



**NORTH HOUSTON
HIGHWAY IMPROVEMENT PROJECT**

MEETING SUMMARY & RESPONSES TO COMMENTS

FROM

THIRD PUBLIC MEETING

HELD

NOVEMBER 14 & 19, 2013

FOR REFERENCE ONLY

DO NOT REMOVE



North Houston Highway Improvement Project Public Meeting 3 - November 14 and 19, 2013 Summary and Responses to Comments

The Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA) are preparing an Environmental Impact Statement (EIS) for the North Houston Highway Improvement Project (NHHIP), located in Harris County, Texas. The proposed project and study limits begin at the interchange of US 59 and SH 288 south of downtown Houston and follow northward along I-45 to the interchange of I-45 and Beltway 8 North, a distance of approximately 16 miles. The proposed project area also includes portions of I-10 and US 59 near downtown Houston, I-610 and Beltway 8 North between I-45 and Hardy Toll Road, and Hardy Toll Road from north of downtown to Beltway 8 North. The purpose of the proposed project is to create additional roadway capacity to manage congestion, enhance safety, and to improve mobility and operational efficiency.

This report summarizes the activities used to solicit participation for the third agency and public meetings, and the input received at the meetings and during the associated comment period.

Agency and Public Meetings

Two **agency meetings** were held at the TxDOT Houston District office, 7600 Washington Avenue, Houston, Texas 77007, on the dates and at the times listed below:

1. Participating agencies - Wednesday, November 13, 2013; 10:00 a.m. - 12:00 p.m.
2. Cooperating agencies - Thursday, November 14, 2013; 10:00 a.m. - 12:00 p.m.

Thirteen invitations were mailed to participating agencies on November 1, 2013, and to cooperating agencies on October 11, 2013.

There were 14 individuals representing seven agencies (Greater Northside Management District, Houston-Galveston Area Council, City of Houston, Harris County Public Infrastructure Department, Houston Downtown Management District, Texas Parks and Wildlife Department, Federal Highway Administration) in attendance at the meeting for the participating agencies.

Four individuals from two agencies (U.S. Army Corps of Engineers and Metropolitan Transit Authority of Harris County) were in attendance at the meeting for the cooperating agencies.

Meeting attendees were provided an informational handout, survey form, and comment form. Reference materials were also available, including the exhibits from the first and

second public meetings, the North-Hardy Planning Studies, Alternatives Analysis Report (Highway Component), a summary from the first and second public meeting, a glossary of common terms, the Need and Purpose Statement, and the Agency Coordination and Public Involvement Plan. An open discussion followed the public meeting presentation. No written comments were submitted at the meeting.

The **public meetings** were held in two locations in the project area, on two different days, to provide two opportunities for interested citizens to attend. Both meetings were held from 5:30 pm to 7:30 pm, on the dates and at the locations listed below.

1. Thursday, November 14, 2013 at Aldine Ninth Grade School, 10650 North Freeway, Houston, Texas 77037
2. Tuesday, November 19, 2013 at Jefferson Davis High School, 1101 Quitman Street, Houston, Texas 77009

The purpose of the public meetings was to:

- Present the secondary screening process evaluation for the six preliminary alternatives
- Present and gather input on the three reasonable alternatives
- Discuss the project and answer any questions
- Present the project timeline, history and background
- Gather input on the project, process and alternatives
- Encourage continued involvement

Representatives from TxDOT and the project consultant team were present at both meetings and included Spanish-speaking individuals for translation and communication.

At the meeting the comment period was stated to end on December 10, 2013. At the request of the public, TxDOT extended the comment period to December 31, 2013, and then to January 31, 2014.

Public Meeting Documentation

The complete NHHIP Public Meeting Documentation report is available for review at the TxDOT Houston District Office, 7600 Washington Avenue, Houston, Texas 77007. The 2-volume document includes documentation of the agency and public meetings, and comments received during the associated comment period.

Volume 1 - Meeting summary and photographs, meeting notifications, registration sheets, handouts, the printed PowerPoint presentation frames with printed narration script, and reduced-size copies of the exhibit boards and maps.

Volume 2 – Introduction and comment index table, comment and survey matrix table, copies of all written comments received during the public meeting comment period, and meeting surveys.

Summary of Comments

Written comments were submitted during the comment period that ended on January 31, 2014. The written comments were submitted at the public meetings, and by mail and email. Some comments were written on forms provided at the public meetings, and include public meeting survey forms. The survey form had questions related to public outreach and knowledge of the NHHIP.

This meeting summary and responses to comments will be posted on the project website: www.IH45northandmore.com. The Public Meeting Documentation report includes copies of all comments submitted during the associated comment period.

TxDOT and project team members reviewed all of the comments, and grouped the concerns, questions, and suggestions into the categories of issues listed below. Responses to comments related to the issues listed are included in the “Responses to Comments” section of this summary, with an accompanying table that lists names of the commenters and related response numbers.

The detailed comments are included in Volume 2 of the Public Meeting Documentation report. Specific comments and questions about alternatives and project design have been reviewed by the project team and are being considered during the project development process. At this stage of the alternatives evaluation process, each comment and question cannot be responded to, as many details about the project are not known. More detailed information about the alternatives will be developed as the study proceeds. Please note: some categories listed below were not a source of comments from the recent meeting, but from previous meetings. These are included for your reference.

Comment Categories

1. Project alternatives
2. Cost of project compared to project goals
3. Modes of transportation
4. Congestion in the inner city and related impacts
5. Neighborhood quality of life
6. Impacts to neighborhoods and homes
7. Impacts to businesses and employment
8. Noise and vibration
9. Air quality
10. Flooding and drainage
11. Tolling
12. Funding through sale of bonds
13. Visual impacts
14. Parks and recreation
15. Project goals
16. Property values and property acquisition

17. Aesthetics and landscaping
18. Access for pedestrian, bicycle, and transit riders
19. Encouraging single-passenger vehicle use
20. Project would benefit suburban areas, and adversely affect City of Houston residents
21. Project would encourage suburban growth
22. Connect Hardy Toll road to downtown Houston
23. Conservation of natural resources
24. Historic resources and cemeteries
25. Impacts to cemeteries
26. Rejoin disconnected neighborhoods
27. Providing project information in Spanish
28. Ways to improve public outreach
29. Consider downtown roads as a separate project
30. Website
31. Receipt of project information
32. Estimated start of construction
33. Sustainable project planning
34. General comments
35. Build the roadway below grade
36. Elevate the roadway
37. Do not widen the roadway
38. Build a tunnel
39. Maps used at meetings
40. Extend comment period
41. The public's role in the NEPA Process
42. Using Hardy Toll Road rather than I-45
43. Level of environmental review

All comments received are being considered as TxDOT and the project team develops and evaluates roadway alternatives for this project.

