



WELCOME

Why Am I Here?

- Learn and ask questions about the proposed project
- Review the project material
- Provide comments and feedback

The future environmental review, consultation, and other actions required by applicable federal environmental laws for this project will be carried out by TxDOT pursuant to 23 U.S.C 327 and a Memorandum of Understanding dated Dec. 16, 2014, and executed by FHWA and TxDOT





What is a Planning and Environmental Linkages (PEL) Study?

PEL provides:

- An approach to decision making
- Early consideration of environmental, community, and economic goals
- A way to carry goals through future project phases

PEL benefits:

- Identification of efficient and cost-effective solutions
- Fewer delays in project implementation
- Information for use in future project phases, including the environmental review process

Who participates in a PEL?

PUBLIC

LOCAL AGENCIES



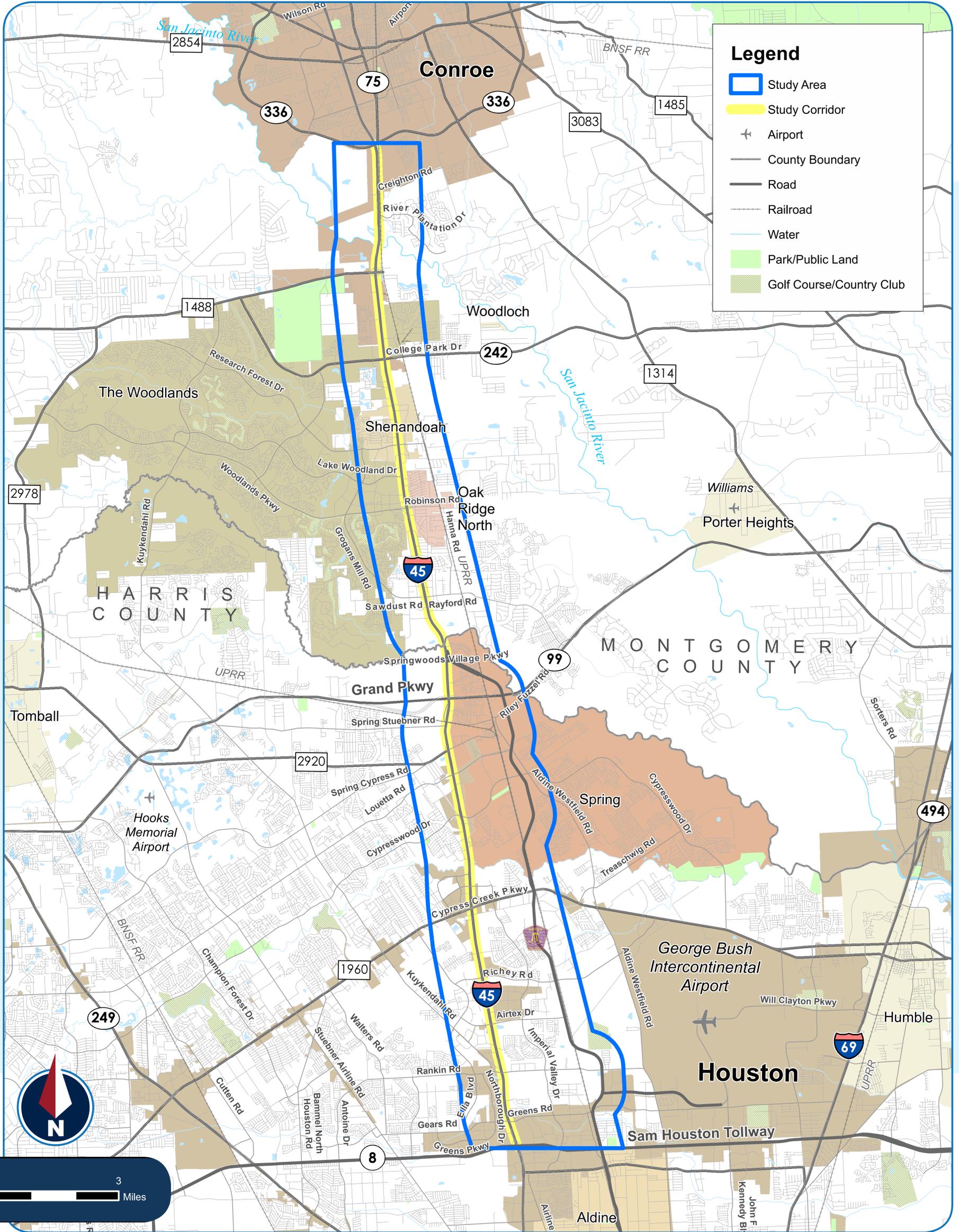
OTHER STAKEHOLDERS

RESOURCE AGENCIES



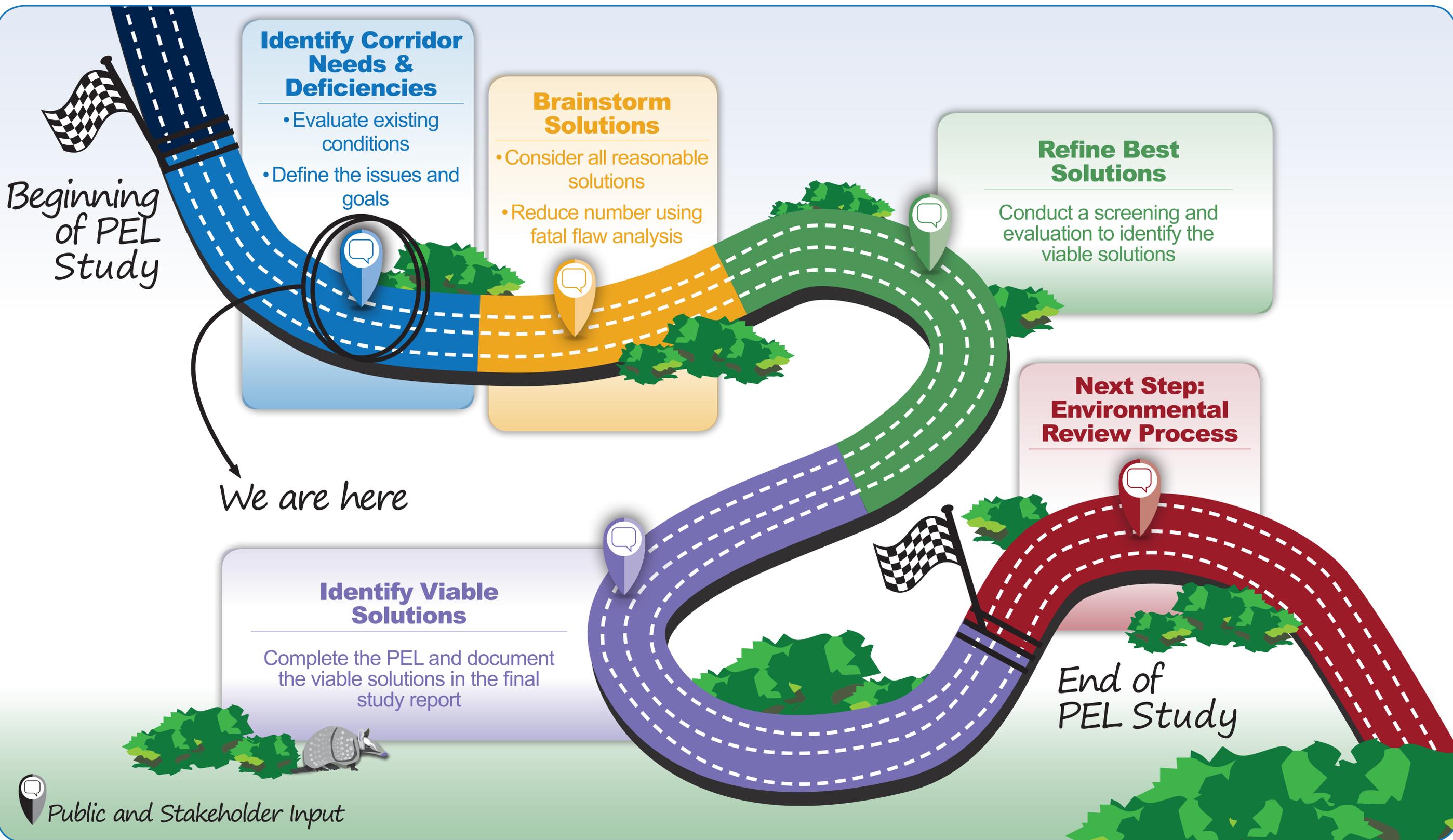


