Final
Environmental Assessment

SH 332, Houston District

From FM 521 to SH 288

CSJ: 1524-01-047

Brazoria County, Texas

September 2020

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

TABLE OF CONTENTS

1.0 Introduction 1

2.0 Project Description 1

2.1 Existing Facility 1

2.2 Proposed Project 1

3.0 Purpose and Need 2

3.1 Need 2

3.2 Supporting Facts and Data 3

3.3 Purpose 5

4.0 Alternatives 5

4.1 Build Alternative 5

4.2 New Location Drainage Channel Alternatives 6

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration 7

4.4 No Build Alternative 7

5.0 Affected Environment and Environmental Consequences 7

5.1 Right-of-Way and Displacements 8

5.2 Land Use 8

5.3 Farmlands 9

5.4 Utility Relocation 9

5.5 Bicycle and Pedestrian Facilities 9

5.6 Community Impacts 10

5.7 Visual and Aesthetic Impacts 12

5.8 Cultural Resources 12

5.8.1 Archeology 13

5.8.2 Historic Properties 13

5.9 Protected Lands 14

5.9.1 Section 4(f) 14

5.9.2 Land and Water Conservation Fund (LWCF) Section 6(f) 16

5.9.3 Parks and Wildlife Code (PWC) Chapter 26 16

5.10 Water Resources 16

5.10.1 Clean Water Act Section 404 16

5.10.2 Clean Water Act Section 401 19

5.10.3 Executive Order 11990: Wetlands 19

5.10.4 Rivers and Harbors Act 20

5.10.5 Clean Water Act Section 303(d) 20
5.10.6 Clean Water Act Section 402 21
5.10.7 Floodplains 22
5.10.8 Wild and Scenic Rivers 22
5.10.9 Coastal Barrier Resources 22
5.10.10 Coastal Zone Management 22
5.10.11 Edwards Aquifer 23
5.10.12 International Boundary and Water Commission 23
5.10.13 Drinking Water Systems 23
5.11 Biological Resources 23
5.11.1 Texas Parks and Wildlife Coordination 23
5.11.2 Impacts to Vegetation 23
5.11.3 Executive Order 13112 on Invasive Species 24
5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping 24
5.11.5 Impacts to Wildlife 24
5.11.6 Migratory Bird Protections 25
5.11.7 Fish and Wildlife Coordination Act 25
5.11.8 Bald and Golden Eagle Protection Act of 2007 25
5.11.9 Magnuson-Stevens Fisher Conservation Management Act 25
5.11.10 Marine Mammal Protection Act 25
5.11.11 Threatened, Endangered and Candidate Species 26
5.12 Air Quality 28
5.13 Hazardous Materials 33
5.14 Traffic Noise 35
5.15 Induced Growth 35
5.16 Cumulative Impacts 37
5.17 Construction Phase Impacts 39
6.0 Agency Coordination 40
6.1 Texas Parks and Wildlife Department Coordination 40
6.2 U.S. Army Corps of Engineers 40
6.3 TCEQ 40
6.4 U.S. Coast Guard (USCG) Coordination 40
6.5 Texas Historical Commission 40

7.0 Public Involvement 41

8.0 Post-Environmental Clearance Activities and Design/Construction Commitments 43

8.1 Post-Environmental Clearance Activities 43

8.2 Design/Construction Commitments 43

9.0 Conclusion 46

References 47

TABLES

Table 1: Potential Waters of the U.S. Present in the Project Area 17

Table 2: Potential Impacts to Waters of the U.S. 17

Table 3: Jurisdictional Waters in Which Regulated Activity is Anticipated to Take Place 18

Table 4: Navigable Waters within the Study Area..... 20

Table 5: Impaired Waters Within the Watershed and the Project would Discharge Directly into 21

Table 6: Congestion Management Strategies 33

Table 7: Mitigation and Monitoring Commitments 43

Table 8: Design/Construction Commitments 43

FIGURES

Figure 1: Levels of Service for Two-Lane Highways 4

Figure 2: FHWA Projected National MSAT Emission Trends 2010-2050 For Vehicles Operating on Roadways Using EPA's MOVES2014a Model 30

APPENDICES

Appendix A: Project Location Map
Appendix B: Project Photos
Appendix C: Schematics
Appendix D: Typical Sections
Appendix E: Plan and Program Excerpts
Appendix F: Resource Specific Maps
Appendix G: Resource Agency Coordination
Appendix H: Section 4(f) Documentation
Appendix I: Form NRCS-CPA-106