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Key to Responses to Comments

Comment Codes: PM-Public Meeting, E-Emailed, M-Mailed, W-Website, P-Petition

Last Name	First Name	Comment Code	Response Numbers
Ahmed	Syed	PM 02	7, 32
Almaguer	Kameron	PM 54	34
Andrade	David	E121	7, 34, 38
Bacon	Tom	W382	34, 14, 18
Baier	Kyle	W360	38, 41, 35, 34
Bass	James	M32	34
Blain	Robert	W406	3, 22, 34
Blasco	Francisco	PM 19	34
Bodenheimer	Laura	W414	1, 38, 34
Bolivar	Hector	W387	34
Boudreaux	Brady	PM 20	1, 34, 22
Breed	Jerry	E123	34
Brenner	Noah	PM 44	2, 28, 41
Broussard	Matt	W365	3, 5, 14, 16, 24, 34, 38
Butron	Jose	PM 39	1, 34
Café	Last Concert	E126	1, 34, 41
Cahill West	Jane	E138	34
Cahill West	Jane	W441	34
Carachure	Olga	W402	7, 34
Carranco	Eddie	W430	34
Cavazos	Sylvia	PM 38	2, 3, 8, 9, 34, 17
Cho	Sharon	PM 37	1, 34
Cho	Sharon	W359	34
Cho	Peter	W379	1, 34
Chojnacki	Kimberly	W413	34
Chundru	Ravi	W369	8, 34
Coelho	Celeste	PM 25	6, 7
Coleman	Jasmine	W424	1, 34, 41, 38, 35, 17
Commenter 1		PM 05	32
Commenter 2		PM 06	7, 27, 31, 28
Commenter 3		PM 18	1, 34
Commenter 4		PM 22	1, 34
Commenter 5		PM 26	1, 34
Commenter 6		PM 29	1, 34
Commenter 7		PM 30	37, 36
Commenter 8		PM 35	34
Commenter 9		PM 40	6, 41, 34
Commenter 10		PM 41	34
Commenter 11		PM 42	6
Commenter 12		PM 43	6, 7, 35, 36, 34

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Last Name	First Name	Comment Code	Response Numbers
Commenter 13		PM 46	1, 34
Commenter 14		PM 48	35, 34, 1
Commenter 15		PM 52	41, 34, 39
Commenter 17		PM 61	34
Commenter 18		PM 62	34
Day	Jonathan	E135	34
Derry	Jon	W372	1, 8, 34
Diaz	Alex	PM 04	32
Donahue	Kay	E139	24, 34, 3, 8
Donahue	Kay	PM 56	1, 8, 9
Dornbusch	Tom	E115	1, 3, 41, 34
Dornbusch	Tom	PM 13	1, 3, 41, 34
Dorris	George	W374	7
Drake	James	PM 10	34
DuCroz	Diana	W438	34, 41
Eaton	Seth	W415	34
Eury	Robert	M30	34
Farrar	Jessica	E140	34
Fernandez	Carlos	PM 31	1, 6, 7, 8
Fischer	Beth	PM 23	1, 34, 17
Fischer	Steve	PM 24	38, 41, 17, 18, 34
Flores	Yolanda	W431	34
Furniture	Bi-Rite	M36	34
Gaitan	Danny	PM 57	41, 35, 34
Garcia	Bernardo	E127	1, 34, 41
Garcia	Maria	W429	34
Gardosik	Carol	W426	1, 34, 41, 38, 35, 17
Garrett	W	W423	3, 34
Gattis	Tory	W367	1, 34
Gonzalez	Arnulfo	E124	25, 34, 7
Green	Gene	M29	34, 40
Green	Ashley	PM 47	1, 34
Griffith	Rob	PM 32	1, 6, 14, 24, 34
Hagerman	John	W408	6, 7, 34
Halvorson	Steven	W396	3, 34
Handy	Dexter	E141	2, 3, 41, 42, 34, 38, 43, 11
Handy	Dexter	E147	34
Harris	Daniel	PM 51	34
Hart	J. Barry	M27	7, 34
Hassinger	Janet	W418	34

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Last Name	First Name	Comment Code	Response Numbers
Hayslip	Mary	W433	34
Henderson	Linda	E148	34
Holzer	Robin	PM 12	1, 28
Hong	CF	W383	1, 34
House	Doug	E128	1, 34, 41
Houston	Becky	PM 33	1, 3, 38
Hrabar	Stephanie	M25	9, 34, 42
Hysinger	Larry	W420	24, 34
Irones	Armon	W361	34
Irwin	Carolyn	W437	1, 34, 41, 38, 35, 17
Jahangiri	Romin	PM 03	1, 7
Jahangiri	Romin	W436	8, 9, 7, 34, 42
Jahangiri	Kevin	W439	7, 34
Kellogg	Paul	W397	1, 34
Laakso	Chris	W380	1, 34
Landero	Sara	PM 58	34
Lange	Barbara	E133	1, 34, 38, 41
Larimore	James	W394	2
Larimore	James	W395	1, 34
Larimore	James	W403	1, 34
Larimore	James	W404	34
Lawler	Mary	W422	6, 8, 34
Lindsay	Lauren	E134	38, 34
Loya	Lisa	E112	3, 34
Lytle	Aaron	W393	34
Madrasi	Keshor	PM 09	1, 34
Marroquin	Linda	E131	1, 34, 41
Martinez	Jamie	E142	7, 34
Martinez	Jamie	P1	7, 34
Martinez-Salazar	Elizabeth	PM 49	34
Masters	Blake	W428	34
Mavritsakis	Themistocles	W427	34
McIntyre	Heather	E143	1, 34, 41
McMillan	Dan	W375	37, 34
McMillan	Dan	W376	34
McMillan	Dan	W381	34
McMillan	Dan	W384	34
McMillan	Dan	W416	32
McMillan	Dan	W417	34
McMillan	Dan	W434	34

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Last Name	First Name	Comment Code	Response Numbers
McMillan	Dan	W440	34
Mejia	Ricardo	PM 50	34
Merrick	Tami	M33	1, 34, 41
Merrick	Tami	M34	34, 42
Merrick	Tami	PM 45	24, 33, 38, 41, 34, 17, 18
Merrick	Tami	W386	24, 33, 38, 41, 34, 17, 18
Merrick	Tami	W388	24, 33, 8, 41, 34, 17, 18
Merrick	Tami	W409	3, 34
Mueller	Kristen	W410	1, 34, 41, 38, 35, 17
Murphy	Sean	W398	35, 34, 41, 3
Nicosia	Paul	W421	34
Norboge	Nicolas	PM 08	1, 5, 34
Olson	David	E129	17, 34, 38, 42
Olson	David	W411	34, 38, 42
Ostlind	Steve	PM 17	1, 34, 17
Parente	Nicola	W425	1, 34, 17
Park	Jung	PM 27	1, 34
Parker	Cliff	PM 55	39
Patel	Dilip	W412	34
Petry	Edmund	E149	34
Pitaniak	Erik	PM 63	34
Proctor	Robert	PM 34	1, 4, 17, 38
Punske	Gregory	E150	34
Raimond	Randy	E130	1, 34, 41
Ramirez Jr	Joel	PM 28	7, 34
Reyna	Rebecca	E144	34
Reyna	Rebecca	M35	34
Richards	Mike	E117	7, 34
Richards	Mike	W385	7, 34
Richards	Mike	W392	7, 34
Roque	Jonathan	W389	34
Ruth	Carolynn	W401	7, 34
Rutledge	Pat	E136	41, 38, 42, 34
Rutledge	Pat	W419	41, 38, 42, 34
Schenke	Diane	W400	34
Schultea	Carl	E122	7, 34
Self	Ronnie	W370	34
Shanley	Kevin	E113	34
Shao	Jack	W371	1
Sherman	Howard	W435	1, 34, 41, 38, 35, 17

