





TEXAS DEPARTMENT OF TRANSPORTATION



NORTH HOUSTON HIGHWAY IMPROVEMENT PROJECT

Environmental Impact Statement
and Preliminary Engineering
3rd Public Meeting
November 14 and 19, 2013

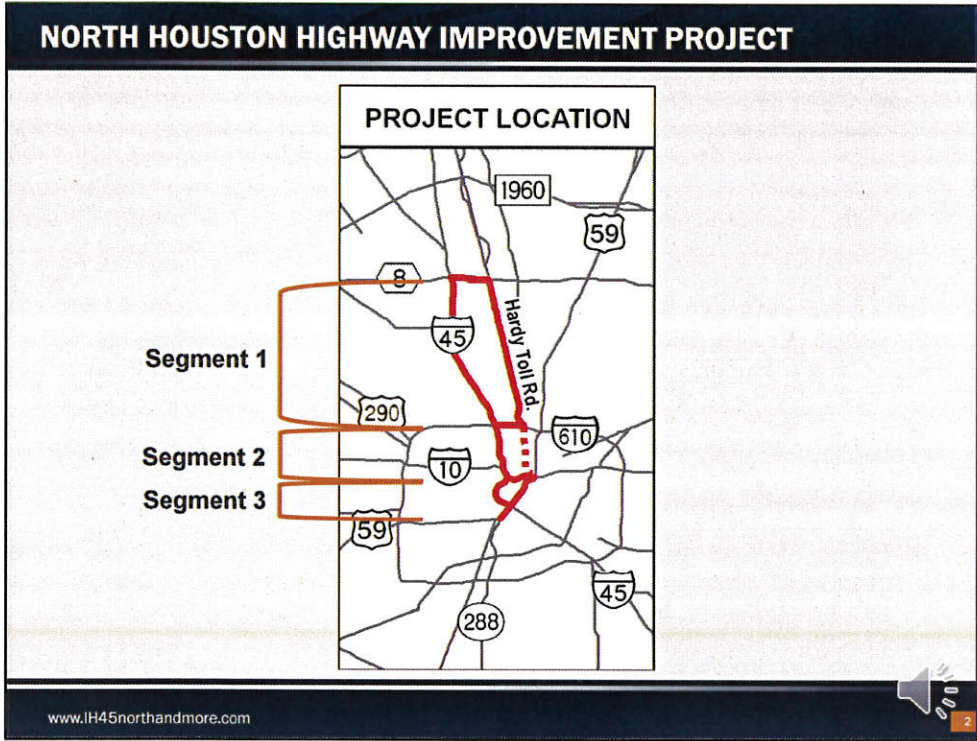


Welcome to the Third Public Meeting for the North Houston Highway Improvement Project, located in Harris County, Texas.

This evening's meeting is an integral part of the Environmental Impact Statement process and Preliminary Engineering for this project.

We greatly appreciate your participation.

Detailed information about opportunities for public involvement will be provided at this evening's meeting.



To assist in the design and analysis of alternatives, the project area has been divided into three segments:

- SEGMENT 1 is from Beltway 8 to Interstate 610,
- SEGMENT 2 is from Interstate 610 to Interstate 10, and
- SEGMENT 3 is the Downtown Loop System

PURPOSE OF 3rd PUBLIC MEETING

- Present and gather your input on the Alternatives Evaluation Process, and the Three Reasonable Alternatives
- Discuss the project with you and answer questions
- Present the project timeline, history, and background
- Explain the next steps
- Encourage your continued involvement

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The purpose of the 3rd Public Meeting is

- To present and gather your input on the Alternatives Evaluation Process, and the three Reasonable Alternatives
- To discuss the project with you and answer questions
- To present the project timeline, history, and background
- To explain the next steps
- And to encourage your continued involvement

3rd PUBLIC MEETING MAIN OBJECTIVES

Gather public input:

- Alternatives Evaluation Screening Process
- Three Reasonable Alternatives



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At this evening's meeting we are asking for your comments on the alternatives evaluation screening process, and the three Reasonable Alternatives.

Detailed information on the reasonable alternatives developed to date and the Alternatives Evaluation Process is available on the exhibits presented at this evening's meeting, and are posted on the project website.

For those who were not able to attend the previous public meetings, the information presented there is available in a binder at this evening's meeting and is also available on the project website.