ACRONYMS

AADT	Annual Average Daily Traffic
ACS	American Community Survey
APE	Area of Potential Effects
BMP	Best Management Practice
CAAA	Clean Air Act Amendments
CBRA	Coastal Barrier Resources Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Carbon Monoxide
CR	County Road
CT	Census Tract
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ETC	Estimated Time of Completion
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FM	Farm-to-Market Road
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FWCA	Fish and Wildlife Coordination Act
H-GAC	Houston Galveston Area Council
IP	Individual Permit
IRIS	Integrated Risk Information System
LEP	Limited English Proficiency
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emissions Simulator
MS4	Municipal Separate Storm Sewer System
MSATs	Mobile Source Air Toxics
NATA	National Air Toxics Assessment
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NHL	National Historic Landmarks
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreements
PCN	Pre-Construction Notification
PEM	Palustrine emergent wetland
PFO	Palustrine forested wetland
PJD	Preliminary Jurisdictional Determination
PM	Particulate Matter

PST	Petroleum Storage Tanks
PWC	Parks and Wildlife Code
RBC	Reinforced Box Culvert
ROE	Right-of-Entry
ROW	Right-of-Way
RTHL	Recorded Texas Historic Landmarks
RTP	Regional Transportation Plan
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SOV	Single Occupancy Vehicle
SW3P	Storm Water Pollution Prevention Plan
TAC	Texas Administrative Code
TAQA	Traffic Air Quality Analysis
TCEQ	Texas Commission on Environmental Quality
TCMP	Texas Coastal Management Program
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TPDES	Texas Pollutant Discharge Elimination System
TPP	TxDOT's Transportation Planning and Programming Division
TPWD	Texas Parks and Wildlife Department
TSWQS	Texas Surface Water Quality Standards
TxDOT	Texas Department of Transportation
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USIBWC	U.S. International Boundary and Water Commission
VPD	Vehicles Per Day
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

The Texas Department of Transportation (TxDOT) proposes to reconstruct and widen State Highway (SH) 332 in Brazoria County, Texas from Farm-to-Market (FM) 521 to SH 288. The project location map can be found in **Appendix A**. SH 332 would be reconstructed and widened from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River, a distance of approximately 1.1 miles. The project would require additional right-of-way (ROW). The proposed construction area would be approximately 5.3 miles in length. FM 521 was selected as the western project limit and SH 288 was selected as the eastern project limit for logical termini purposes. The purpose of this Environmental Assessment (EA) is to study the potential environmental consequences of the proposed project and determine whether such consequences warrant preparation of an Environmental Impact Statement (EIS).

This EA has been prepared to comply with both TxDOT's environmental review rules and the National Environmental Policy Act (NEPA). This EA will be made available for public review and following the comment period, TxDOT will consider any comments submitted. If TxDOT determines that there are no significant adverse effects, it will prepare and sign a Finding of No Significant Impact (FONSI), which will be made available to the public.

2.0 PROJECT DESCRIPTION

2.1 Existing Facility

Currently, SH 332 is a rural two-lane undivided facility with two 12-foot-wide lanes (one in each direction) and 10-foot-wide outside shoulders from east of FM 521 (approximately 0.87 miles) to 500 feet west of FM 2004. The existing ROW in this section is generally 100 feet wide from 0.87 mile east of FM 521 to 0.4 mile west of Buffalo Camp Bayou, with the exception of an area 160 feet wide that extends 1,700 feet west of County Road (CR) 532. The existing ROW is 180 feet wide for 0.4 mile west from Buffalo Camp Bayou and 140 feet wide from Buffalo Camp Bayou to 500 feet west of FM 2004. From 500 feet west of FM 2004 to 1,700 feet east of FM 2004, SH 332 consists of a rural facility with two 12-foot-wide lanes (one in each direction), a 10-foot-wide center turn lane, and 10-foot-wide outside shoulders. The existing ROW in this section is generally 140 feet wide west of FM 2004 and tapers from 220 feet wide to 140 feet wide east of FM 2004. From approximately 1,700 feet east of FM 2004 to SH 288, SH 332 widens to an existing urban facility with raised medians, four 12-foot-wide lanes (two in each direction), and 10-foot-wide shoulders. The existing ROW in this section is generally 220 feet wide. The project schematic can be found in **Appendix C**. All intersections are at-grade and are controlled by traffic lights or stop signs. Two existing bridges are located on the project: one at Buffalo Camp Bayou and another at the diversion channel just east of the bayou.

2.2 Proposed Project

TxDOT proposes to reconstruct and widen SH 332 in Brazoria County, Texas from FM 521 to SH 288. SH 332 would be reconstructed and widened from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include

sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River, a distance of approximately 1.1 miles. The project would require approximately 70.4 acres of additional ROW. The proposed construction area would be approximately 5.3 miles in length.