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Last Name	First Name	Comment Code	Response Numbers
Sinkewich	Anton	W362	1, 5, 6
Sinkewich	Anton	W364	1, 5, 6
Slotboom	Oscar	E116	34
Slusher	Mark	W407	1, 34, 3
Smith	Leticia	PM 07	1, 34
Smith	Frances	PM 15	1, 6, 20
Smith	Marianne	PM 21	1, 3, 33, 17
Snider	Susan	PM 14	1, 3, 20
Socki	Adam	W368	1, 34, 3
Sommer	Carl	E137	1, 34
Stokes	Bobby	E119	7, 1, 34,
Strater	Gerry	W405	1, 34
Stratton	Mark	W358	1, 34
Swierc	Carl	W390	34
Tello	Lynette	E145	34, 3
Tesar	Deborah	E132	1, 34, 41
Thomas	Steven	E118	7, 34
Torres	Maribel	W363	1, 34
Trevino	Jose Angel	W432	3, 34, 41
Trujillo	Oscar	E114	7, 34
Trujillo	Oscar	M28	7, 34
Underwood	Tracy	W378	6, 7, 34
Vasquez	Guadalupe	PM 11	34
Velez	Janna	PM 36	2, 3, 6, 15, 16, 34
Waggoner	Christina	PM 59	3, 14, 24, 33, 34
Wagner	Brock	W373	34
Walle	Armando	M31	34
Watkins	Nathan	E146	7, 34
Watson	J	PM 60	34
Weston	Jim	E125	1, 34, 41
Weston	Jim	PM 53	38, 39, 35, 17, 34, 41
Wong	Iggy	W366	1, 34
Woodson	Norman	PM 16	1, 34, 22, 38
Woodward	James	W377	7
Yang	Ivy	E120	1, 6, 7, 34
Yang	Ivy	W391	34,1,6,7
Yang	Ivy	W399	34,1,6,7
Zak	Greg	M26	7, 34
Zuche	Bryanne	PM 01	1, 5, 6

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1. Response to comments about the process of developing and evaluating alternatives for the proposed North Houston Highway Improvement Project (NHHIP), and the design alternatives for Segments 1, 2, and 3.

The NHHIP involves evaluation of I-45 North from the US 59/SH 288 interchange to Beltway 8 North, the Hardy Toll Road from I-610 North Loop to Beltway 8 North, and portions of I-10 and US 59 near downtown Houston. The solution to the highway transportation needs in the study corridor has not been determined. Previous studies (North-Hardy Corridor Studies) identified a need for additional highway capacity in the north Houston corridor, and recommended adding 4 managed lanes to the I-45/Hardy Toll Road corridor from downtown Houston to Beltway 8 North (North-Hardy Planning Studies, Highway Component, 2005).

During the approval process for the Final North-Hardy report for the Highway Component, TxDOT agreed to the following goals for this phase of project planning.

- Stay within the existing I-45 right-of-way between Quitman Street and Cavalcade Street, except at intersections where turn lanes may be needed.
- Minimize adverse effects on quality of life issues of the residents and neighborhoods in the project area.
- Study Hardy Toll Road as an alternative route for additional lanes.
- Evaluate use of tunnels as an alternative in areas of constrained right-of-way.

This project is evaluating only highway improvements; however, transit in the North-Hardy Corridor was evaluated in prior studies, and other agencies are responsible for implementation of transit. The previous North-Hardy Corridor Studies, which the Metropolitan Transit Authority of Harris County (METRO) participated in with TxDOT and Houston-Galveston Area Council (H-GAC), considered alternative transportation modes, and identified a regional transit system plan that included commuter rail. METRO is implementing a transit plan, including light rail. The Gulf Coast Rail District is studying other regional commuter rail alternatives. Please refer to **Response 3** for more information on other modes of transportation, including rail and transit.

We considered traffic projections and regional roadway planning, information on environmental constraints, and input from the public and agencies to develop a “universe” of alternatives that meet the highway transportation needs in the study corridor. These alternatives were presented to agencies and the public for comments in October 2012. Traffic data from 2012 was used to screen the project alternatives. This data is more recent than what was used in the project Purpose and Need Statement. The 2012 traffic data is currently being updated

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and will be presented at future public meetings. It will be updated as needed, for use in future alternative screening. The most up to date traffic data will be available at the next public meetings. The universe of alternatives was developed from previously identified alternatives that were presented in the *North-Hardy Planning Studies Alternatives Analysis Report (Highway Component)*, and alternatives developed by the project engineering team. The preliminary alternatives were roadway transportation alternatives including at-grade, elevated, and tunnel design options. Interchanges, access ramps, frontage roads, access to adjacent properties, and other design considerations were not evaluated in detail.

The project team then narrowed the focus of study from the “universe of alternatives” to a reasonable range of alternatives for more detailed study. The range of alternatives includes a "No Action", or No Build alternative. These alternatives and the results of the alternatives evaluations were presented to agencies and the public for comments in November 2013. The next step in the analysis is to review and revise the alternatives, if needed, in consideration of public and agency input, and the team’s evaluations of engineering, traffic, and environmental criteria.

TxDOT and the study team develop alternatives (the Universe, Reasonable, Viable, and one Recommended Alternative) in consideration of input from other agencies and the public throughout the study process. The team also analyzes and evaluates the alternatives using engineering, traffic, and environmental criteria to determine which alternative would best meet the project’s need and purpose.

The engineering criteria that were used to evaluate the Reasonable Alternatives were developed to assist in determining which of the alternatives would move forward to the next level of study (viable alternatives phase). The following evaluation criteria used to analyze the reasonable alternatives have three major components:

- 1) Constructability**
- 2) Functionality Requirements**
- 3) Operations and Maintenance**

Each of the respective evaluation criterions are described in detail below.

1) Constructability

Constructability is a vital component in determining if an alternative will be viable for the next level of study. The sub-criteria used to determine the overall rating for Constructability for the alternatives included:

- **Construction Duration** – Estimated period of time to construct the alternative.
- **Contractor Availability** – Availability of a general construction contractor, can a local contractor be utilized or will a specialty

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contractor need to be mobilized.

- **Construction Risk** – Potential risks (unforeseen conditions, schedule/cost overrun, etc.) associated with the construction of the various alternatives.
- **Construction Staging/Sequencing Complexity** – Complexity of the contractor's staging requirements as well as the phasing of the overall project and impact to the existing highway system.
- **Permanent Right of Way (ROW) Acquisition** - Addresses the alternative's required permanent ROW acquisition.
- **Utility Relocations** – Impacts to existing major utilities for the alternative.
- **Long Term Geotechnical Risks** – Addresses the alternative's susceptibility to existing fault lines, anticipated settlement, potential water infiltration, and potential of major structural repair associate with such risks.

2) Functionality Requirements

Functionality Requirements is the second vital component in determining if an alternative will be viable for the next level of study. The sub-criteria that will be used to determine the overall rating for Functionality Requirements for the alternatives are described as:

- **Design Life Expectancy** – Anticipated design life expectancy of the alternative's proposed improvements.
- **Design Criteria Limitations** – Addresses the various design elements and any limitations associated with the alternative including design speed, vertical clearance, roadway typical sections, roadway alignment, and roadway profile.
- **Opportunity for Future Expansion** - The alternative's opportunity/potential for future infrastructure expansion to address a potential increase in traffic demand as well as changing traffic patterns.
- **Incident Management (Design Factors)** – Addresses the alternative's requirement for additional design features/facilities including breakdown lanes, emergency exits, ventilation shafts and traffic control features.