SUMMARY OF PROJECT NEED AND PURPOSE

- **Need for Proposed Project**
 - Population and employment increases
 - Existing and future I-45 traffic
 - Current design standards and improved safety
 - Efficient traffic movement, including during evacuation events
- **Purpose of Proposed Project**
 - Manage congestion and enhance safety
 - Improve mobility and operational efficiency



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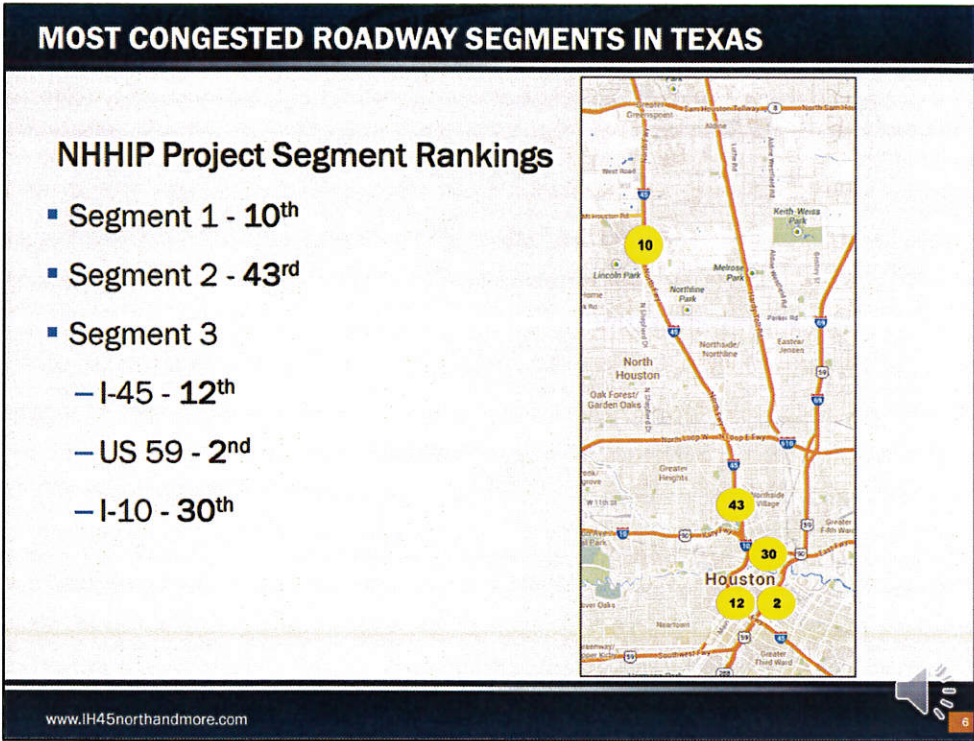
The proposed North Houston Highway Improvement Project is needed to accommodate projected increases in population and employment in the Houston metropolitan area, which will contribute to additional traffic congestion on I-45.

The proposed project will address congestion caused by existing and anticipated future traffic.

Additionally, the project is needed to bring the roadway up to current design standards, which would improve safety and provide for more efficient movement of people and goods, and will aid in evacuation events.

The purpose of the proposed project is to create additional roadway capacity to manage congestion, enhance safety, and to improve mobility and operational efficiency.

The Need and Purpose statement available at tonight's meeting provides additional details about the need and purpose for the proposed project.



In August 2013, the Texas A&M Transportation Institute released the results of the analysis of the 100 most congested road segments in Texas, based on mobility performance measures. Segments of I-45 in the study area were ranked as the 10th, 12th, and 43rd most congested segments. US 59 and I-10 in downtown Houston were ranked as 2nd and 30th most congested.

SINCE THE 2nd SCOPING MEETING

- Documented, compiled, and reviewed Public and Agency Comments
- Developed and documented responses to comments
- Prepared the 2nd Scoping Meeting Summary Report



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Since the 2nd Public and Agency Scoping meetings, the project team has completed the following:

- Documented, compiled, and reviewed the Public and Agency Comments
- Developed responses to comments, and
- Prepared the 2nd Scoping Meeting Summary Report

SINCE THE 2nd SCOPING MEETING

- Evaluated Six Preliminary Alternatives

- Project Need and Purpose and Project Goals
- Public and Agency feedback
- Engineering and Environmental Constraints

- Identified Three Reasonable Alternatives



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The team evaluated the six Preliminary Alternatives for each study segment in consideration of the Project Need and Purpose, the Project Goals, public and agency feedback from the scoping meetings, and the Engineering and Environmental Constraints that apply to this project, and then applied a Secondary Screening Process to identify the Reasonable Alternatives presented at this evening's meeting.

