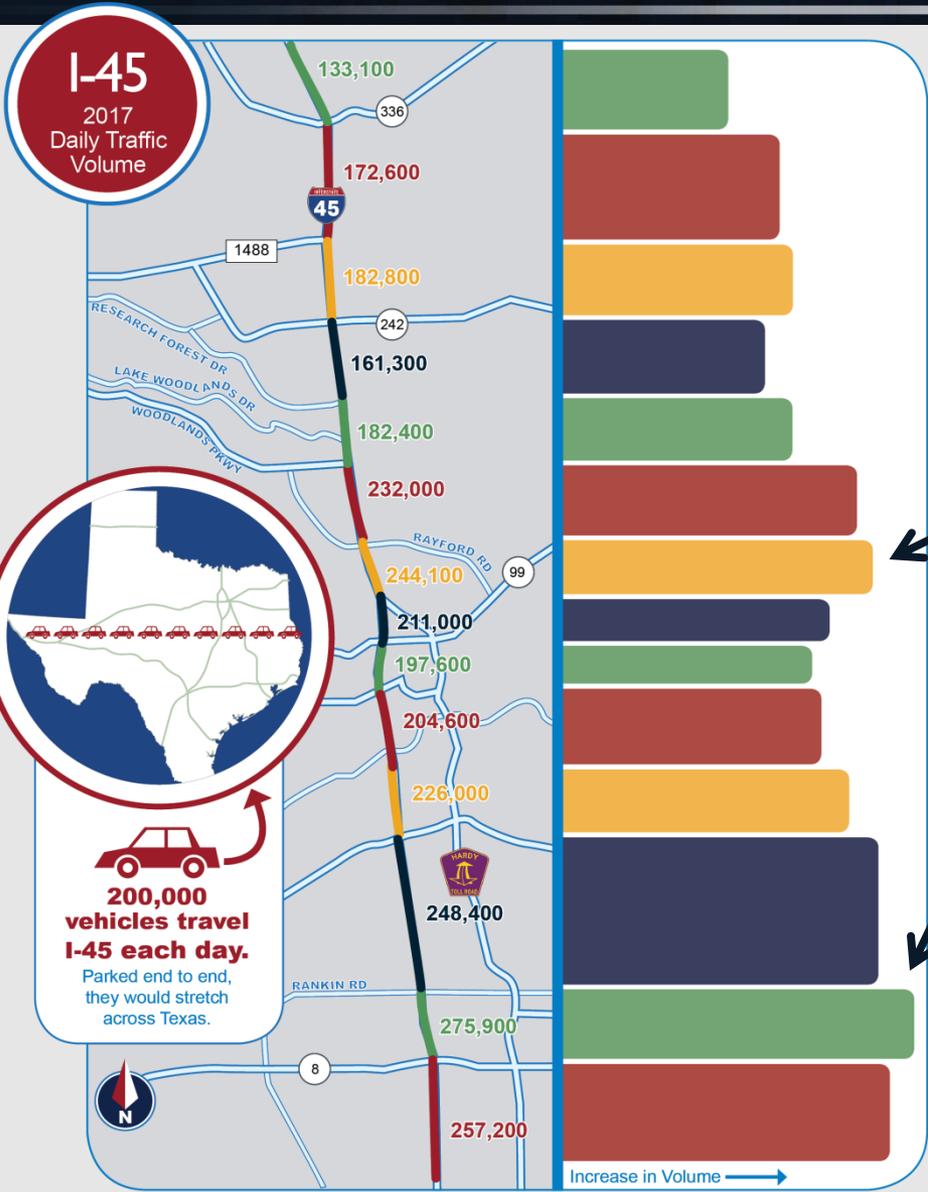


# Lanes in the Corridor



- I-45 has 4 general purpose lanes in each direction along corridor
- Diamond lane in both directions north of Cypresswood Drive
- 1 reversible HOT lane south of Cypresswood Drive
- I-45 has 3-lane frontage roads in each direction

# Traffic Volumes



- Traffic decreases at the northern end of the corridor.
- Highest traffic is:
  - Between Hardy Toll Road and Woodlands Pkwy
  - Near BW 8

# What We Know Already (Traffic)



**I-45**  
Congestion will  
get worse in  
the future



**In 2013 Houston's economy grew faster  
than any other city in the U.S.  
By 2040 the Houston-Galveston Area Council is expecting ...**