3) Operations and Maintenance

Operations and Maintenance is the final vital component in determining if an alternative will be viable for the next level of study. The sub-criteria that will be used to determine the overall rating for Operations and Maintenance for the alternatives are described as:

- **Traffic and Systems Control** – The alternative's type of traffic and systems control required including personnel and equipment needed to monitor daily traffic conditions.

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- **Incident Management (Operations)** – The alternative's ability to handle incidents as they occur and the needed equipment and personnel to clear/manage the incident.
- **Maintenance Requirements** – The alternative's special maintenance requirements that are not typical to TXDOT maintenance staff.
- **Incident Recovery (Recovery Time)** – The alternative's estimated amount of time to recover from common incidents that are anticipated during the life expectancy of the roadway system.

When considering all of the above in evaluating the preliminary alternatives, the tunnel alternatives ended up with a score lower than the at-grade, depressed and elevated alternatives. The three reasonable alternatives moving forward will be studied and evaluated in more detail and will result in the selection of one recommended alternative for the corridor.

At this level of analysis, the construction cost was not used as criteria, so no cost estimates were developed for any of the alternatives.

As discussed in the Agency Coordination and Public Involvement Plan (ACPIP) for the NHHIP, additional public meetings are planned during development and evaluation of alternatives, prior to distribution of the Draft Environmental Impact Statement (DEIS). A public hearing will be held after distribution of the DEIS. TxDOT and FHWA will also continue conducting meetings with cooperating and participating agencies. The project team will also meet with elected officials and resource agencies as needed or as requested to discuss the alternatives and evaluation criteria. A final decision on the proposed project will not be made by TxDOT and FHWA until after agencies and the public have the opportunity to comment on the Final Environmental Impact Statement (FEIS). The ACPIP includes a proposed schedule for planned meetings and project milestones and describes the study process and agency and public review in detail. It is not expected that the EIS process would be complete before 2017. Final design would not be completed until after this study process is complete.

Specific comments and questions about alternatives and project design have been reviewed by the project team and are being considered during the project development process. At this stage of the alternatives evaluation process, each comment and question cannot be responded to, as many details about the project are not known. More detailed information about the alternatives is being developed as the study proceeds.

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2. Response to comments about the cost of the project and estimated improvement of average speed (3 miles per hour) on general-purpose lanes, and request to update traffic data.

The North-Hardy Planning Studies - Alternatives Analysis Report (Highway Component) documents the analysis of highway alternatives evaluated for the North-Hardy study corridor. In the study, Conceptual Capital Cost was one factor examined in the analysis of the “short list” of six build alternatives. Other factors were: Mobility Improvements/Demand Potential, Regional Connectivity, Ease of Implementation, Environmental Impacts, and Community Impacts. Similar evaluation factors and additional criteria are being used to evaluate and compare alternatives for the proposed NHHIP. Traffic mobility impacts of the Universe of Alternatives were evaluated, and will continue to be evaluated as alternatives are refined. Reduced travel times can reduce travel costs, and for roadways with thousands of trips per day, the cumulative cost savings can be substantial. Project construction costs will be evaluated for the three preferred alternatives, once these are identified.

Potential project cost was not a consideration or evaluation factor during the development and evaluation of “preliminary alternatives”. Cost will be included in the screening and evaluation of the “reasonable alternatives” in the next stage of the study process. Estimating cost prior to this stage is difficult as there is not enough design detail to be accurate.

3. Response to comments about considering other modes of transportation (rail, transit) as alternatives for the proposed NHHIP

- a. Agencies should work together to develop a project that includes transit (rail, bus, etc.)
- b. Coordinate this study with TxDOT Rail Division’s HSIPR (high speed rail) study
- c. HOV lanes should be preserved, and FTA’s investment in them
- d. METRO needs to ensure that alternatives would maintain or improve access points and accommodate buses

A variety of modal choices were considered during the North-Hardy Corridor studies, which the Metropolitan Transit Authority of Harris County (METRO) participated in with TxDOT and the Houston-Galveston Area Council (H-GAC). Modes of transportation addressed in the North-Hardy Corridor Studies included transit (bus and rail) and highway. The studies identified a need for alternative transportation modes in the north Houston corridor. METRO is implementing the transit plan in the corridor, including light rail projects. The Gulf Coast Rail District and TxDOT Rail Division are studying other regional commuter rail alternatives. The NHHIP is proposed to implement highway improvements in the area of the North-Hardy Corridor from downtown Houston to Beltway 8 North.

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Summary of North-Hardy Corridor Studies

The North-Hardy Corridor studies evaluated transit and highway improvement alternatives for a corridor from downtown Houston to 30 miles north, principally in the area between I-45 and the Hardy Toll Road, and including Bush Intercontinental Airport (IAH) and segments of I-45 and US 59 south of downtown. Study results were documented in the three reports listed below.

- 2003 North-Hardy Corridor Alternatives Analysis Report: Examined transit and highway alternatives; recommended that transit alternatives be examined prior to detailed evaluation of highway alternatives.
 - 2004 North-Hardy Corridor Planning Studies, Alternatives Analysis Report (Transit Component): Findings used to develop a regional Transit System Plan that combines an aggressive bus service program with Advanced High Capacity Transit (light rail). METRO is implementing the transit plan, including light rail.
 - 2005 North-Hardy Planning Studies, Alternatives Analysis Report (Highway Component): The Recommended Highway Alternative from downtown Houston to Beltway 8 North was to add four managed lanes to the I-45/Hardy Toll Road corridor.
- 4. Response to comments about possible increases in congestion in the inner city, additional traffic on surface streets and in neighborhoods, and potential impacts to community and public resources caused by congestion or additional neighborhood traffic.**

The proposed project will be planned to reduce traffic congestion, increase safety, and facilitate hurricane evacuation. TxDOT will make every effort to avoid or minimize potential adverse impacts to community, public, and other sensitive resources by minimizing right-of-way acquisition, and will identify mitigation measures for unavoidable adverse impacts. Every effort will be made to minimize adverse effects on quality of life issues of the residents and neighborhoods. Neighborhood traffic should not increase, and may decrease if highways are improved. Traffic analysis studies are being performed.

- 5. Response to comments about possible adverse impacts to neighborhoods, low income housing, and quality of life**

FHWA and TxDOT will make every effort to minimize adverse impacts to neighborhoods and associated quality of life issues of the residents of neighborhoods. Potential environmental impacts of the alternatives developed are being evaluated and are an integral part of the transportation decision-

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making process for the project. An important purpose of the EIS process is to identify potential impacts resulting from a proposed project, including beneficial and adverse impacts, and to identify measures that may avoid, minimize, or mitigate unavoidable adverse impacts. In accordance with the National Environmental Policy Act (NEPA) of 1969 and FHWA's implementing regulations and related guidance, the EIS will consider various environmental, socioeconomic, and other impacts for each reasonable alternative considered. The analysis of quality of life considerations will include evaluation of existing neighborhood resources (for example, residences, businesses, parks, churches and other places of worship, historic properties, public land, visual/aesthetic characteristics) and the potential impacts of construction, traffic noise, air emissions, changes in access, right-of-way acquisition, etc. Direct, indirect, and cumulative impacts of the proposed project will be evaluated.