I-45N Study Area





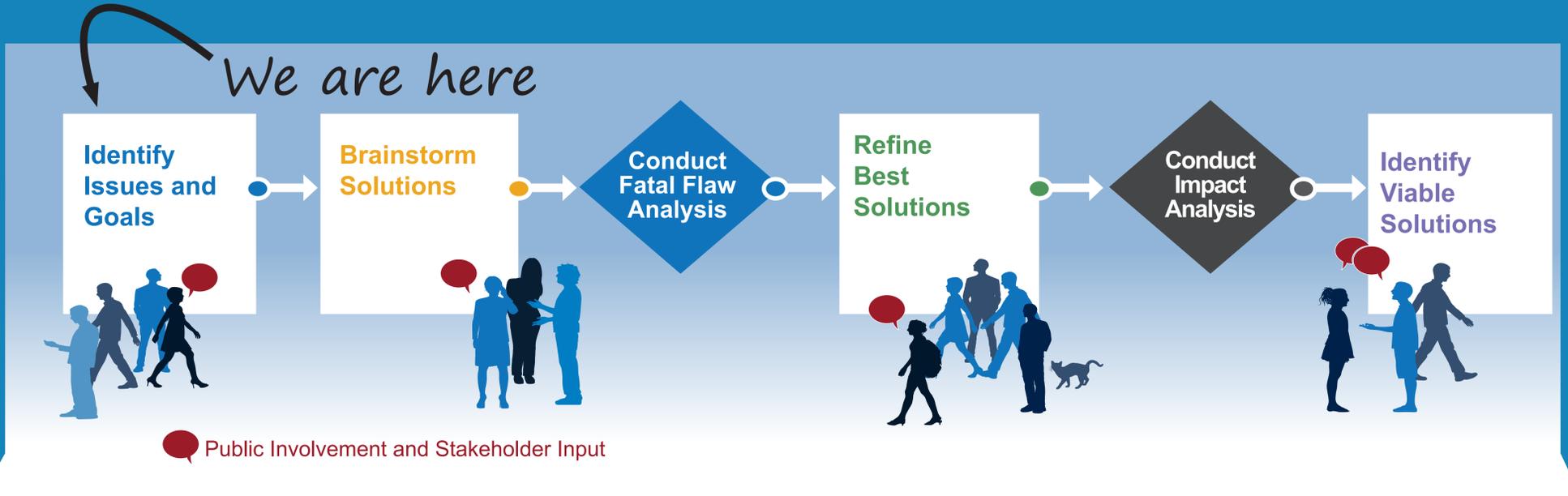
PEL Process



Current Step

PEL Study: Now - Summer 2020

Identify and prioritize possible solutions



Future Steps (if build solutions are identified)

Environmental Review Process

Refine projects to avoid, minimize, or mitigate environmental impacts

- Carry Purpose & Need forward from PEL Study
- Refine range of alternatives
- Compare alternatives and identify a preferred alternative
- Collaborate with agencies to determine mitigation efforts
- Complete environmental documents
- More public involvement

Design and Land Acquisition

How are we going to make improvements?

- Prepare detailed engineering and design
- Make utility adjustments
- Gather detailed field survey data
- Acquire right-of-way property if needed

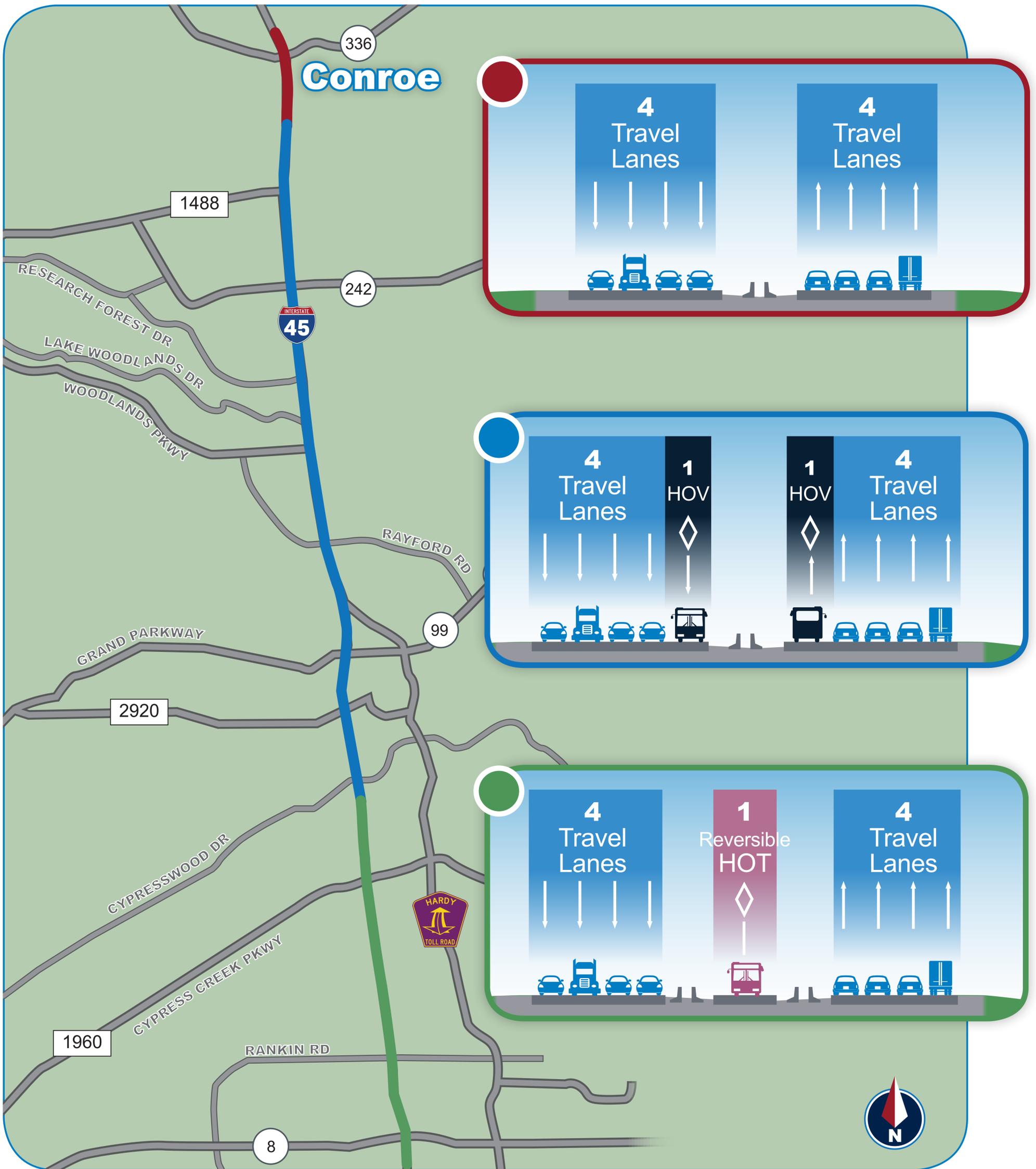
Construction

Build proposed improvements

- Staging & moving traffic
- Construction activities
- Opening of completed project

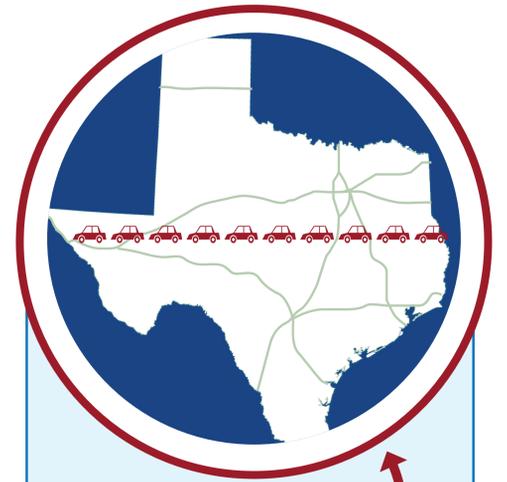
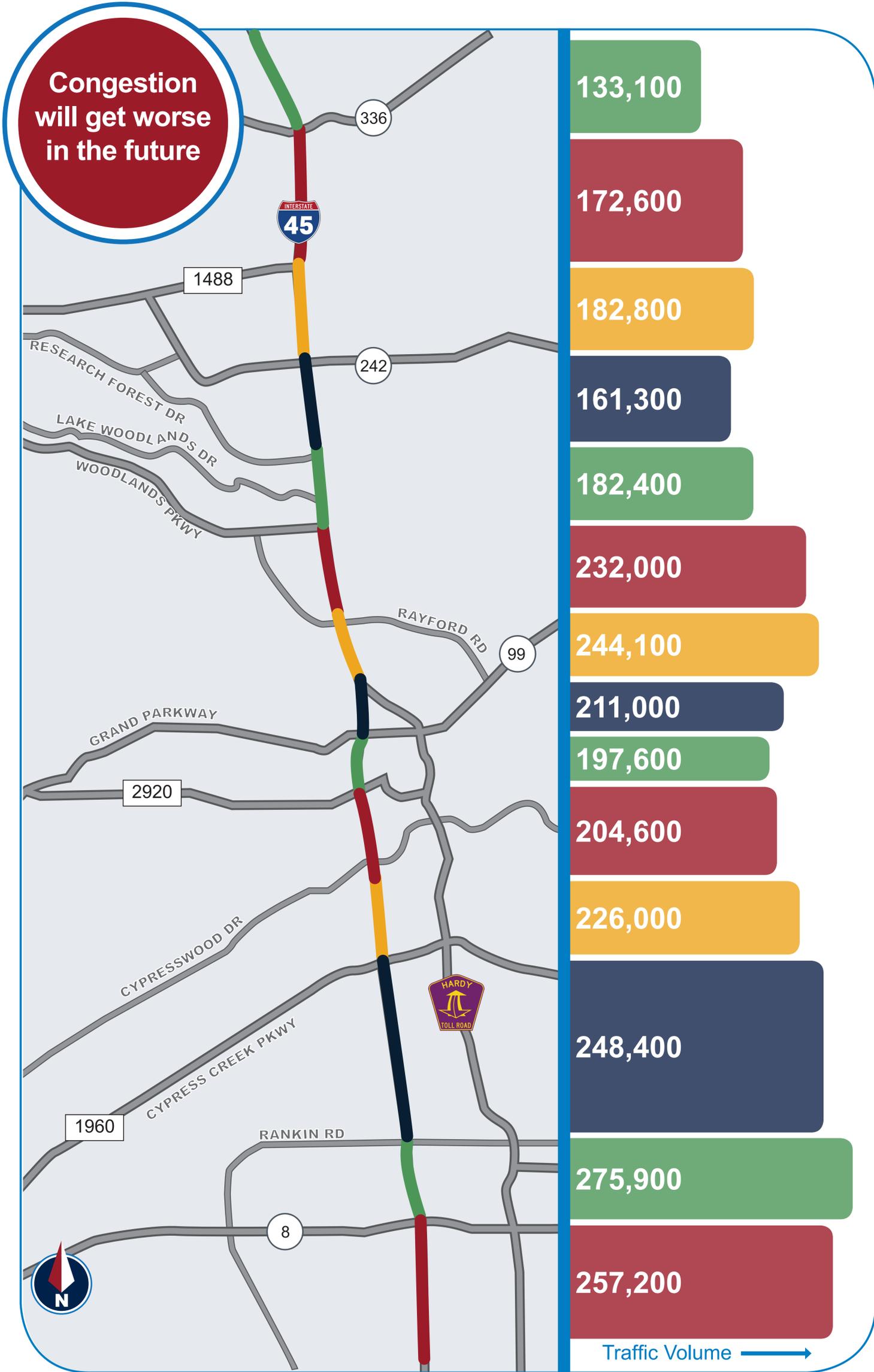