**1.5M**  
Additional  
jobs

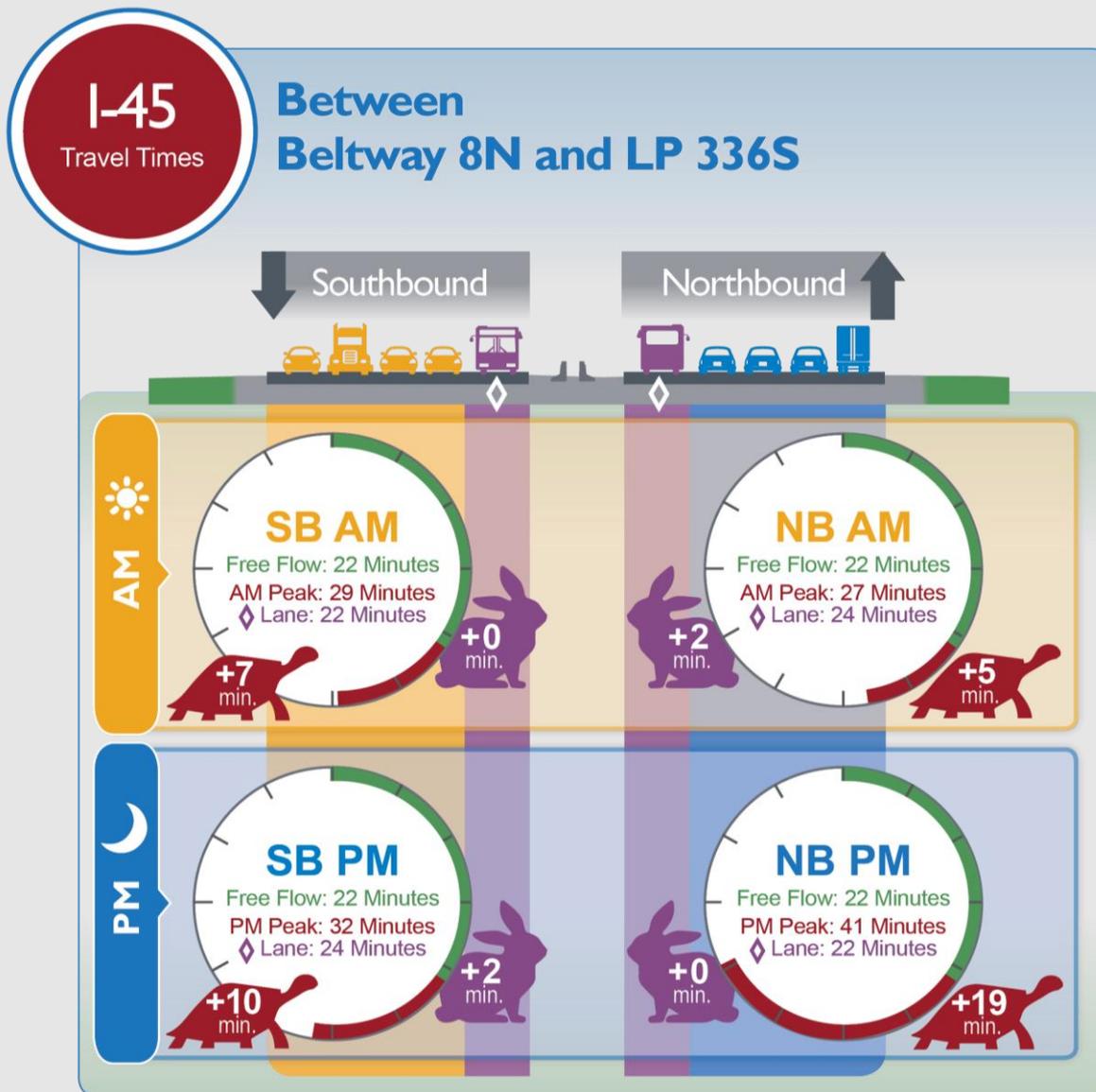
**4M**  
More  
population

**60%**  
Increase in  
traffic

**100%**  
Freight  
movement  
increase

Source: H-GAC 2040 RTP

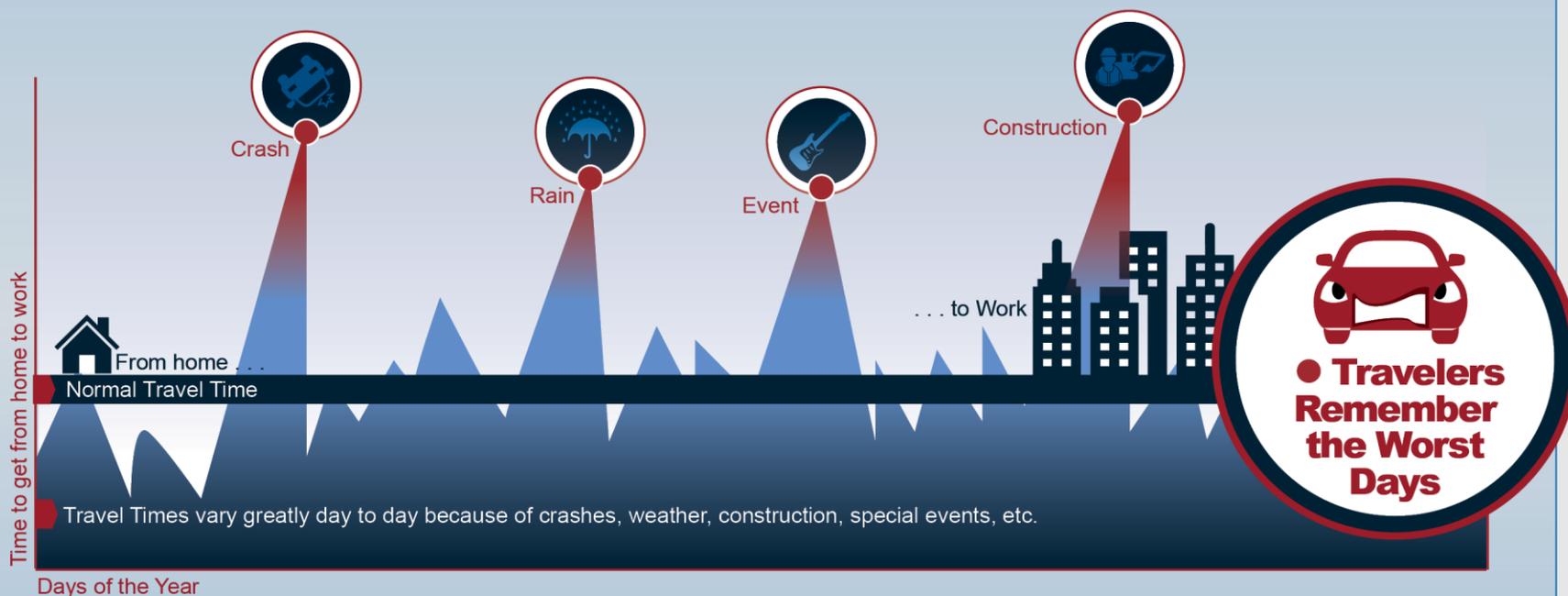
# What We Know Already (Traffic)