Potential impacts to low-income and minority populations will be identified in accordance with Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994. The proposed project will be developed in consideration and support of the fundamental goals of environmental justice:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

6. Response to comments about the impact to neighborhoods and homes, due to expanding roadway right-of-way, and requests to widen the east or west side of I-45

Preliminary right-of-way requirements for the proposed project alternatives were identified and shown at the public meetings in October 2012 and November 2013. Maps and typical sections are also shown on the project website (www.IH45northandmore.com). For the three study segments, the alternatives that were developed would have varying right-of-way requirements and a preliminary assessment of environmental impacts was performed. The next phase of alternatives analysis and development will include a more in depth evaluation of the potential impacts to neighborhoods and homes.

In accordance with NEPA and FHWA's implementing regulations and related guidance, the EIS will consider various environmental, socioeconomic, and other impacts for each reasonable alternative considered. The analysis of potential impacts of expanding the roadway right-of-way will include evaluating potential impacts to neighborhoods, homes, businesses, and other land uses. Direct,

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indirect, and cumulative impacts of the proposed project will be evaluated.

Refer to **Response 7** for more information on right-of-way expansion.

7. Responses to comments about the potential impact to businesses and employment

In accordance with NEPA and FHWA's implementing regulations and related guidance, the EIS will consider various environmental, socioeconomic, and other impacts for each reasonable alternative considered. The analysis of potential impacts of expanding the roadway right-of-way will include evaluating potential impacts to businesses, including employment. Direct, indirect, and cumulative impacts of the proposed project are being evaluated. As alternatives are evaluated in more detail, the study team will evaluate potential right-of-way requirements, changes in access, traffic impacts, and other factors that could affect businesses.

Preliminary right-of-way requirements for the proposed project alternatives were identified and shown at the public meetings in November 2013. Maps and typical sections are also shown on the project website (www.IH45northandmore.com). For the three study segments, the alternatives that were developed would have varying right-of-way requirements and a detailed assessment has not been performed. The next phase of alternatives analysis and development will include a more detailed evaluation of the potential impacts to businesses. The evaluation criteria are listed in the "Secondary Screening Process for Preliminary Alternatives".

Specific questions and comments from business owners are considered by the project team, but are not being individually responded to at this stage of the alternatives evaluation process.

Please refer to **Response 6** for more information about right-of-way expansion.

8. Response to comments about noise and vibration

Traffic noise impacts are being evaluated during the EIS process in accordance with federal regulations. The National Environmental Policy Act (NEPA) of 1969 provides broad authority and responsibility for evaluating and mitigating adverse environmental effects, including roadway traffic noise. The federal legislation that specifically involves abatement of roadway traffic noise is the Federal Aid Highway Act of 1970. This law mandates FHWA to develop noise standards for mitigating roadway traffic noise and requires promulgation of traffic noise-level criteria for various land use activities. FHWA's Noise Standard is at 23 Code of Federal Regulations (CFR) Part 772. TxDOT developed guidelines for analysis and abatement of roadway traffic noise for Federal

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projects authorized under 23 United States Code (USC). The guidance was reviewed and approved by FHWA. Analysis of traffic noise impacts and noise abatement measures are being performed as part of the EIS for the NHHIP.

TxDOT is not required to assess the impact of operational traffic-induced vibrations. The Federal Highway Administration (FHWA) determined in 2005 that most studies have shown that both measured and predicted vibration levels are less than any known criteria for structural damage to buildings.

Some specific comments on noise are:

- Construct noise barriers prior to roadway construction.
 - Response: This would be decided by the contractor for the project and is not known at this time.
- Noise abatement should be included on elevated structures to reduce noise levels.
 - Response: This is being included in the noise evaluation.
- Use polymer pour or other materials to reduce noise levels.
 - Use of specific pavement types or surface textures is not considered as a noise abatement measure, per TxDOT's guidelines and in accordance with 23 CFR (Code of Federal Regulations) 772.13. TxDOT – Houston District has been looking at ways of reducing noise levels associated with all of its highways. TxDOT is proposing to use a road surface with longitudinal tining. Tining is the grooved surface texture applied to concrete roads to improve traction. By reorienting the tining, TxDOT can reduce the noise levels coming from the road to levels similar to that with a porous friction coat pavement (PFC). A PFC pavement provides similar benefits, but these benefits degrade as the spaces in the pavement are filled with dirt and debris. The benefits gained by using a porous friction coat can be matched by the longitudinal tining, without degraded performance issues over the lifetime of the pavement. A longitudinally tined concrete pavement would also have a longer lifespan before it would need to be resurfaced.
- Reduce noise levels with landscaping.
 - Response: Landscaping will be included.

9. Response to comments about air quality, air pollution and emissions, and health protection including the comment that tunnels cause less pollution

Air quality impacts are being evaluated and documented in the EIS in accordance with applicable air quality regulations and guidance. Because the project is in an area that does not attain the ozone standard, it must conform to the State Implementation Plan (SIP) to achieve national ambient air quality standards. The proposed project must be consistent with the area's financially

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constrained Regional Transportation Plan (RTP). The RTP and the first four years of roadway projects, called the Transportation Improvement Program (TIP), for the Houston-Galveston region must be determined to be conforming to the region's motor vehicle emissions budget set by the state.

The air quality analysis conducted for the EIS will address ozone, carbon monoxide (CO) and Mobile Source Air Toxics (MSAT). Carbon dioxide is recognized as a naturally occurring greenhouse gas. It has been classified as a pollutant by the EPA, but is not currently regulated under the National Ambient Air Quality Standards.

Roadway tunnels can be viewed as a chamber in which the emission from vehicles is collected and released at few selected points along the tunnel alignment. Compared with surface roads, the air quality as experienced by the road users is relatively poor whereas the impacts on local residents is redistributed so that the contaminated air is more concentrated near the points where tunnel air is released into the general atmosphere (portals and ventilation buildings). Air quality dispersion assessment at these discharge locations will be necessary to ensure that levels do not exceed acceptable concentrations.

Based on a study of Tunnel Air Emission by Dr. Fathi Tarada, UK representative for the World Road Association (PIARC) Technical Committee on Road Tunnel Operations (2007), there are new technologies available to improve air quality within and outside tunnels. Electrostatic Precipitators can be installed to reduce particulate matter from tunnel emissions. NO₂ can be removed catalytically using activated carbon filters. In any such installations however, there will be significant energy and maintenance costs and the energy consumption of the precipitators leads to additional carbon emissions. A careful assessment of the overall costs and benefits, both monetary and environmental of any technology for tunnel air quality improvements is always recommended.

10. Response to comments about flooding and drainage

Drainage and flooding are important considerations that are being addressed during the project development process. The proposed project would be designed to not adversely impact the base flooding elevations to a level that would violate applicable floodplain regulations and ordinances. Proposed roadway drainage facilities would permit conveyance of the 100-year flood without causing major impacts to the main lanes of the proposed roadways, streams, or adjacent properties. Fill placement in the floodplain would be mitigated with equivalent floodplain storage in the vicinity of the proposed project. During final design, final drainage and mitigation analyses will be performed, and will be reviewed by regulatory agencies to confirm that adequate measures have been taken to ensure that floodplain encroachment does not increase the risk of flooding to adjacent property. Addressing current

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flooding is not a focal point of this project, nor is it an issue under the jurisdiction of TxDOT. The NHHIP will not contribute to additional flooding. Storm water detention ponds may be required as mitigation for storm water flow; TxDOT will consider wet-bottom detention ponds if another local agency will maintain them.