INPUT FROM 2nd SCOPING MEETING

■ Suggested Alternatives

- Elevated roadway / depressed (below grade) roadway / tunnels
- Hardy Toll Road only / I-45 only
- Tolls / No Tolls
- HOV only / No HOV
- No construction / Construct as soon as possible



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Public input from the 2nd scoping meeting provided a number of good suggestions for alternatives and gave the project team a better idea of what was important to residents and business owners in the area.

Suggestions and concerns were considered and included in the project planning process.

The most frequently suggested alternatives are listed on this slide in no particular order, and include:

- Elevated roadways, depressed (or below grade) roadways, and tunnels
- Improvements to Hardy Toll Road only, and improvements to Interstate 45 only
- Tolled roadways, and roadways with no tolls
- High Occupancy Vehicle lanes only, and No High Occupancy Vehicle lanes
- Requests to not construct the project at all, and requests to construct the project as soon as possible

INPUT FROM 2nd SCOPING MEETING

- Primary Concerns
 - Impacts to residences and businesses in the area
 - Impacts to area parks and green space
 - Impacts to cultural, historic and archeological resources
 - Impacts to cemeteries



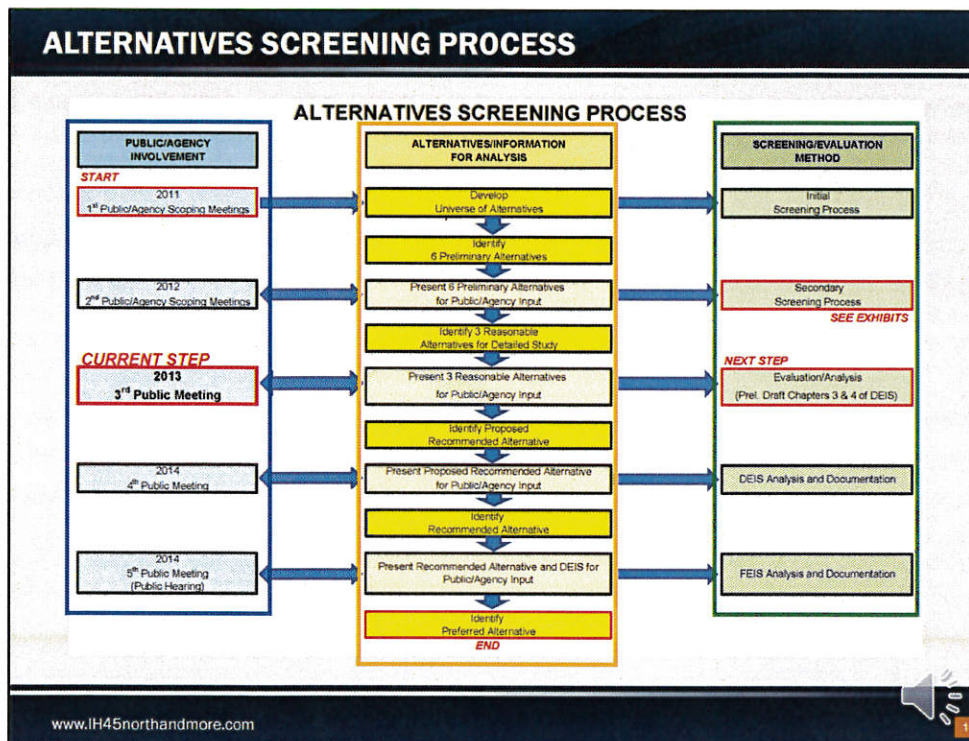
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10

The most frequently identified areas of concern were:

- Impacts to residences and businesses in the area (including property value, pollution, visual effects, noise, traffic, and additional right-of-way)
- Impacts to area parks and green space
- Impacts to cultural, historic and archeological resources
- And impacts to cemeteries



The diagram on this slide shows the alternative evaluation process that is being followed throughout the development of this project.