## What is travel time reliability?

Reliability measures the variability of travel times for a trip.

Answers the question: Can I count on getting to my destination on time?



## How to Measure Reliability

### Planning Time Index (PTI)



PTI represents the travel time needed to ensure on-time arrival 95% of the time



A PTI of 2.0 means you need twice as much time compared to driving the speed limit



20 Minutes  
X 2.0 PTI  
40 Minutes



**1.0-1.3**  
**Reliable**



**1.3-2.0**  
**Moderately**  
**Reliable**



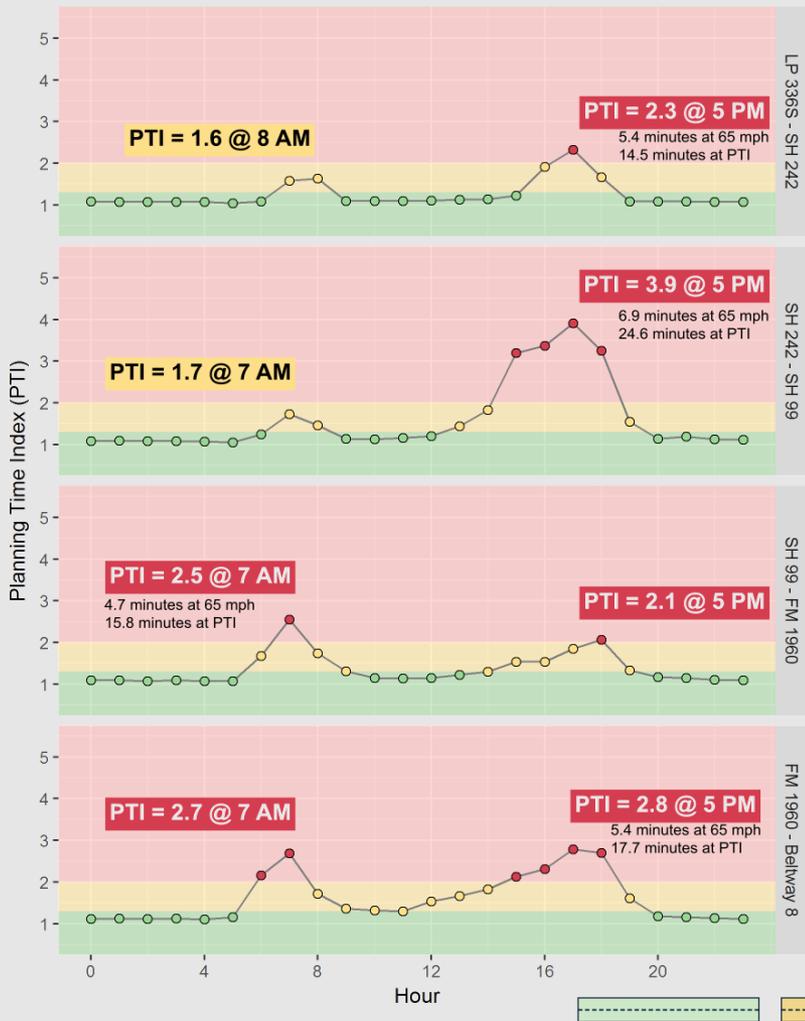