Federal regulations require that federally funded transportation projects have logical termini. 23 CFR 771.111(f)(1). Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. FM 521 was selected as the western project limit and SH 288 was selected as the eastern project limit for logical termini purposes. FM 521 and SH 288 are considered rational end points for the proposed project (traffic generators and major intersecting highways). Although FM 521 is listed as the western limit, the actual western limit of construction would be approximately 3,000 feet east of FM 521. SH 288 is the actual eastern construction limit of the project. The project schematic and typical sections can be found in **Appendix C and D**.

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area. 23 CFR 771.111(f)(2). This means a project must be able to provide benefit by itself, and that the project does not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project has independent utility in accordance with 23 CFR 771.111(f)(2) because it would serve the need and purpose by itself and have independent and usable functionality even if no additional adjacent transportation improvements were to be implemented.

At this time the proposed project is not funded. However, it is anticipated that both federal and state funding would be involved at some percentage split yet to be determined.

The proposed project is consistent with the H-GAC's financially constrained 2019-2022 Transportation Improvement Program (TIP) and 2045 Regional Transportation Plan (RTP), as amended, which was initially found to conform to the TCEQ State Implementation Plan (SIP) by FHWA and FTA on August 2, 2019. Copies of the TIP and RTP pages are included in **Appendix E**. All projects that are proposed for federal or state funds were initiated in a manner consistent with federal guidelines in Section 450, of Title 23 CFR and Section 613.200, Subpart B of Title 49 CFR.

3.0 PURPOSE AND NEED

A Purpose and Need Technical Report for the proposed project has been completed and is on file at TxDOT's Houston District Office.

3.1 Need

The need for the project can be summarized by the following:

- The demand exceeds or approaches capacity during both of the daily commute periods.
- Congestion develops due to competing uses (i.e., local traffic use and through traffic use).
- Crash rates are higher than the statewide average.
- The lack of an adequate drainage system has contributed to poor drainage conditions along the roadway and adjacent roadside ditches.

3.2 Supporting Facts and Data

The traffic data analyzed for this document was obtained from TxDOT's Transportation Planning and Programming Division (TPP). Data received from TPP reported The Annual Average Daily Traffic (AADT) for SH 332 for the years 2015 and 2040. The traffic projections reflect growth in the proposed project area. Due to residential and business expansion within the proposed project area, traffic demands along SH 332 have increased. Based on data provided by TPP, the existing year AADT for 2015 was 11,150 vehicles per day (VPD). The proposed year AADT for 2040 was 16,800 VPD. The 2015 AADT of 11,500 VPD results in a Level of Service D and the 2040 AADT of 16,800 VPD results in a Level of Service E. Level of Service is a measure of traffic flow and congestion using letters A - F. Figure 1 illustrates the different Levels of Service for two-lane highways.

Figure 1:

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Another need for this project is safety. Crash data from the Texas Department of Public Safety for the 3 year period of 2012 to 2014 showed that there have been 251 crashes on SH 332 within the project limits. The statewide average crash rate for rural state highways is 85.68 in 2012, 81.58 in 2013, and 87.34 in 2014 per 100 million vehicle miles. The crash rates along SH 332 within the project limits per 100 million vehicle miles were 345.54 in 2012, 391.39 in 2013, and

473.21 in 2014. These rates are 403.29, 479.77, and 541.80 percent higher than the statewide average for 2012, 2013, and 2014, respectively. There was an average of approximately one crash every four days for the 3-year period. Out of the 251 crashes reported from 2012-2014 within the project limits, 79 resulted in injuries or possible injuries. Two of these crashes were fatal, seven caused incapacitating injuries, 35 caused non-incapacitating injuries, and 35 caused possible injuries.

Another need for this project is to address the lack of adequate drainage along the roadway. Three residents from the Riggs Oaks subdivision submitted comments at the September 2015 public meeting indicating heavy rain conditions cause flooding problems in the neighborhood under existing conditions. The City of Lake Jackson has also expressed concerns about the lack of adequate drainage along SH 332. The TxDOT area office has expressed intentions to have proper drainage along SH 332.

3.3 Purpose

The purpose of the proposed project is to reduce traffic congestion, accommodate population growth, enhance mobility and improve safety and drainage along SH 332. The proposed project would accomplish this purpose by adding capacity, dividing the undivided section of the roadway and updating drainage within the project area.