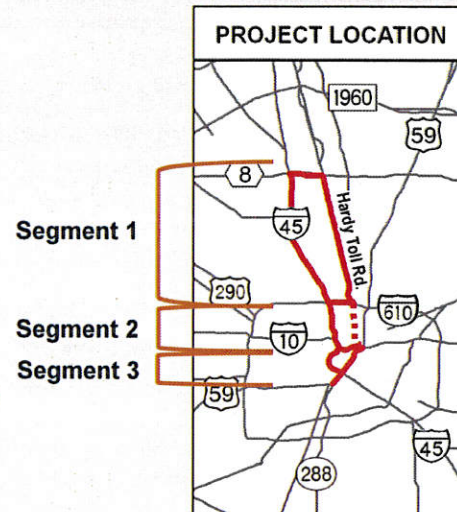
- On the left, in blue, shows how and when your input contributes to the evaluation process.
- On the right, in green, shows the method of screening and analysis the project team has been, and will be using for each group of alternatives.
- The center column, in yellow, shows the process to develop the project alternatives, and at what stages during the process the alternatives are presented for your review and comment.

The goal at the end of this process will be to identify one preferred alternative for each segment.

This diagram is available for you to view as an exhibit in the open house area at this evening's meeting, and on the project website.

REASONABLE ALTERNATIVES

- Project divided into 3 Segments
 - Segment 1 – BW 8 to I-610
 - Segment 2 – I-610 to I-10
 - Segment 3 – Downtown Loop System
- Three alternatives for each segment
- See exhibits in the open house area for maps, diagrams, and details



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As mentioned in the beginning of this presentation, to assist in the design and analysis of alternatives, the project area has been divided into three segments.

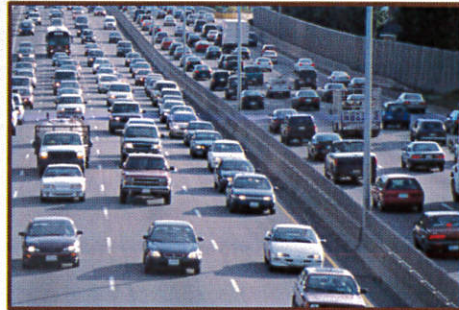
At this stage of the Environmental Impact Statement Process, three Reasonable highway improvement alternatives have been developed for each segment.

The reasonable alternatives were selected as the most viable alternatives from six preliminary alternatives.

Details on these alternatives are available for you to view as exhibits in the open house area at this evening's meeting. They are also available on the project website.

SECONDARY SCREENING PROCESS EVALUATION CRITERIA

- Project Need and Purpose
- Project Goals
- Engineering
- Traffic
- Environmental



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13

A Secondary Screening Process was used to narrow the six Preliminary Alternatives to the three Reasonable Alternatives, which are presented at this evening's meeting.

In this process, evaluation criteria that were considered include:

- The Project's Need and Purpose, and Specific Goals, and
- Engineering, Traffic, and Environmental

The evaluation matrix that was completed for each of the three segments is available for you to view at this evening's meeting, and on the project website.

SECONDARY SCREENING PROCESS MATRIX

SEGMENT 1

PRELIMINARY SUBJECT TO CHANGE

Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6		Alternative 7		Alternative 8	
Alternative ID	Alternative Name	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description	Alternative Description
SEE EXHIBITS FOR COMPLETED MATRICES															



This slide shows the evaluation matrix that was completed during the secondary screening process.

SECONDARY SCREENING PROCESS MATRIX

SEGMENT 1

PRELIMINARY SUBJECT TO CHANGE

EVALUATION CRITERIA		Secondary Screening Process of Preliminary Alternatives		Evaluation											
Segment 1 2025 to 2030	Alternative Type	Description	Priority	Evaluation											
				Land Use	Cultural Resources	Natural Resources			Social			Economic			
				Priority	Quality	Quantity	Quality	Quantity	Quality	Quantity	Quality	Quantity	Quality	Quantity	
Alternative 1	Competition	No State Operations Project Not Constructed													
Alternative 2	Competition	Addition of second connection from east to Henry, East Parkway, and West Parkway, including additional lanes and shoulders. This alternative provides the most additional lane shoulders and shoulders.													
Alternative 3	Competition	Addition of second connection from east to Henry, East Parkway, and West Parkway, including additional lanes and shoulders. This alternative provides the most additional lane shoulders and shoulders.													
Alternative 4	Other	North-175 lane addition including right-of-way general purpose lanes and four additional managed lanes. Additional PCOR will be provided on both sides of the road.													
Alternative 5	Other	North-175 lane addition including right-of-way general purpose lanes and four additional managed lanes. Additional PCOR will be provided on both sides of the road.													
Alternative 6	Other	North-175 lane addition including right-of-way general purpose lanes and four additional managed lanes. Additional PCOR will be provided on both sides of the road.													
Alternative 7	Managed	North-175 lane addition including right-of-way general purpose lanes and four additional managed lanes on a single direction of travel.													
Alternative 8	Managed	North-175 lane addition including right-of-way general purpose lanes and four additional managed lanes on two separate directions on both sides of the road.													