**2.0 and above**  
**Unreliable**

# What We Know Already (Traffic)



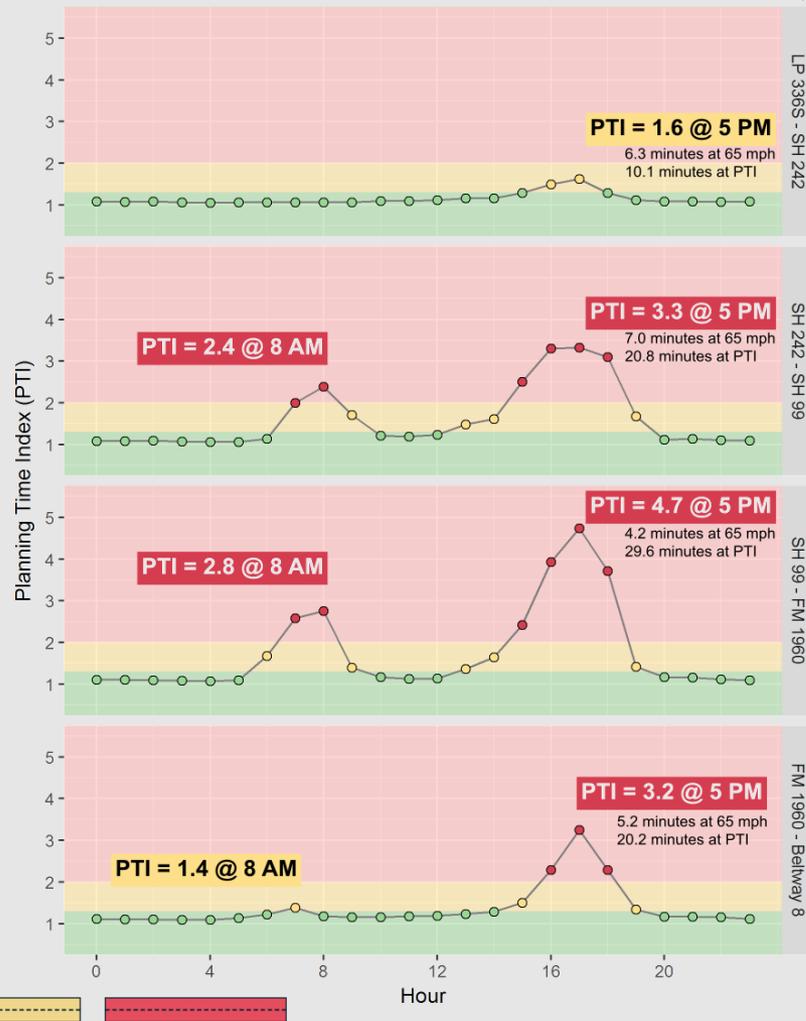
## SB I-45 Planning Time Index

Weekdays, Mon-Fri 2016



## NB I-45 Planning Time Index

Weekdays, Mon-Fri 2016



SB I-45 unreliable 8 hours each day

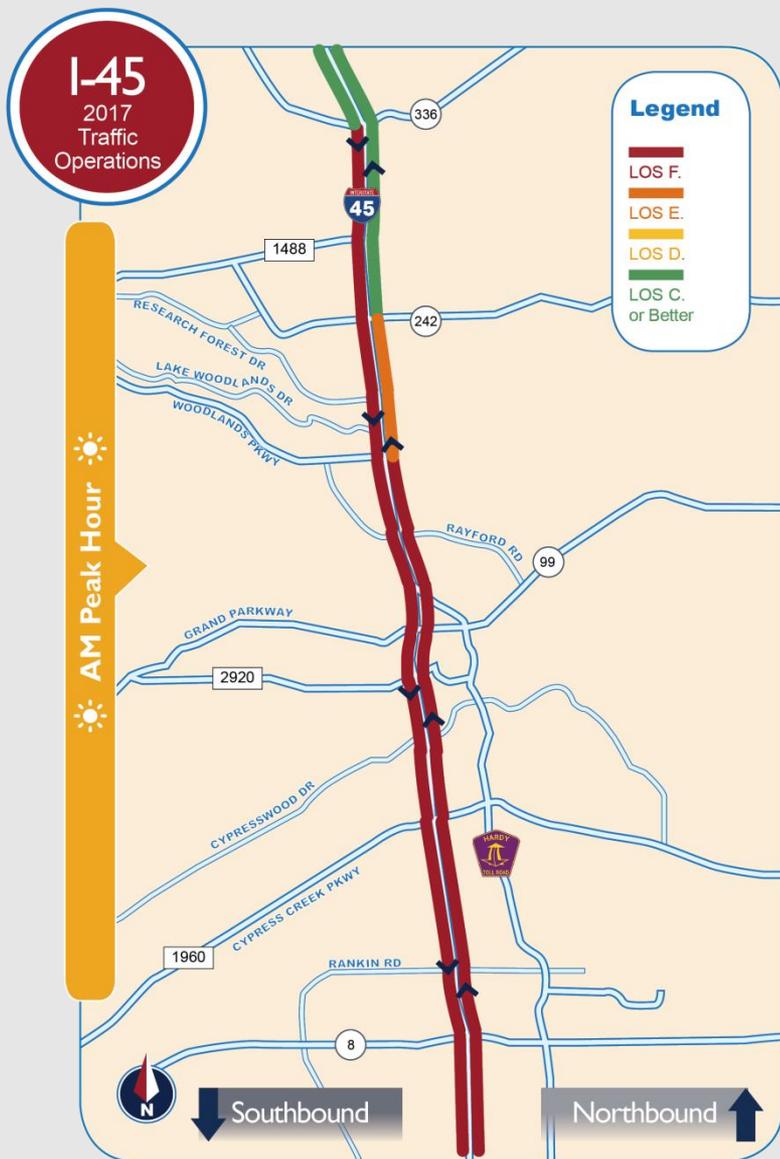
**1.0-1.3**  
Reliable

**1.3-2.0**  
Moderately  
Reliable

**2.0 and above**  
Unreliable

NB I-45 unreliable 6 hours each day

# What We Know Already (Traffic)



# What We Know Already (Safety)



## I-45 Safety Statistics

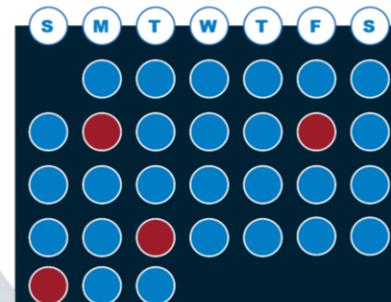
Over 5 years  
there have been....