Existing I-45N Travel Lanes





2017 Daily Traffic Volumes



200,000 vehicles travel I-45N each day.

Parked end to end, they would stretch across Texas.



In 2013 Houston's economy grew faster than any other city in the U.S.

By 2040 the Houston-Galveston Area Council is expecting ...

4M
More population

60%
Increase in traffic

100%
Freight movement increase

1.5M
Additional jobs





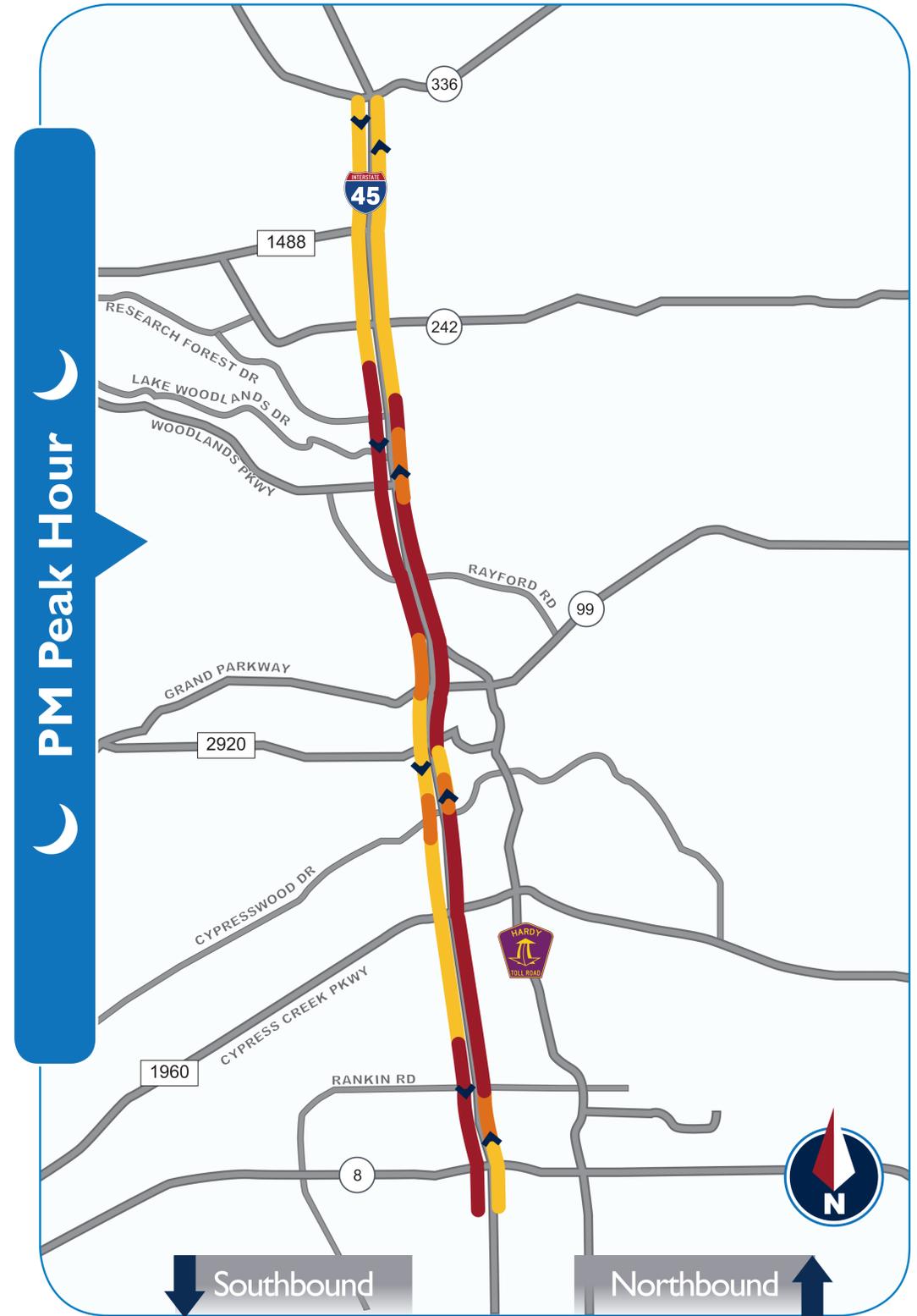
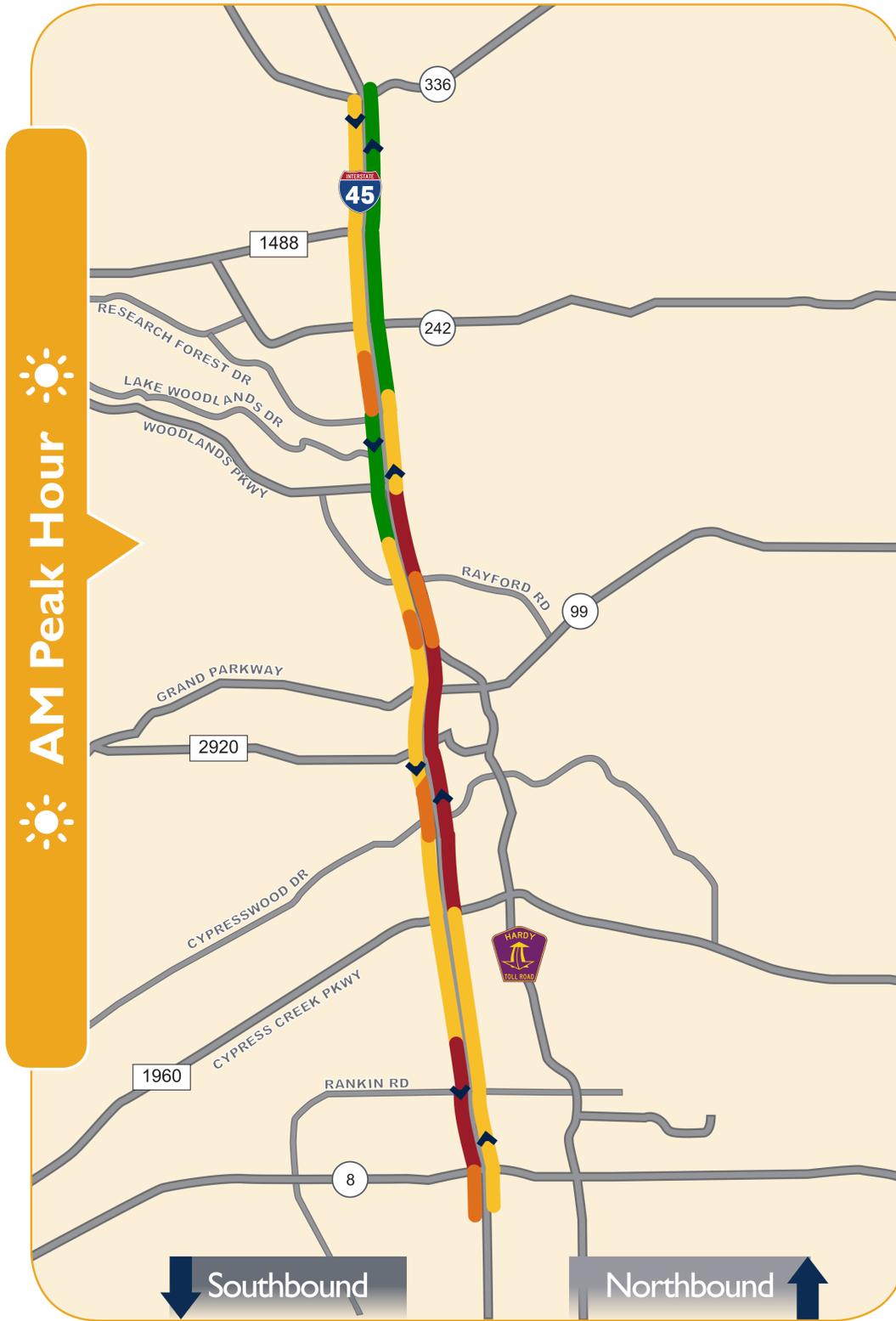
Existing 2017 Traffic Operations - Mainlanes

Mainlane Traffic Operations:

Traffic operations along the I-45N mainlanes were given a grade, similar to the academic grading scale.