11. Response to comments about tolling

Alternatives that satisfy the identified need for and purpose of the project, including managed lanes/tolling alternatives, will be considered. The alternatives will include managed lanes/tolling alternatives. The Texas transportation system faces challenges like never before. Demand on the system is outpacing available revenue, and factors like inflation, a growing population, an aging infrastructure, and more fuel-efficient vehicles are pushing current funding sources to their limits. Tolls are used as an additional source of revenue to fund construction and maintenance of roadways. Existing lanes on I-45 would not be tolled. New lanes on I-45 may be tolled. Hardy Toll Road will continue to be tolled. TxDOT is coordinating with Harris County Toll Road Authority (HCTRA) during the NHHIP studies.

TxDOT or HCTRA will be responsible for tolling; a decision on this has not yet been made. There is a good possibility that there will be a toll for single occupant vehicles, but this has not yet been decided. Adding free HOV access to HCTRA toll roads during rush hour will be decided by HCTRA. Managed lanes will accommodate existing HOV lanes.

12. Response to comments about funding the project through sale of bonds

This is a funding option that will probably be used to fund part of the project.

13. Response to comments about visual impacts

FHWA and TxDOT will make every effort to minimize adverse visual impacts. Potential environmental impacts of the alternatives developed are being evaluated and are an integral part of the transportation decision-making process for the project. An important purpose of the EIS process is to identify potential impacts resulting from a proposed project, including beneficial and adverse visual impacts, and to identify measures that may avoid, minimize, or mitigate unavoidable adverse impacts.

14. Response to comments about impacts to parks and recreation

Based on analysis of the preliminary alternatives, no parks would be directly impacted by the NHHIP project. FHWA and TxDOT will make every effort to minimize adverse impacts to parks and other recreation resources. Potential

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environmental impacts of the alternatives developed are being evaluated and are an integral part of the transportation decision-making process for the project. An important purpose of the EIS process is to identify potential impacts resulting from a proposed project, including beneficial and adverse impacts, and to identify measures that may avoid, minimize, or mitigate unavoidable adverse impacts.

Some specific comments on parks include:

- Coordinate with City of Houston Parks Department to create a covered green belt (Segment 2)
 - Response: It is too early in the process to commit or not commit to this request. It will be addressed in the future if required by the selected alternatives.
- Is there federal money available for building more parks? Use carbon credits or sell right-of-way on TXDOT land.
 - Response: The federal money TxDOT receives for projects are for transportation projects only and cannot be used to build parks. Coordination with the City of Houston Parks Department will be addressed in the future if required by the selected alternatives.

Per federal regulations, the Federal Highway Administration (FHWA) and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless certain conditions apply. FHWA will ensure that the study process complies with the regulations.

15. Response to comments about having better, more definitive goals for the project

FWHA and TxDOT will review the project goals throughout the study process, as alternatives are developed and evaluated, and consider input from agencies and the public. Goals are being quantified, where appropriate, to address transportation needs related to congestion, safety, emergency evacuation, and roadway design.

16. Response to comments about impacts to property values and property acquisition

There are many variables that influence property values. Property values can increase, decrease, or remain the same as a result of roadway improvements. A cursory review of studies on this topic reveals that transportation improvements can affect property values both beneficially and negatively. The NHHIP is being developed to minimize adverse impacts to residential, commercial, industrial, and other land uses in the project area.

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Property acquisition would not occur until the EIS study and engineering design is complete. When property acquisition is required, TxDOT's acquisition and relocation assistance program would provide assistance and counseling to residential property owners that would be required to relocate. The relocation assistance program is conducted in accordance with the *Uniform Relocation and Real Property Acquisition Policies Act of 1970*, as amended; *49 CFR Part 24, Subparts C through F*; *Title VIII of the Civil Rights Act of 1968* (Federal Fair Housing law); *Housing and Urban Development (HUD) Amendment Act of 1974* and TxDOT policies and procedures. Relocation resources would be available, without discrimination, to all affected property owners required to relocate as a result of the implementation of a proposed project. No person would be displaced by this project unless and until adequate replacement housing has already been provided or is in place. Replacement housing would be offered to all displaced persons regardless of their race, color, religion, sex, disability, or national origin. All replacement housing would be decent, safe, and sanitary, without causing undue financial hardship. Non-residential property owners, such as businesses, churches, and others would be provided information on adequate replacement locations for their current property and may be reimbursed for costs based on TxDOT policies and procedures.

17. Response to comments about aesthetics and incorporating landscaping into the project, and the request to add greenspace and parks

There are a variety of federal, state, and departmental acts and directives that mandate TxDOT design and maintenance activities related to landscape and aesthetics design. While there are numerous citations, the combined impact of these requirements can be summarized as follows:

- The landscape and visual aesthetic qualities of a transportation corridor are an environmental characteristic that, by law, must be considered in the design process and, where possible, enhanced.
- The landscape disturbed by the construction of a highway must be reestablished for environmental and aesthetic reasons. The revegetation process is to be accomplished with appropriate native and adapted species.
- To the extent possible, plants used for revegetation of rights-of-way should be low water use (xeric) plant materials.
- Where a transportation project must disturb an environmentally sensitive landscape, wetland, historic site, established residential neighborhood, or scenic landscape, appropriate actions must be taken to mitigate visual and adverse environmental impacts.
- TxDOT recognizes the need for developing highways with acceptable visual quality and has developed several proactive programs that encourage and assist the development of such transportation corridors. These include the Transportation Enhancements Program, Construction Landscape Program, Cost Share Program, the Governors Community

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Achievement Awards, Green Ribbon Landscape Improvement Program, and Landscape Partnership Program.

A portion of construction budget is allocated for landscaping; however TxDOT does not build parks. Additionally, the project would be developed under TxDOT's Green Ribbon Program, which allocates funds for trees and plants within the roadway right-of-way. Any additional greenspace, including parks, would have to be provided by agencies and organizations other than TxDOT.

Please refer to **Response 14** for more information regarding the addition of greenspace, landscaping, and parks.

18. Response to comments about improving access for pedestrians, cyclists, and/or transit riders, and the request to add bike trails

Bicycle use on frontage roads will be considered if enough right-of-way is available. Bicyclists and pedestrians would not be allowed on the main lanes of I-45, Hardy Toll Road, I-10 and US 59.

In accordance with the federal Policy Statement on Bicycle and Pedestrian Accommodations Regulations and Recommendations by U.S. Department of Transportation (March 2010), TxDOT will consider including bicycle and pedestrian accommodations in the proposed project, taking into consideration existing and anticipated bicycle and pedestrian facility systems and needs, and linkages to transit stops and corridors.

The addition of bike trails to the project area would need to be addressed by agencies and organizations other than TxDOT.

19. Response to comments about encouraging single-passenger commuter traffic

Highway transportation improvements are needed within the NHHIP area because the existing I-45 facility currently operates near capacity, resulting in congestion during peak and off-peak periods. Additionally, future transportation demand from projected population and economic growth is expected to place a greater strain on the existing facility. The population of the Houston-Galveston region is expected to increase by an estimated 3 million people, or 65 percent, between the years 2000 to 2035, while the growth rate in the study corridor is projected to be approximately 35 percent. The additional travel demand resulting from population growth in the region will put a strain on the existing facility. The purpose of the proposed action is to help manage the projected transportation problems in the project corridor to improve mobility and safety.