**2,832 Injury Crashes**



Or, on average  
eleven crashes per week result in injury

**228 Fatal or  
Incapacitating Crashes**



Or, on average  
four crashes per month  
are fatal or incapacitating

**11,992 Total  
Crashes**



Or, on average  
six crashes per day

We can do  
**Better!**

All crashes listed are from 2012 - 2016

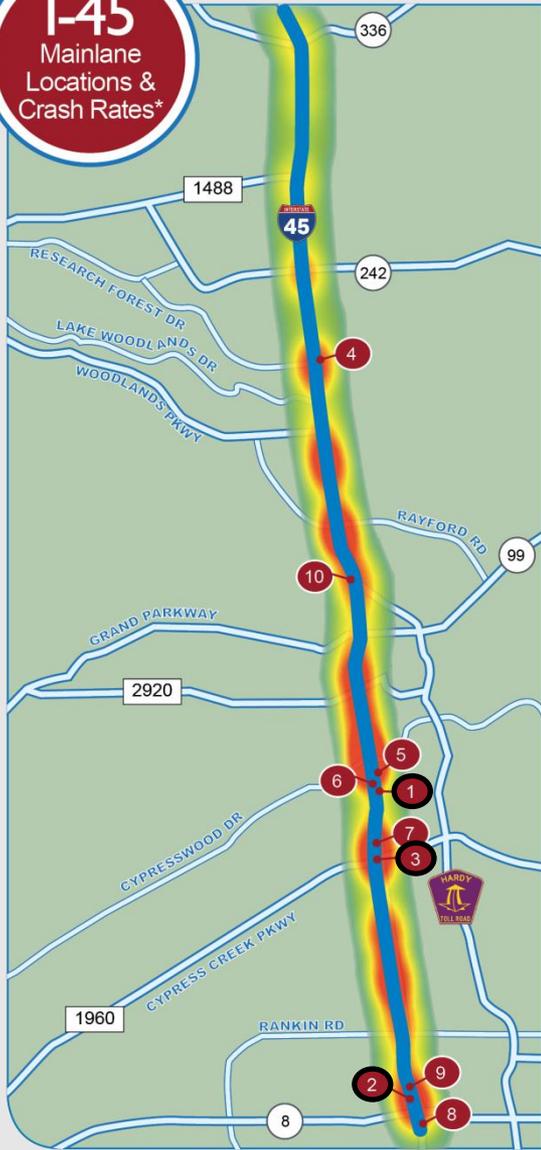
Statistics represent the total number of crashes  
on I-45 mainlanes and frontage roads

The days of the week shown in the figures above were chosen randomly. Highlighted days are no less safe than any other day of the week, and were chosen for illustration purposes only.

# What We Know Already (Safety)



**I-45**  
Mainlane  
Locations &  
Crash Rates\*



## Top Ten Crash Locations

- 1 NB I-45 mainlanes from Cypresswood Dr. to Louetta Rd. **346.2**
- 2 SB I-45 on-ramp from Greens Rd. **289.6**
- 3 NB I-45 off-ramp to Hollow Tree St. **162.3**
- 4 NB I-45 on-Ramp from Lake Woodlands Dr. **161.4**
- 5 NB I-45 off-ramp to Luetta Rd. **160.9**
- 6 SB I-45 mainlanes from Louetta Rd. to Cypresswood Dr. **155.5**
- 7 NB I-45 on-ramp from reversible HOV lane **143.9**
- 8 NB I-45 off-ramp to BW 8 WB **140.3**
- 9 NB I-45 off-ramp to Greens Rd. **140.3**
- 10 SB I-45 mainlanes from Hardy Toll Rd. to SH 99 **138.5**