The grade represents typical congestion, with **F as heavy congestion**, **D/E as moderate congestion**, and **A/B/C as low congestion**.

Grading Scale





Existing 2017 Traffic Operations - Intersections

Signalized Intersection Traffic Operations:

Traffic operations at signalized intersections were given a grade, similar to the academic grading scale, with **A being the best** and **F the worst**. The grade represents how long vehicles typically wait at an intersection.

Grading Scale

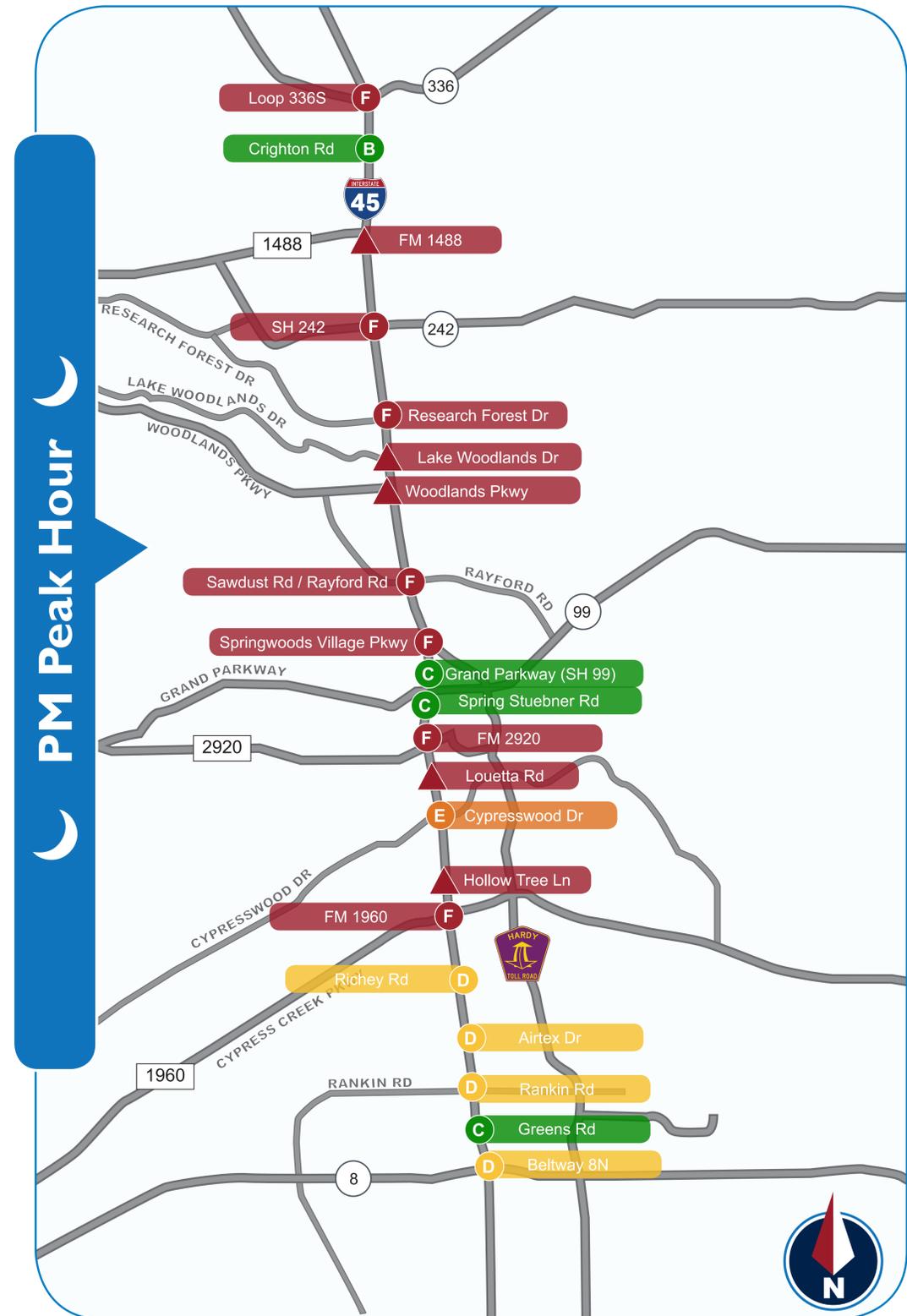
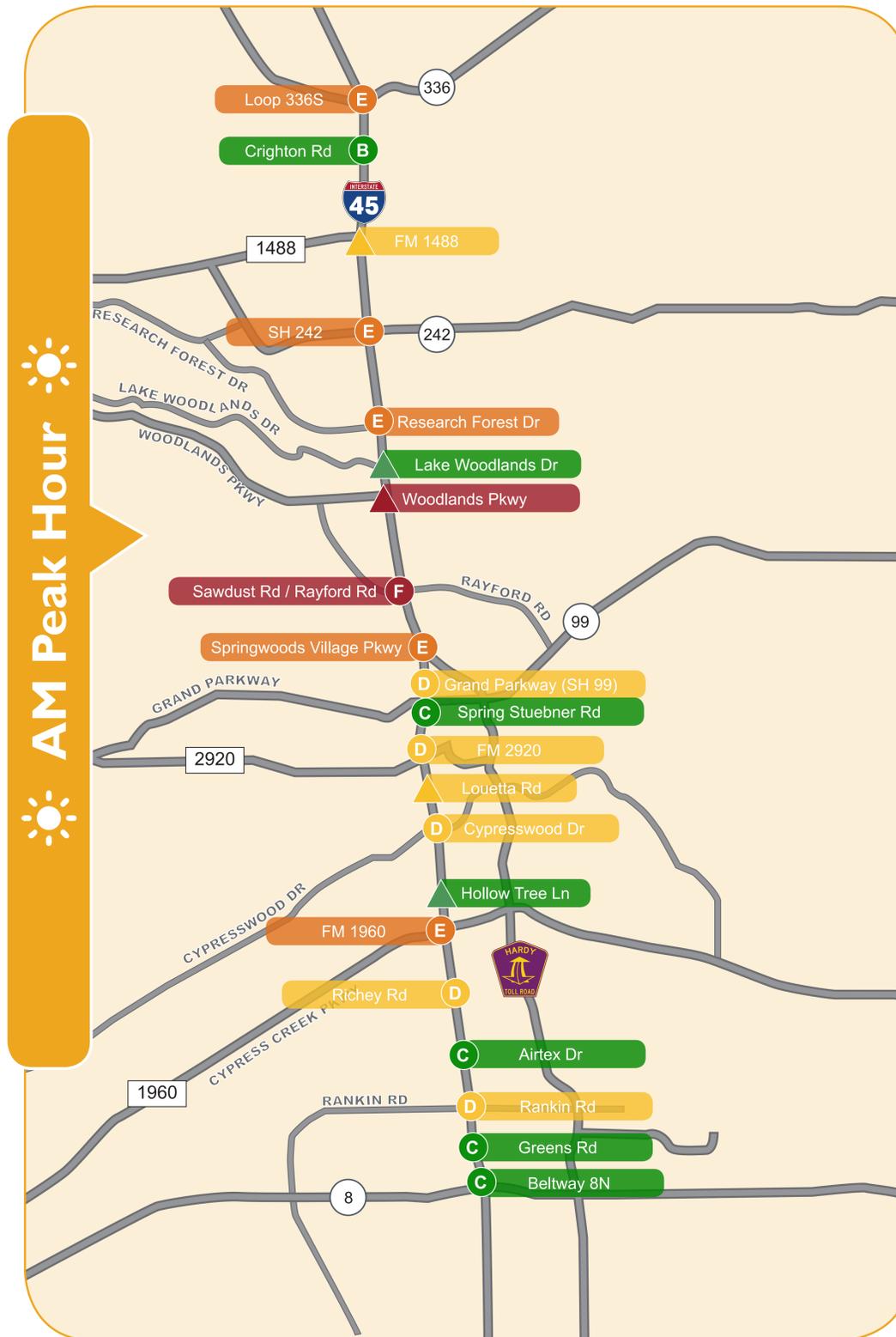


Unsignalized Intersection Traffic Operations:

Five unsignalized intersections within the corridor experience congestion for a variety of reasons including adjacent intersections, high traffic volumes, and nearby driveways.