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Managed lanes are proposed and are being evaluated as part of this study. The managed lanes would provide travel options through a combination of limited capacity expansion coupled with operational strategies that seek to manage travel demand and improve transit and carpool opportunities.

20. Response to comments about the proposed project providing benefit to suburban areas while adversely affecting those who live in the city of Houston

The NHHIP is being planned to provide benefit to all users of the roadway(s) that TxDOT would propose to improve under this project. Projected increases in population and employment in the Houston region will contribute to additional traffic congestion on I-45, which is currently classified as serious to severe. The existing I-45 facility in the north Houston area currently operates near capacity, resulting in severe congestion during peak and off-peak periods. The proposed project is needed to address the severe congestion and to accommodate 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. Improved efficiency is also needed to aid in evacuation events. The additional demand will put a strain on the existing facility, which also has design deficiencies in some areas, which affects safety. The purpose of the proposed North Houston Highway Improvement Project is to create additional roadway capacity to manage congestion, enhance safety, and to improve mobility and operational efficiency.

The Houston-Galveston Area Council (H-GAC) is the region-wide voluntary association of local governments in the 13-county Gulf Coast planning region of Texas. H-GAC has developed forecasts of the future development trends and growth patterns in the region, and the effects on the traffic volumes for the design year 2035 – as reflected in the long-range plan, the 2035 Regional Transportation Plan (RTP) Update, adopted January 25, 2011. The regional traffic model incorporates all of the approved and planned roadway, transit, and other transportation projects that are projected to be needed in the region for the next 20+ years.

21. Response to comments about the project encouraging suburban growth

The proposed project is needed to address the severe congestion on existing I-45 and to accommodate anticipated future highway traffic for the design year 2035. The existing I-45 roadway facility in the north Houston area currently operates near capacity, resulting in congestion during peak and off-peak periods. Additionally, future transportation demand from projected population and economic growth throughout the entire Houston-Galveston region is expected to place a greater strain on the existing facility. The population of the entire Houston-Galveston region is expected to increase by an estimated 3 million

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people, or 65 percent, between the years 2000 to 2035. Suburban development is likely to continue to grow with or without the proposed project.

22. Response to comments about connecting Hardy Toll Road to downtown Houston

The Harris County Toll Road Authority (HCTRA) system map shows the Hardy Toll Road extension to downtown Houston as a future project. An assumption for the NHHIP study is that the extension is a reasonably foreseeable project, and that it will be operational by the time the NHHIP would be completed. Currently, the Harris County Toll Road Authority estimates that construction of the extension would begin in 2019, according to HCTRA's court approved capital plan.

23. Response to comments about conservation of natural resources

FHWA and TxDOT will make every effort to minimize adverse impacts to natural resources. Potential environmental impacts of the alternatives developed are being evaluated and are an integral part of the transportation decision-making process for the project. An important purpose of the EIS process is to identify potential impacts resulting from a proposed project, including beneficial and adverse impacts, and to identify measures that may avoid, minimize, or mitigate unavoidable adverse impacts. In accordance with NEPA and FHWA's implementing regulations and related guidance, the EIS process will consider the potential impacts to natural resources of reasonable alternatives considered. Natural resources to be addressed include wetlands, streams, vegetation, and wildlife.

Coordination regarding potential impacts to regulated resources, such as wetlands and water quality, would be in accordance with regulatory requirements. Permitting would be conducted in coordination with the applicable regulatory agency, and would involve review by agencies and the public, if required.

24. Response to comments about potential impacts to historic resources, including historic neighborhoods, districts, and buildings

Potential environmental impacts to historic resources are being considered during the development and analysis of alternatives. In the initial screening of the universe of alternatives, no alternatives were identified that would impact a historic property that is on the National Register of Historic Places (NRHP). Potential effects to historic resources are being evaluated in accordance with the National Historic Preservation Act of 1966 (NHPA) and the Antiquities Code of Texas. During the evaluation of the preliminary alternatives, several NRHP-listed

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historic resources were identified in the project area. To avoid potential impacts, the team re-routed the preliminary alternatives as needed.

In accordance with federal and state regulations, studies are being conducted during the EIS process to identify historic and archeological resources and the potential adverse effects of the proposed project. Every effort is being made to minimize disruption of and preserve existing historic resources, including potential historic districts, individual buildings/resources, and archeological resources.

25. Response to comments about potential impacts to cemeteries

Potential environmental impacts to cemeteries are being considered during the development and analysis of alternatives. In the initial screening of the universe of alternatives, and the secondary screening preliminary alternatives, no alternatives were identified that would impact a cemetery.

Additional studies are being conducted during the EIS process to identify cemeteries and the potential adverse effects of the proposed project. Every effort is being made to minimize impacts to cemeteries.

26. Response to comments about “rejoining”, or connecting, neighborhoods, and connecting to downtown

As alternatives were developed and evaluated, the feasibility of improving connections between neighborhoods was investigated. Some additional rejoin or connect neighborhoods; those include Alternative 10 in Segment 2 and Alternatives 11 and 12 in Segment 3. The engineering team considered a range of criteria to evaluate the various alternatives, the evaluation criteria is discussed in **Response 1**.

27. Response to comments about providing project information in Spanish

Some project information was provided in Spanish at the October 2012 public meeting and, at the public’s request, more Spanish translations of materials were provided at the public meeting in November 2013. All materials available at the public meetings are posted on the project website www.IH45northandmore.com, and are available at the TxDOT Houston District office. TxDOT will conduct a bi-lingual public hearing following the completion of the DEIS. Spanish-speaking persons can always discuss the proposed project with Spanish-speaking project team members who are present at all public meetings, and also by contacting the TxDOT Public Information Office at 713-802-5076.

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28. Response to comments regarding ways to improve public outreach

TxDOT considers all suggestions received and continuously implements strategies and methods to improve the dissemination of information to the public. One specific measure includes: 3D visuals once alternatives are narrowed down to the three reasonable alternatives.

29. Response to comments about considering the downtown Houston area roadways as a separate project

Alternatives specific to the downtown area are being evaluated and may become separate projects for development if they can be shown to be independent projects. At this time, the highways around downtown - I-45, I-10, and US 59 – are included for evaluation in the NHHIP studies.

The limits or logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for review of the environmental impacts. The Federal Highway Administration (FHWA) considers three factors when determining the limits of study for an EIS. The action evaluated in the EIS shall: (1) connect logical termini and be of sufficient length to address environmental matters on a broad scope, (2) have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made, and (3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

30. Response to comments about the website (www.IH45northandmore.com)

The website will be updated as information becomes available. Information will be provided in both Spanish and English where possible. Please note: only meetings sponsored by TxDOT are advertised on the project website.

31. Response to requests for receipt of project information

Commenter(s) who requested to be included on the project mailing list have been added to the list. Commenter(s) who asked to be kept informed or updated on the project are being included on project communications. In addition, TxDOT will provide information on the website (www.IH45northandmore.com) and via the Public Information Office when there is news regarding the NHHIP.