Average I-45 Mainlane  
Crash Rate **73.4**

- I-45 mainlane crash hot spots mostly in southern part of corridor

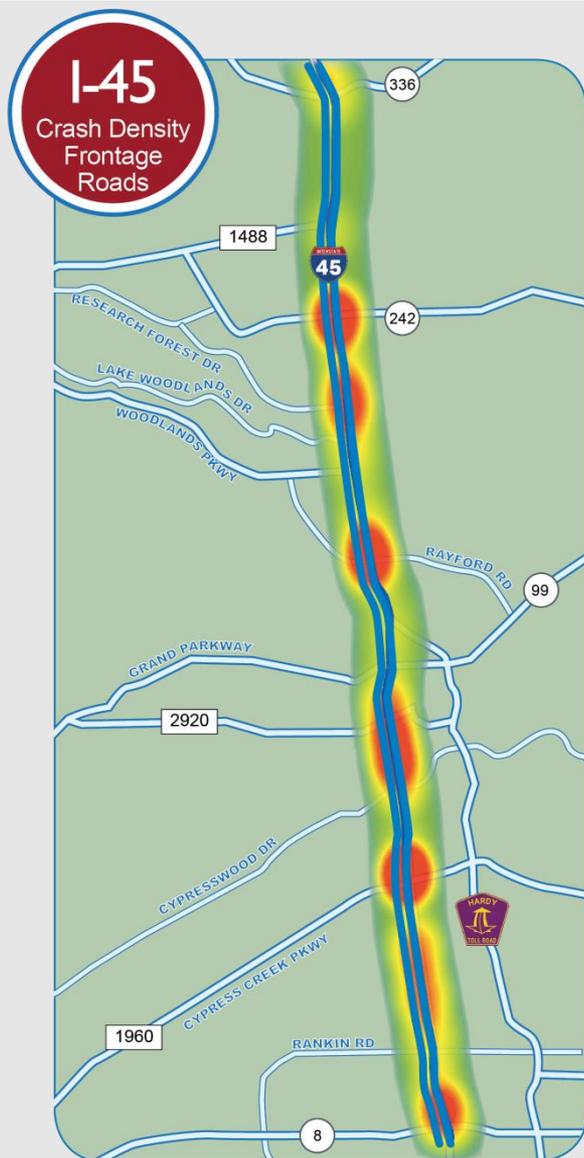


## Crash Density

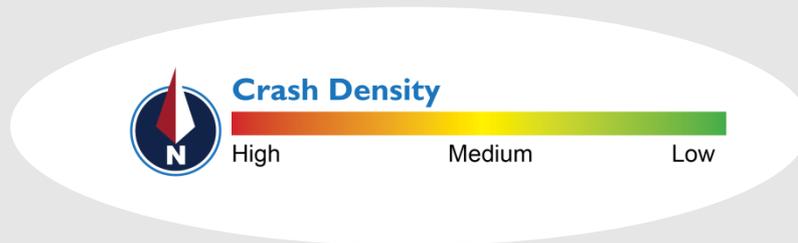


\*Crash rates are the number of crashes per hundred million vehicle miles traveled

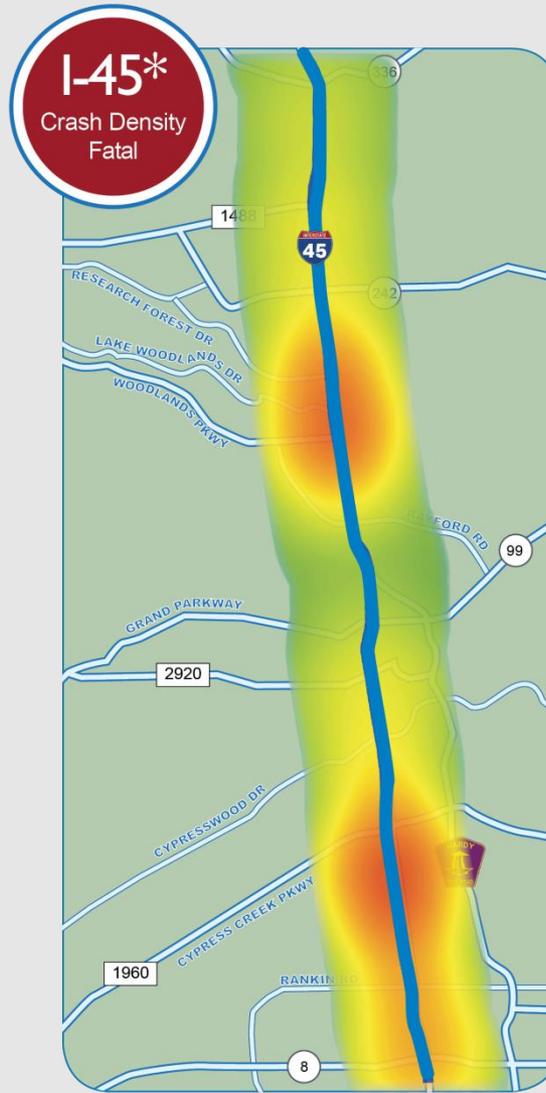
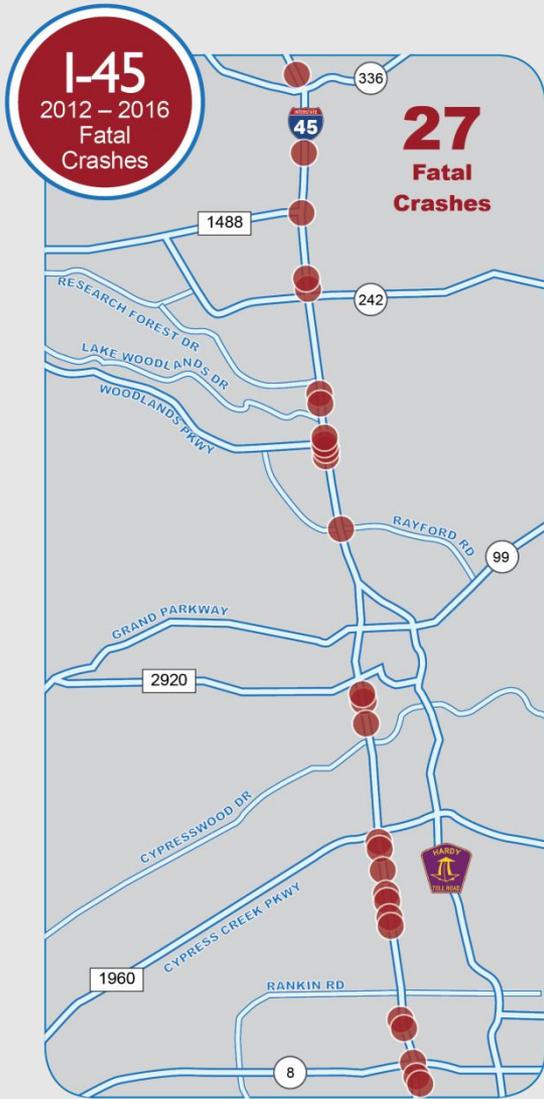
# What We Know Already (Safety)