Traffic Evaluation Criteria

- Managed Lane Utilization
- Travel Demand
- Vehicle Hours Traveled
- Volume to Capacity Ratio



- Traffic Evaluation criteria included:
- Managed lane utilization,
 - Travel demand,
 - Vehicle hours traveled, and
 - Volume to capacity ratio.

SECONDARY SCREENING PROCESS MATRIX

SEGMENT 1

PRELIMINARY SUBJECT TO CHANGE

EVALUATING CRITERIA		Secondary Screening Process of Preliminary Alternatives		Environmental										Social	Economic	Health
Alternative	Description	Land Use	Cultural Resources	Natural Resources			Air Quality			Water Resources			Noise	Economic	Health	
				Priority	Quality	Quantity	Priority	Quality	Quantity	Priority	Quality	Quantity				
Alternative 1	Construction															
Alternative 2	Construction															
Alternative 3	Construction															
Alternative 4	Construction															
Alternative 5	Construction															
Alternative 6	Construction															
Alternative 7	Construction															
Alternative 8	Construction															

Engineering and Traffic Evaluations

- Desirable = Optimum
- Neutral = Moderate or Acceptable
- Undesirable = Least Desirable

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A desirable rating was given to the alternatives with optimum results

A neutral rating was given to alternatives with moderate or acceptable results

An undesirable rating was given to alternatives with low or least desirable results

SECONDARY SCREENING PROCESS MATRIX

SEGMENT 1

PRELIMINARY SUBJECT TO CHANGE

EVALUATION SYSTEM		Secondary Screening Process of Preliminary Alternatives		Evaluation Criteria										Evaluation Results									
Segment 1 2021 to 2024	Alternative Type	Description	Evaluation Criteria	Land Use		Cultural Resources		Natural Resources		Noise		Socioeconomics		Hazardous Materials		Other		Other		Other		Other	
				Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other	Priority	Other
Alternative 1	Other	Alternative 1	Alternative 1																				
Alternative 2	Other	Alternative 2	Alternative 2																				
Alternative 3	Other	Alternative 3	Alternative 3																				
Alternative 4	Other	Alternative 4	Alternative 4																				
Alternative 5	Other	Alternative 5	Alternative 5																				
Alternative 6	Other	Alternative 6	Alternative 6																				
Alternative 7	Other	Alternative 7	Alternative 7																				
Alternative 8	Other	Alternative 8	Alternative 8																				

Environmental Evaluation Criteria

- Land Use
- Cultural Resources
- Natural Resources
- Noise
- Socioeconomics
- Hazardous Materials



Environmental criteria included impacts to land use, cultural resources, natural resources, noise, socioeconomics, and hazardous materials. Based on the evaluation of alternatives, no potential environmental effects were identified that eliminated any alternative from further consideration.

The completed evaluation matrix for each segment is available as an exhibit in the open house area and on the project website, for you to view and provide your comments.

3 REASONABLE ALTERNATIVES – SEGMENT 1

- Alternative 4 – Add 4 managed lanes to I-45, with additional right-of-way on the **west side of I-45**
- Alternative 5 – Add 4 managed lanes to I-45, with additional right-of-way on the **east side of I-45**
- Alternative 7- Add 4 elevated managed lanes on I-45, with additional right-of-way on **both sides of I-45**

“Desirable” rating for engineering and traffic criteria

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19

Three reasonable alternatives for each segment were selected for further study. For Segment 1, the alternatives selected were the only alternatives that were rated as **desirable** based on engineering and traffic criteria.

3 REASONABLE ALTERNATIVES – SEGMENT 2

- Alternative 10 - Add 4 managed lanes to I-45
- Alternative 11 - Add 4 managed lanes to I-45, on a **single structure** at the center of I-45
- Alternative 12 - Add 4 managed lanes to I-45, on a **double-decked structure** at the center of I-45

“Desirable” or “Neutral” rating for engineering criteria

“Desirable” rating for traffic criteria

Right-of-way would be required in selected areas

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20

For Segment 2, the alternatives selected were rated as desirable or neutral based on engineering criteria, and were all rated as desirable based on traffic criteria. Right-of-way would be required in selected areas, such as at intersections.