Legend

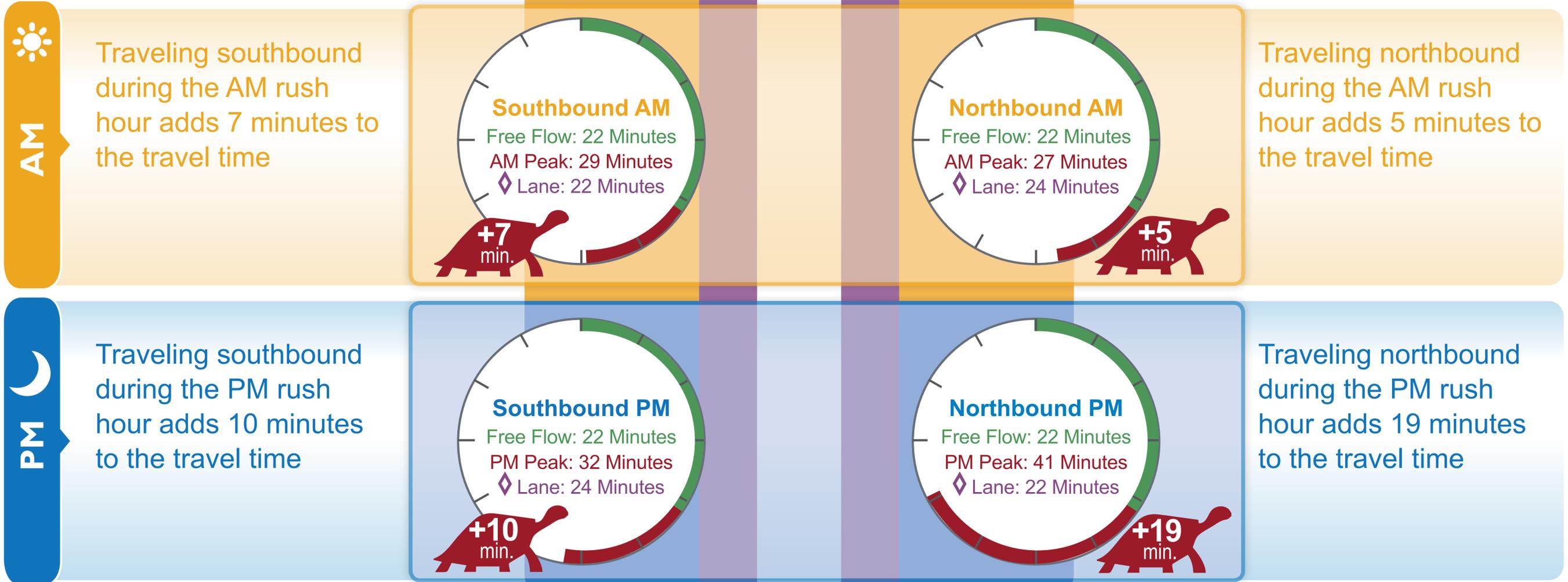
- ▲ Low Congestion
- ▲ Moderate Congestion
- ▲ High Congestion





Travel Time

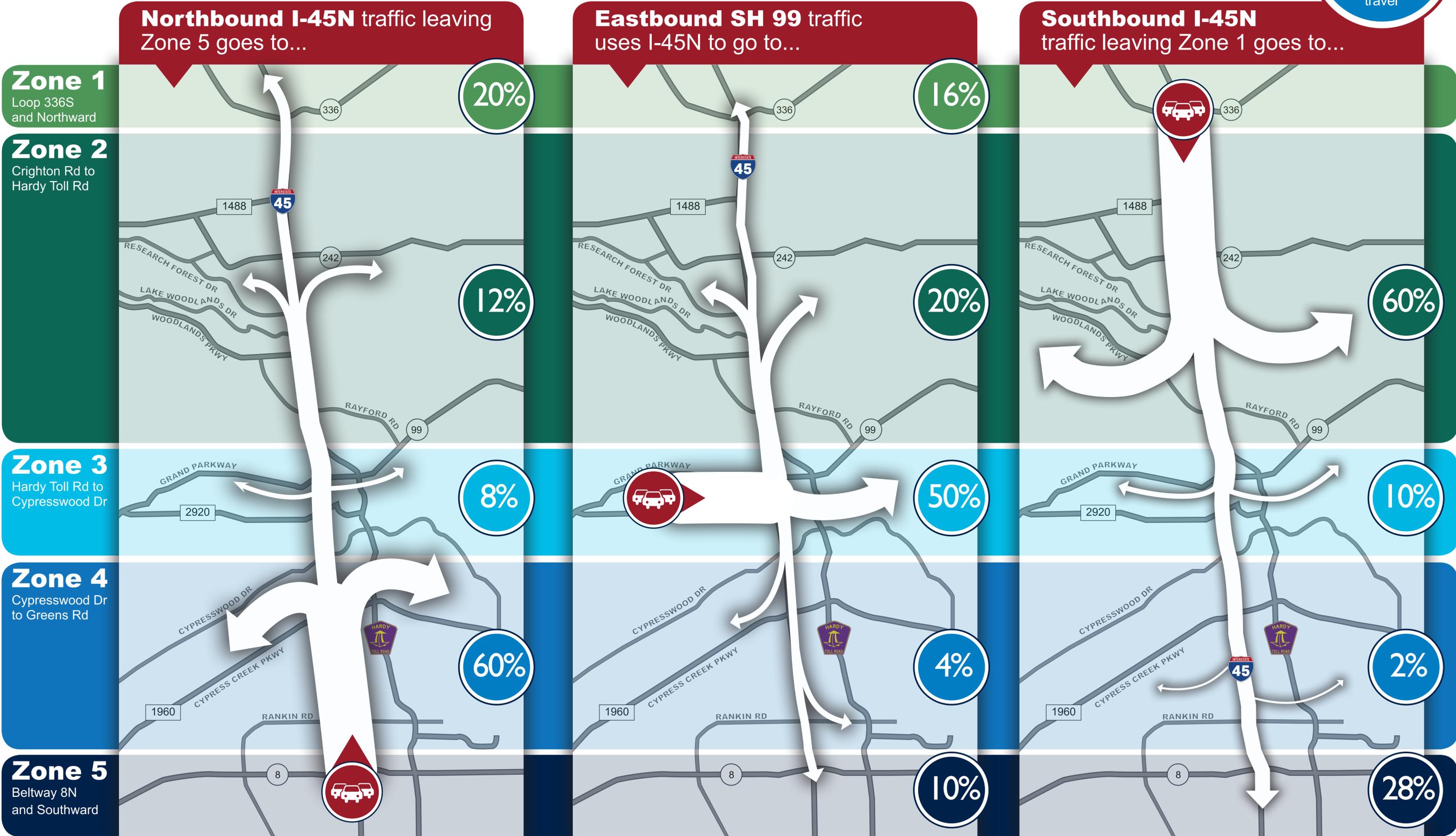
I-45N Travel Times Between Beltway 8N and LP 336S





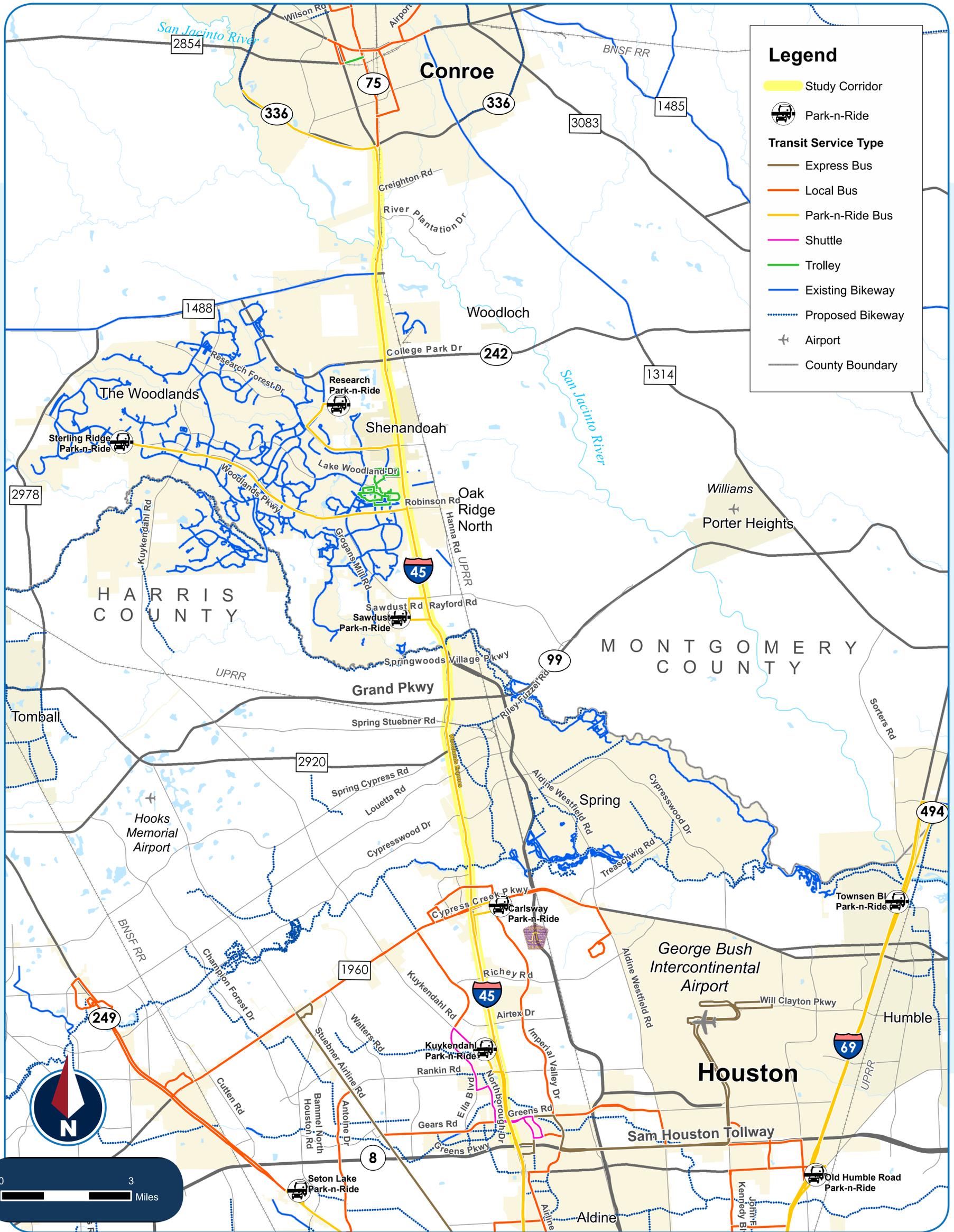
I-45N Daily Travel Patterns

I-45N
is used for a mix of local commuter traffic and long distance travel





I-45N Transit and Bikeways





How Safe is the I-45N Corridor?