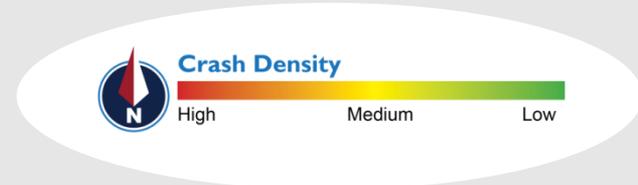
- Frontage Road hot spots at:
  - FM 1960
  - FM 2920 / Cypresswood
  - Sawdust / Rayford
  - Research Forest
  - SH 242



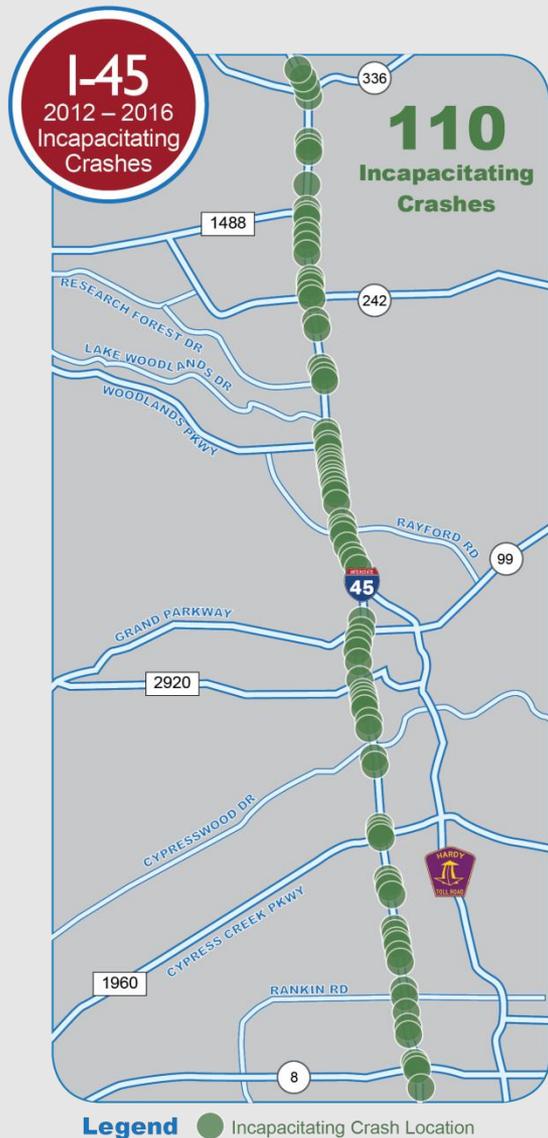
# What We Know Already (Safety)



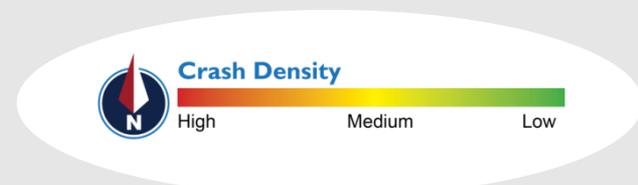
- Mainlane fatal crash hot spots at:
  - Woodlands Pkwy
  - Airtex Dr to FM 1960



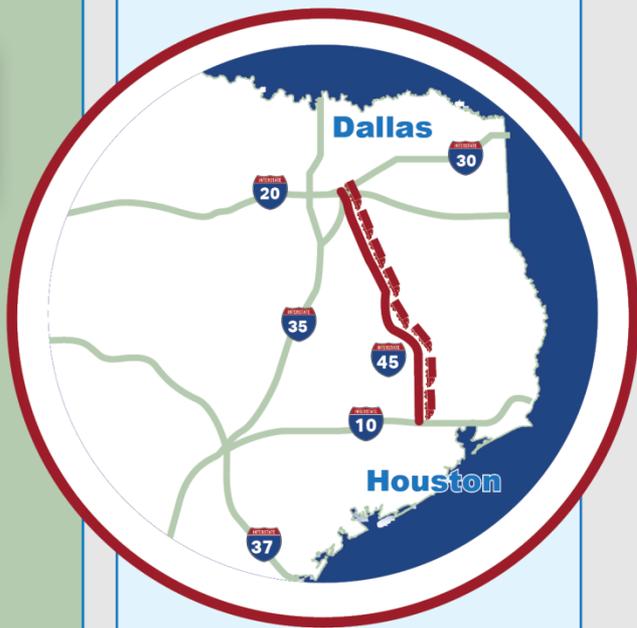
# What We Know Already (Safety)



- Mainlane incapacitating crash hot spots at:
  - SH 242
  - Rayford Rd/Sawdust Rd to Lake Woodlands Dr
  - Spring Cypress Rd
  - Rankin Rd to Airtex Dr



# What We Know Already (Freight)



\*Source: TTI Most Congested Roadways  
 \*\*Source: H-GAC Regional Goods Movement Commodity Flow - 2010



- **A clear, concise, well-justified Purpose & Need is the foundation of every transportation project**
  - A project's "**Need**" is an identified transportation deficiency or problem
  - A project's "**Purpose**" is the set of objectives that will be met to address the transportation deficiency
- Consider H-GAC's defined regional Goals & Objectives to identify the I-45 corridor needs in areas such as:
  - **Safety**
  - **Mobility**
  - **Asset preservation**
  - **Freight mobility / economic development**



From H-GAC

Two overlapping red speech bubbles. The front bubble contains a white question mark.