3 REASONABLE ALTERNATIVES – SEGMENT 3

- Alternative 10 - Widen I-45
- Alternative 11 – Realign I-45 northbound and southbound lanes to the east along US 59; existing I-45 would be converted to a parkway/boulevard for downtown access
- Alternative 12 – Realign I-45 northbound lanes to the east along US 59, while maintaining two-directional flow on I-10 and US 59

“Desirable” or “Neutral” rating for most engineering and traffic criteria

Right-of-way would be required in selected areas

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21

For Segment 3, the alternatives selected were rated as desirable or neutral for most engineering and traffic criteria.

Right-of-way would be required in selected areas, and can be viewed on exhibits in the open house area.

OTHER ALTERNATIVES

Tunnel alternatives

- Reduced shoulder widths
- Reduced vertical clearances
- Increased incident management and emergency response times
- Constructability issues

Hardy Toll Road alternatives

- Did not score well in traffic criteria
- Low utilization of managed lanes along Beltway 8 and I-610
- Would not reduce congestion on I-45 compared to other alternatives

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The tunnel alternatives did not score well in engineering and traffic criteria. Internal characteristics of a tunnel are constrained by the diameter and therefore introduce functionality issues such as reduced shoulder widths and reduced vertical clearances. The tunnel alternatives would also have operational deficiencies such as increased incident management and emergency response times. Tunnel evaluations concluded that tunnels would also have several constructability issues.

The Hardy Toll Road alternatives did not score well in traffic criteria, primarily due to low utilization of managed lanes along Beltway 8 and I-610. Also, not enough traffic would be diverted to Hardy Toll Road to improve mobility and reduce congestion on I-45, as compared to other alternatives.

For more details on the selection process, please see the completed evaluation matrices in the exhibit area, and speak with the project team.

NEXT STEPS

- Document and compile Public and Agency Comments
- Determine if any adjustments are needed to the
 - Evaluation Process
 - Reasonable Alternatives
- Evaluate alternatives using detailed analysis to be presented in the Draft Environmental Impact Statement
- Identify one recommended alternative for each segment
- Present to the public and agencies in 2014



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23

Following this meeting, the project team will:

- Document and compile the Public and Agency Comments
- Determine if any adjustments are needed to the evaluation process, the reasonable alternatives, or any other information presented
- Evaluate alternatives using detailed analysis to be presented in the Draft Environmental Impact Statement
- Identify one recommended alternative for each segment, using more detailed engineering, traffic, and environmental review; and
- Review the input that you provide at this meeting with your written comments.
- The next public and agency meetings to be scheduled in 2014 will present the proposed recommended alternative.

HOW TO GET INVOLVED

- Attend public meetings
- Inform family, friends, coworkers, neighbors
- Discuss with elected officials
- Visit the project website:

www.IH45northandmore.com

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24

To get involved in the project development and environmental review process, you may

- Attend the public meetings
- Inform family, friends, coworkers, and neighbors
- And discuss the project with elected officials

The project website will be updated during the evaluation process with project status and upcoming public participation opportunities.

HOW TO SUBMIT COMMENTS

- **Submit comments by Friday, December 6, 2013**

- Written

- Comment box at this meeting
- Mail

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

- **Email**

- Website: www.IH45northandmore.com
- Click “Comments/Contact Us”
- HOU-piowebmail@txdot.gov

www.IH45northandmore.com



To provide written comments on this project, there is a comment box provided at this evening's meeting, or you can mail comments to the Texas Department of Transportation.

You may also submit comments through email by going to the project website and selecting the “Comments/Contact Us” tab, or you may send them to the email address on this slide.

The addresses presented on this slide are also provided in the meeting handout.

For your comments to be included as part of the official record for this meeting, please submit emails by Friday, December 6th, 2013, or if mailing, comments must be postmarked by this date.

THANK YOU FOR ATTENDING!
PLEASE VISIT THE OPEN HOUSE AREA

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26

Thank you for attending this evening's meeting and providing your feedback.

Please proceed to the open house area to view the exhibits and discuss the project with the project team.



THIS PRESENTATION WILL RESTART IN 2 MINUTES



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This presentation will restart in two minutes.