**On I-45N from 2012-2016
there have been....**

11,992
Total Crashes



6 crashes per day

33
Crashes
Involving
Pedestrians



12
Crashes
Involving Bicyclists

19 of these crashes have resulted in a fatality or incapacitating injury

2,832
Injury Crashes



crashes per week
result in injury

228
Fatal or Incapacitating
Crashes



crashes per month
are fatal or incapacitating

We can do
Better!

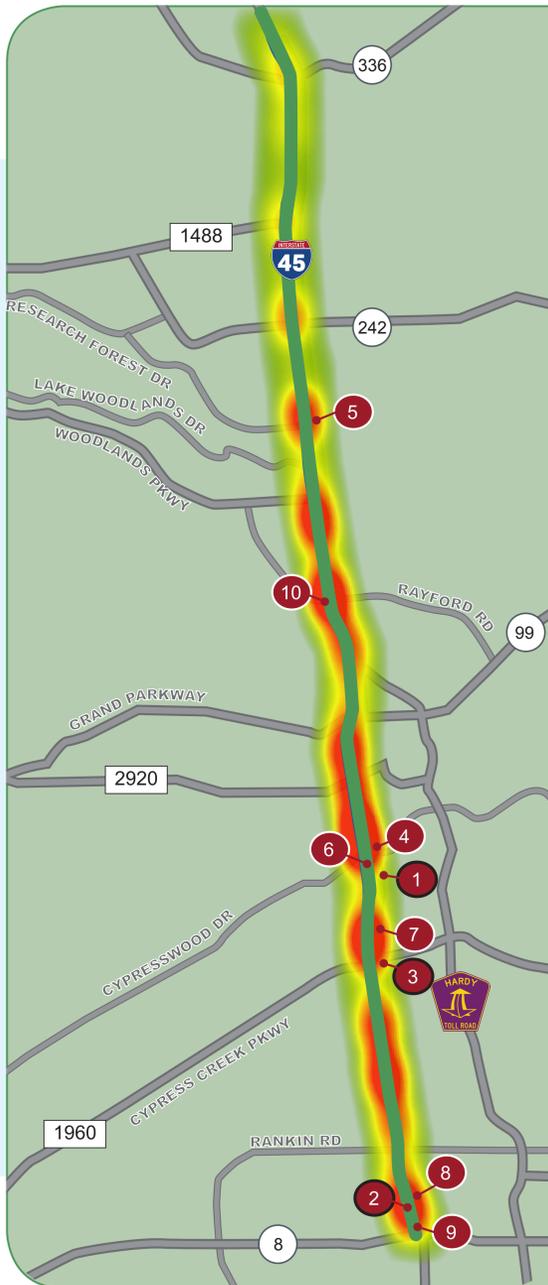
Statistics represent the total number of crashes on I-45N mainlanes and frontage roads





Where are crashes occurring along I-45N?

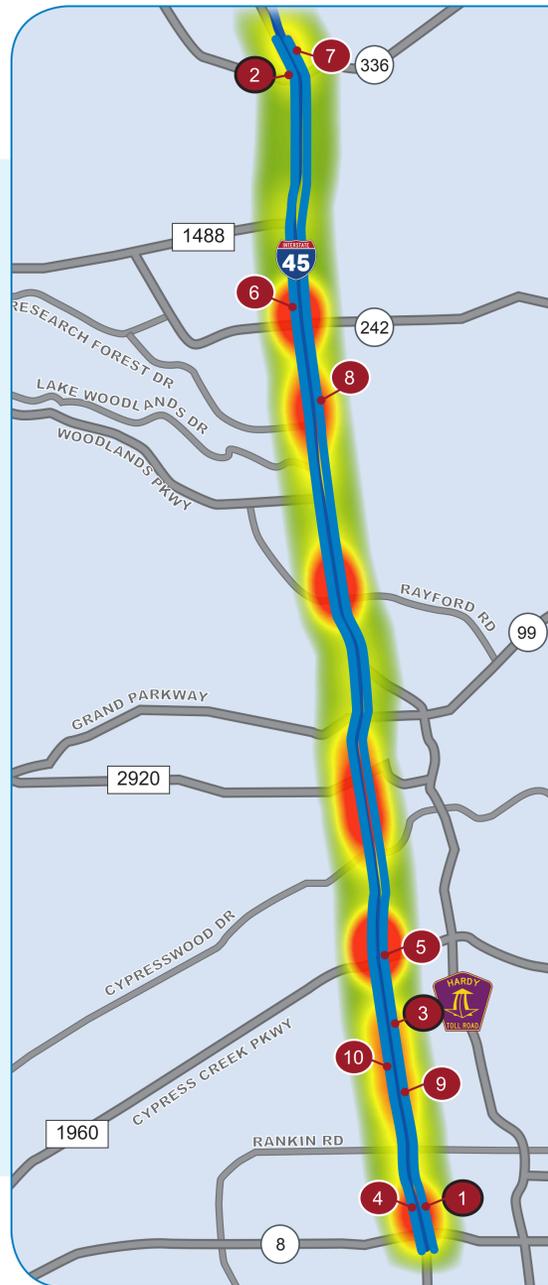
I-45N Mainlane Crashes



Top Ten Mainlane Crash Locations

- 1 NB I-45N mainlanes from Cypresswood Dr. to Louetta Rd.
- 2 SB I-45N on-ramp from Greens Rd.
- 3 NB I-45N off-ramp to Hollow Tree St.
- 4 NB I-45N off-ramp to Louetta Rd.
- 5 NB I-45N on-ramp from Lake Woodlands Dr.
- 6 SB I-45N mainlanes from Louetta Rd. to Cypresswood Dr.
- 7 NB I-45N on-ramp from reversible HOT lane
- 8 NB I-45N off-ramp to Greens Rd.
- 9 NB I-45N off-ramp to BW 8 WB
- 10 SB I-45N mainlanes from Hardy Toll Rd. to SH 99

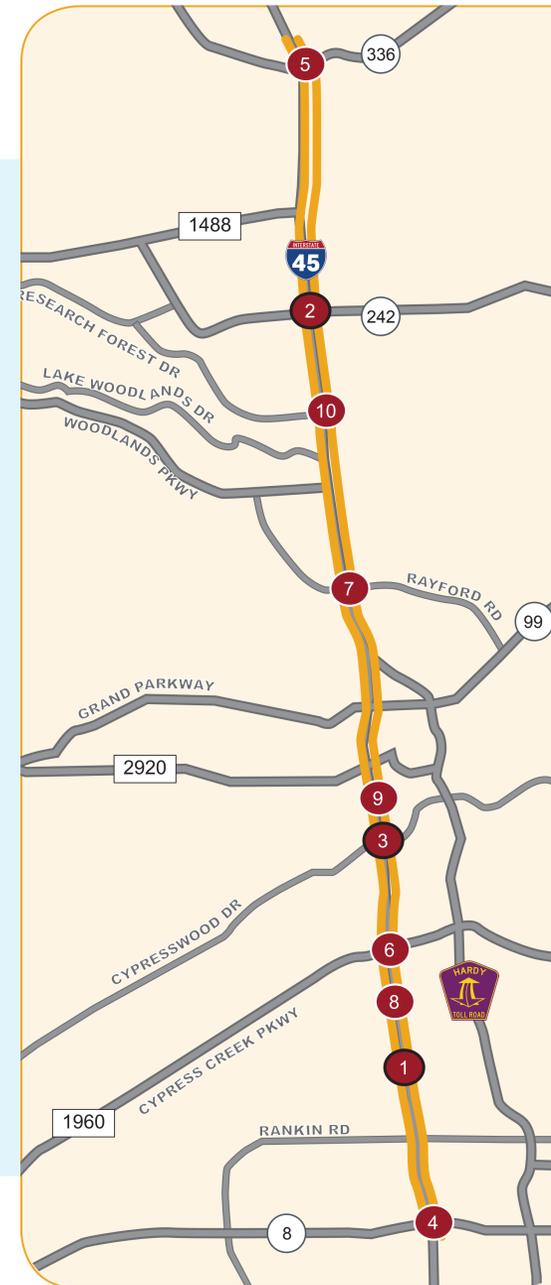
I-45N Frontage Road Crashes



Top Ten Frontage Road Crash Locations

- 1 NB I-45N: North of BW 8 intersection
- 2 SB I-45N: North of Loop 336N intersection
- 3 NB I-45N: North of Richey Rd. intersection
- 4 SB I-45N: North of BW 8 intersection.
- 5 NB I-45N: South of FM 1960 intersection
- 6 SB I-45N: North of SH 242 intersection
- 7 NB I-45N: North of Loop 336N intersection
- 8 NB I-45N: North of Research Forest Dr. intersection
- 9 NB I-45N: Airtex Dr. to Richey Rd.
- 10 SB I-45N: North of Airtex Dr. intersection

I-45N Frontage Road Intersection Crashes



Top Ten Frontage Road Intersection Crash Locations

- 1 Airtex Dr.
- 2 SH 242
- 3 Cypresswood Dr.
- 4 Beltway 8N
- 5 Loop 336S
- 6 FM 1960
- 7 Sawdust Rd. / Rayford Rd.
- 8 Richey Rd.
- 9 Louetta Rd.
- 10 Research Forest Dr.