32. When would the project be constructed and property be acquired?

A construction date has not been determined. The project development process is expected to last until 2017, including public and agency coordination, development and evaluation of alternatives, preparation of Draft and Final Environmental Impact

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Statements (EIS), and the Record of Decision. The project could not be constructed until after FHWA has approved the EIS and issued Record of Decision, design plans have been approved, and necessary permits and approvals are obtained. It is not known when construction or property acquisition will begin; it is too early in the process to estimate. Following the completion of the environmental review, funding will need to be identified before property acquisition can begin.

33. Response to comments about planning this as a sustainable project, and requesting information about practices TxDOT will implement in this project to provide sustainability and green practices.

The project would be developed under TxDOT's Green Ribbon Program, which allocates funds for trees and plants within the roadway right-of-way.

34. Response to general comments

Comment noted

35. Response to request to build the roadway below grade if a tunnel is not possible

There are alternatives presented at the November 2013 public meetings that included depressed (or below grade) roadways. Alternative 10 in Segment 2 proposed the I-45 mainlanes to be depressed from just south of Patton to south of North Main St (approx. 2500 linear feet). Alternatives 11 and 12 in Segment 3 included depressed roadways along the I-10 corridor. At this level of study, no proposed depressed lanes for the I-45 and US 59 corridors were analyzed.

36. Response to request to elevate the roadway to prevent additional ROW requirements

Elevated roads were considered as alternatives but were dropped due to noise impacts, visual impacts and other factors.

37. Response to request to not widen the roadway

Previous studies identified a need for additional highway capacity in the north Houston corridor, and recommended adding four managed lanes to the I-45/Hardy Toll Road corridor from downtown Houston to Beltway 8 North (North-Hardy Planning Studies, Highway Component, 2005). Refer to **Response 1** for more information about the North-Hardy Corridor Studies, prepared by TxDOT, METRO, and H-GAC, which evaluated transportation needs in the corridor and potential highway, transit, and rail improvements.

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38. Response to request to build a tunnel

Please refer to answer on **Response 1** in regards to the evaluation criteria that were used to compare and evaluate the Preliminary Alternatives.

The evaluation studied and compared the alternatives to each other in order to narrow the list to the top 3 alternatives. When the tunnel alternatives were compared with other non-tunnel alternatives, they did not rank as favorable as the non-tunnel alternatives due to limited shoulder widths, lower speed, challenging incident management issues, the complexity of the tunnel construction compared with traditional roadway construction and the operational and maintenance requirements for the tunnel were by far more complex than those for traditional roadway. As a result, none of the tunnel alternatives scored in the top 3 alternatives to be considered for further evaluation and consideration. Please note that cost was not a factor as explained in **Response 1**.

In Segment 2 (I-610 to I-10), the tunnel alternative generally scores well from a traffic perspective if evaluated as a stand-alone section. The tunnel allows for good utilization of the managed lanes along I-45, reduces traffic on I-45 from about 10,000 to 33,000 vehicles daily, and reduces the volume to capacity ratio along I-45 general purpose lanes up to 14 percent. However, in Segment 3 (I-10 to US 59), the tunnel alternatives do not perform as well in the traffic evaluation criteria. One of the tunnel alternatives resulted in increased traffic and travel time on I-45, thereby negatively impacting the mobility, compared to the other alternatives. From a traffic prospective, Segments 2 and 3 should be evaluated together since the tunnel will extend in both segments and cannot be terminated at I-10, as a result both tunnel alternatives scored as undesirable in one or more of the traffic evaluation criteria.

39. Response to comment regarding maps used at meetings

The aerials used for the public meeting exhibits were from 2010. Updated aerials will be used for the next public meeting.

40. Response to request to extend comment period and/or conduct additional public meetings to review information presented at the third public meeting

At the request of the public, TxDOT extended the comment period from December 10 to December 31, 2013, and then to January 31, 2014.

Additional public meetings will not be held to address the changes in the alternatives from Public Meeting 2 to Public Meeting 3. Alternatives presented at meetings are preliminary based on the best available information at the time. As more analysis is conducted and more input is received from the public, alternatives

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may be modified. Changes to alternatives presented at Public Meeting 3 were the result of avoiding impacts and accommodating input from the public.

To address the public's concerns outside of the Public Meetings, TxDOT has attended numerous small meetings with residential and business interest groups, communities, and elected officials.

41. Response to comments that the public's favorite alternatives from the second public meeting were not selected to move forward, and that the public is being ignored

TxDOT and the other members of the project team take the public comment process very seriously and carefully consider all comments when evaluating alternatives and making decisions about the proposed project. However, commenting is not a form of "voting" on an alternative. The public's needs, ideas, and opinions are an important part of the NEPA process, but in addition, the project team must keep in mind many other considerations as they develop, evaluate, and select alternatives. Final decisions on alternatives are not based solely on what the public favors. The public's favorite alternatives must also score or perform better in the other selection criteria, including engineering, traffic, and environmental. If a favored alternative does not score as well as others, it must be dropped from further consideration, regardless of public support. This is the process that is set forth under the National Environmental Policy Act (NEPA).

Please continue to participate in the NEPA process; the project team values your input. Public comments are reviewed individually, and community concerns are addressed as much as possible in consideration of other factors.

42. Response to request to use the Hardy Toll Road rather than I-45

The Hardy Toll Road alternatives did not score well in traffic criteria evaluation, primarily due to low predicted utilization of managed lanes along Beltway 8 and I-610. The connector along Beltway 8 would be utilized at only 30 percent or less of its capacity. On I-610, the utilization is predicted to be at 55 percent or less. However, when the managed lanes are along I-45, the alternatives show a significantly higher utilization - from 73 to 85 percent. In addition, not enough traffic would be diverted to Hardy Toll Road to improve mobility and reduce congestion on I-45, as compared to other alternatives. The Hardy Toll Road alternatives would divert less than 3,500 vehicles daily from I-45 between Beltway 8 and I-610, whereas the other alternatives would divert 16,000 to 22,000 vehicles per day. From I-610 to I-10, the Hardy Toll Road alternatives would reduce I-45 traffic by about 10,000 vehicles daily, but other alternatives would reduce I-45 traffic by as much as 33,000 vehicles per day.

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43. Response to comments referring the NHHIP environmental review process as a Categorical Exclusion (CE), and an Environmental Assessment (EA)

TxDOT is preparing an Environmental Impact Statement (EIS) for this project, which is the highest level of environmental review. An EIS is a higher level of environmental review than an EA, which is a higher level of review than a CE. Below are definitions of each from the FHWA website www.fhwa.dot.gov

Categorical Exclusion (CE)

Categorical exclusion means a category of actions which do not individually or cumulatively have a significant effect on the human environment ... and ... for which, therefore, neither an environmental assessment nor an environmental impact statement is required.

Environmental Assessment (EA)

When the significance of impacts of a transportation project proposal is uncertain, an environmental assessment (EA) is prepared to assist in making this determination. If it is found that significant impacts will result, the preparation of an environmental impact statement (EIS) should commence immediately.

Environmental Impact Statement (EIS)

NEPA requires Federal agencies to prepare environmental impact statements (EISs) for major Federal actions that significantly affect the quality of the human environment. An EIS is a full disclosure document that details the process through which a transportation project was developed, includes consideration of a range of reasonable alternatives, analyzes the potential impacts resulting from the alternatives, and demonstrates compliance with other applicable environmental laws and executive orders. The EIS process is completed in the following ordered steps: Notice of Intent (NOI), draft EIS, final EIS, and record of decision (ROD).