# What are the Needs?

## Elected Officials

US Senators  
Texas State Senators  
Texas State House of Representatives  
Harris County  
Mongomery County  
City of Conroe  
City of Oak Ridge North  
City of Shenandoah  
City of Houston  
The Woodlands Township

## Agencies

W.G. Jones State Forest - Texas A&M  
Forest Service

## School Districts

Aldine Independent School District  
Conroe Independent School District  
Klein Independent School District  
Spring Independent School District

## Chambers

Conroe/Lake Conroe Chamber of Commerce  
Houston Northwest Chamber of Commerce  
Intercontinental Chamber of Commerce  
North Houston Association  
Spring-Klein Chamber of Commerce  
The Woodlands Area Chamber of Commerce

## Management Districts

Greater Greenspoint Redevelopment Authority  
Harris County Improvement District 18  
North Houston District

## Neighborhood Associations

City of Houston Department of Neighborhoods  
The Woodlands Development Company

## Transportation

Gulf Coast Rail District  
Union Pacific Railroad  
City of Houston Airport System

## Emergency Management

Harris County  
Montgomery County  
City of Houston

## Police Departments

Harris County  
Montgomery County

## Fire/EMS Departments

South Montgomery County  
Cypress Creek EMS



**Any other  
stakeholder  
groups?**

- Stakeholder meeting: December 14, 2017
- Incorporate PAC & Stakeholder input in the study Purpose & Need
- Agency meeting: January 2018
- Continue to identify current and future corridor conditions and needs
- Develop Purpose & Need
- Public open houses: Spring 2018
- Next PAC meeting: Spring 2018
  - Review current and future corridor condition and needs
  - Provide update on Purpose & Need

## Who can I contact?

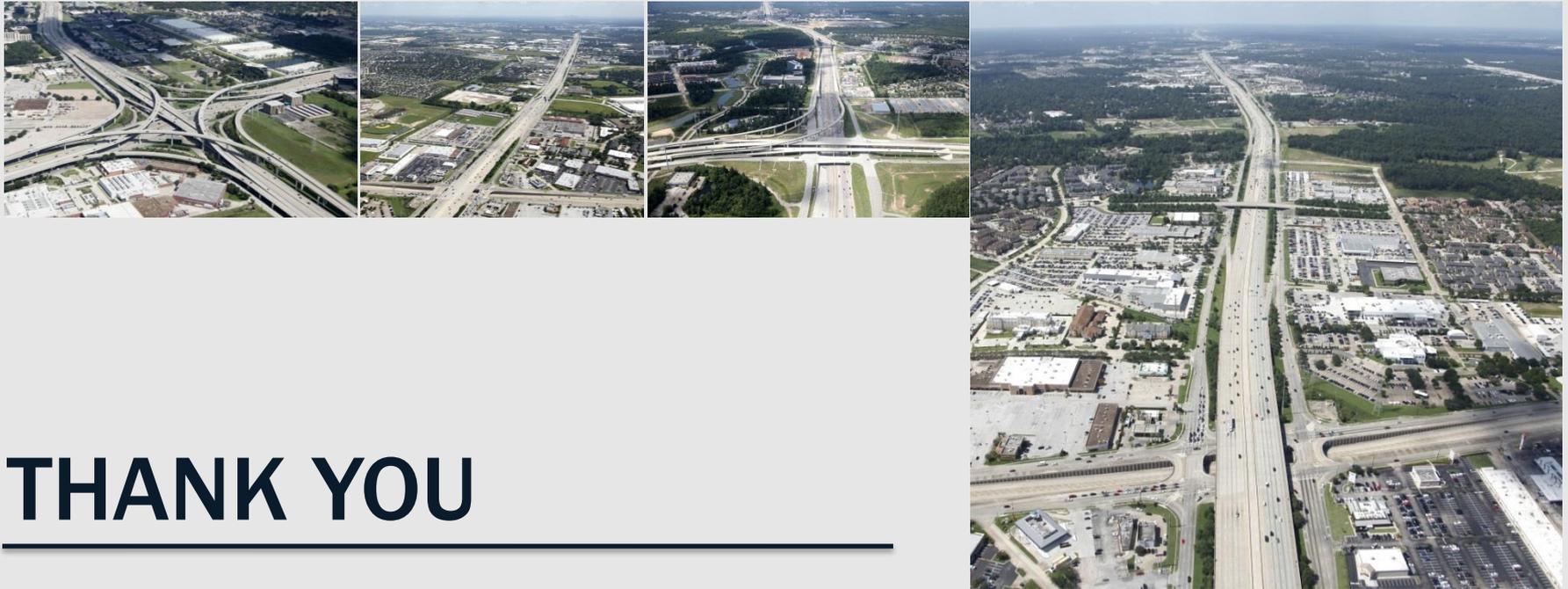
Patrick Gant, PE  
Transportation  
Engineering Supervisor

7600 Washington Ave  
Houston, TX 77007  
Tel. 713-802-5274  
patrick.gant@txdot.gov

For project website, visit:

<http://www.txdot.gov/inside-txdot/projects/studies/houston/houston-planning-and-linkage-studies.html>

Go to [www.txdot.gov](http://www.txdot.gov) and search for PEL!



**THANK YOU**

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