Freight in the I-45N Corridor

I-45N
is an important
Freight
Corridor

13th Worst
Beltway 8 is the 13th worst
freight bottleneck in Texas



Conroe

180 Million
Gallons of petroleum hauled in
trucks throughout corridor



Dallas

Houston

16 Billion
Pounds of food hauled
in trucks through the corridor,
enough for over 10 billion meals



74th Worst
Beltway 8 is the 74th worst
freight bottleneck in the country



17,700

Volume of trucks in a day on
I-45N. These trucks parked
back to back would stretch
230 miles, or from Houston
to Dallas





What are Constraints?

Constraints are **factors** that influence the transportation solutions that can be considered.

Wetlands



Impacts to wetlands must be considered.

Parks & Public Land



Impacts to parks and public lands must be considered.

Water Crossings



Bodies of water are sensitive environmental resources. Water crossings along I-45N include the Greens Bayou, Cypress Creek, Spring Creek, and San Jacinto River.

Historic Properties



Within the study area are several historical markers and properties that are on the National Register of Historic Places. Impacts must be considered.

Archaeological Sites



Similar to historic resources, archaeological resources are protected by law. Impacts must be considered.

Utilities



Impacts to major utility lines in the I-45N corridor (e.g., transmission lines, oil and gas pipelines) can be costly and hazardous to the environment.

Multi-Modal



Existing bicycle, pedestrian, and transit facilities will be inventoried and future improvement needs identified.

Community Impacts

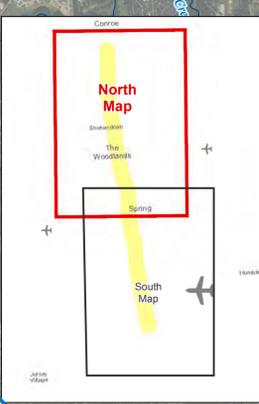
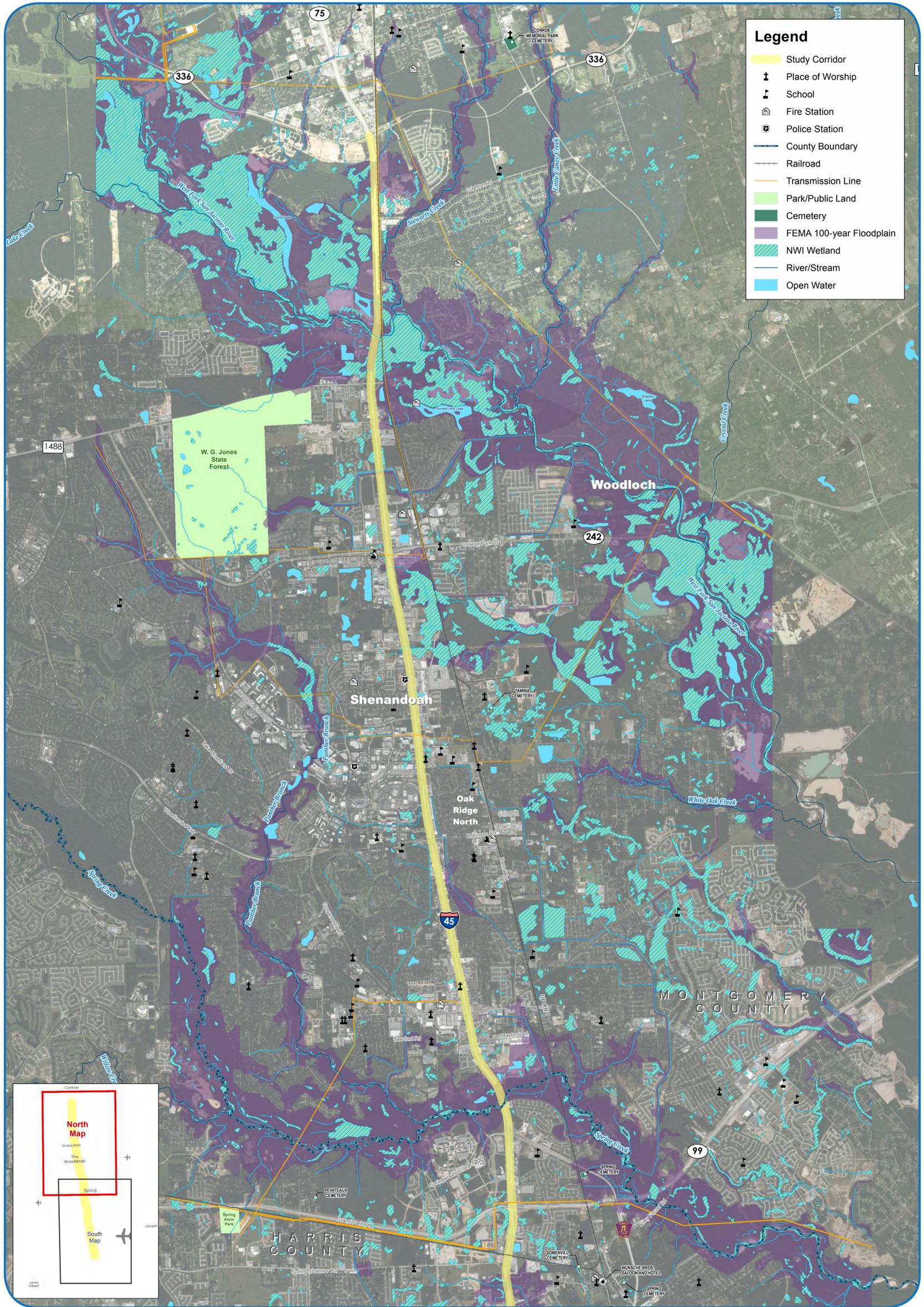


Land use, neighborhoods, and community facilities within the I-45N corridor will be inventoried.



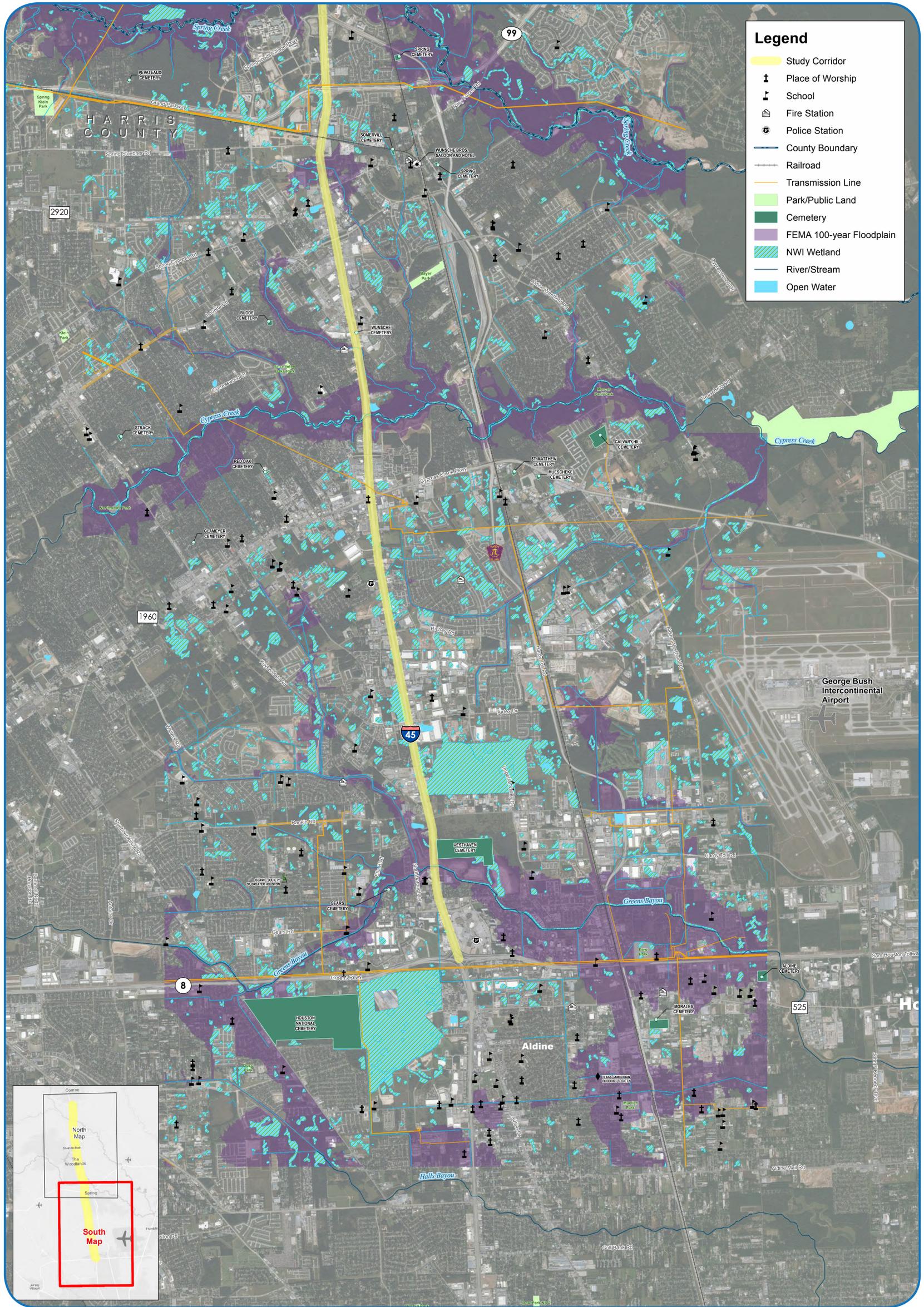


Environmental Constraints Map - North





Environmental Constraints Map - South



Brainstorm Solutions

Transportation System Management

Examples include more park and ride lots, diamond lanes, and express lanes

Existing Corridor Improvements

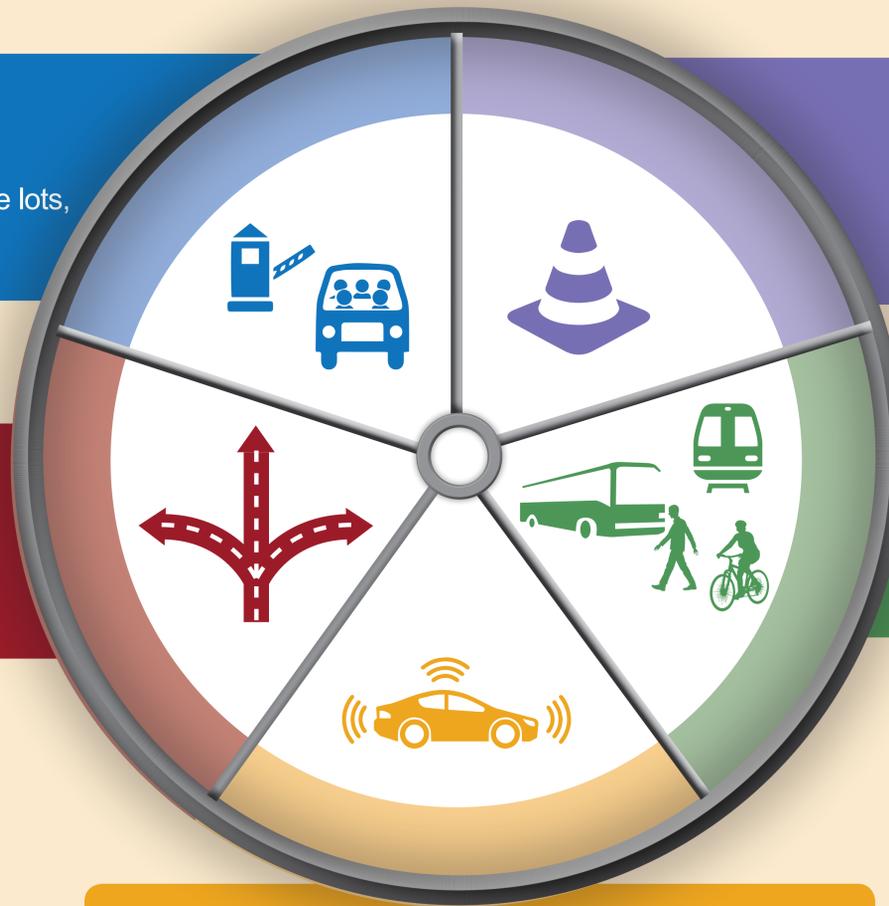
Improvements to existing interchanges, frontage roads, more lanes, etc.

Alternate Routes

Improve existing alternate routes or build a new alternate route.

Multi-Modal

Improve transit facilities such as commuter rail, bus routes, bicycles, and pedestrians



Innovative Technology

Consider advanced technologies such as connected and automated vehicles

Who Provides Input?

Corridor solutions will include a variety of potential improvement solutions. We want your help identifying what those solutions should be.





We Want to Hear from You!

1 Provide input on our interactive boards.

2 Visit the I-45N PEL Study page on the TxDOT website.

<https://www.txdot.gov/inside-txdot/projects/studies/houston/houston-pel-i-45.html>

3 Take our survey tonight.

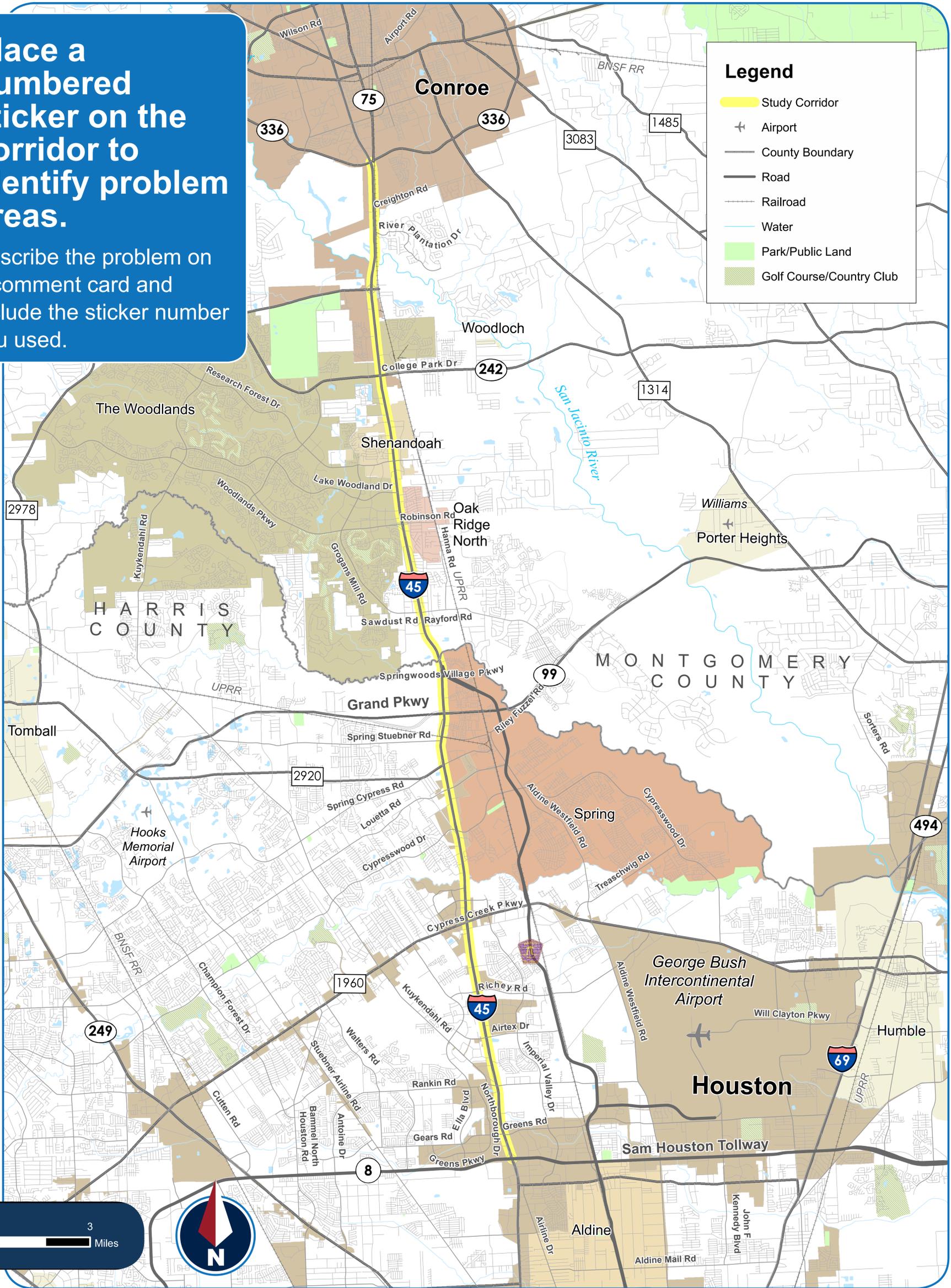




Where Are the Issues Along I-45N?

? Place a numbered sticker on the corridor to identify problem areas.

Describe the problem on a comment card and include the sticker number you used.





What Should the Goals be for Improving I-45N?

? Place a sticker above your top 3 goals for the I-45N PEL Study.
Describe why you chose those goals on your survey.

Reduce congestion	Improve safety	Improve freight movement	Increase economic development	Maintain good condition of existing roadway	Improve connections with I-45N	Provide alternative modes of travel <small>(e.g., bus, train)</small>	Minimize impacts to the environment	Maximize use of existing right of way	Accomodate future transportation technologies <small>(e.g., self-driving cars)</small>	Other: explain on the survey





What Would You like to See on the I-45N Corridor in the Future?

? Place a sticker next to your top 3 solutions for changing the I-45N corridor in the future.

 Build a new commuter rail line	
 Improve transit service	
 Improve bicycle and pedestrian accommodations	
 Add more lanes to I-45N	
 Reconstruct existing interchanges	
 Add new ramps to/from I-45N	
 Add more east-west crossings of I-45N	
 Improve frontage road intersections	
 Improve Hardy Toll Road	
 Complete Grand Parkway (SH 99) connectors	
 Add another diamond/HOV lane on I-45N	
 Build more park-n-ride lots	
 Add a lane for self-driving cars	
 Add adaptable lanes	
 Do nothing	
 Other: explain your idea on the survey	