4.0 ALTERNATIVES

4.1 Build Alternative

Alternative 1 (which is the build alternative) would have four different segments with different proposed typical sections. From approximately 3,000 feet east of FM 521 to approximately 400 feet east of CR 532, the proposed typical section for SH 332 can be described as having 10-foot outside shoulders, four 12-foot lanes (two in each direction), four-foot inside shoulders and a 40-foot wide depressed grassy median. The typical ROW for this section of SH 332 would vary from 240 to 300 feet in width. This segment of the build alternative would have five-foot sidewalks on both sides of the roadway. The sidewalks on the both sides of SH 332 would be offset one foot from the ROW. This section would have open ditch drainage.

From approximately 400 feet east of CR 532 to approximately 800 feet east of CR 379A, the proposed typical section for SH 332 can be described as having 10-foot outside shoulders, four 12-foot lanes (two in each direction), and a flush median varying in width from 40-feet to 18-feet that would be striped to not allow vehicle use. This segment of the build alternative would have five-foot sidewalks on both sides of the roadway. The sidewalks on the both sides of SH 332 would be offset one foot from the ROW. This section would have open ditch drainage.

From approximately 800 feet east of CR 379A to approximately 600 feet west of the proposed bridge over Buffalo Camp Bayou, the proposed typical section for SH 332 can be described as having 10-foot outside shoulders, four 12-foot lanes (two in each direction), two-foot inside shoulders and a 18-foot wide raised median. The typical ROW for this section would be 220 feet in width. This segment of the build alternative would have five-foot sidewalks on both sides of the roadway. The sidewalks on the both sides of SH 332 would be offset one foot from the ROW. This section would have open ditch drainage.

From approximately 600 feet west of the proposed bridge over Buffalo Camp Bayou to FM 2004, the proposed typical section for SH 332 can be described as having the outer most lanes in each direction being 15-foot shared use lanes (which would accommodate bicycles), two 12-foot lanes (one lane in each direction), 1-foot inside shoulders and a 18-foot wide raised median. The typical ROW for this section would be 170 feet in width. This segment of the build alternative would have

five-foot sidewalks on both sides of the roadway. The sidewalks on the both sides of SH 332 would be along the back of the curb. This section would have open ditch drainage.

From FM 2004 to SH 288, the proposed typical section for SH 332 can be described as having the outer most lanes in each direction being 15-foot shared use lanes (which would accommodate bicycles), four 12-foot lanes (two lanes in each direction), 1-foot inside shoulders and a 30-foot wide raised median. The typical ROW for this section would vary from 180 to 225 feet in width. This segment of the build alternative would have five-foot sidewalks on both sides of the roadway. The sidewalks on the both sides of SH 332 would be offset one foot from the ROW. This section would have open ditch drainage.

Roadway improvements for the Build Alternative would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. In addition to roadway improvements the Build Alternative would improve drainage ditches that would be constructed along the north and south sides of the project.

The Build Alternative would fulfill the stated needs for the project and would satisfy the purpose of the project, which is to reduce traffic congestion, accommodate population growth, enhance mobility and improve safety and drainage along SH 332.

The estimated construction cost for the proposed project is 44 million dollars. At this time this project is not funded. However, it is anticipated that both federal and state funding would be involved.

4.2 New Location Drainage Channel Alternatives

Existing SH 332 does not drain adequately. The entire project area west of the diversion channel (just east of Buffalo Camp Bayou) is within the 100-year floodplain.

The City of Lake Jackson has expressed concerns about the lack of adequate drainage along SH 332. Further, at the September 29, 2015 Public Meeting, the residents also expressed concerns about the lack of adequate drainage along SH 332. Therefore, several alternatives were evaluated to provide adequate drainage along the proposed project.

The roadside ditches cannot provide adequate drainage for design flows independently. Much of the existing and proposed roadside ditches drain directly into Buffalo Camp Bayou which has been dammed south of SH 332 and north of the Brazos River hindering adequate drainage flow from SH 332. During the May/June 2016 flood event, the City of Lake Jackson observed Buffalo Camp Bayou overflowing to the west.

Given the current conditions in the project area, the only feasible way to adequately drain the proposed SH 332 project is with a new drainage channel directly from SH 332 to the Brazos River.

Four different locations were considered for a new location drainage channel. The drainage channel is being treated as an extension of the roadside ditches. The area between SH 332 and the Brazos River contains some environmentally sensitive wetland areas. The intent of this new drainage channel is to preserve the environmental sensitivity of the area and at the same time provide a relief to the area so as to drain SH 332 during frequent storm events. These four alternative locations (Alternatives 1 – 4) are shown on **Exhibit B in Appendix F**.

After a series of meetings with TxDOT personnel evaluating these four different location alternatives, discussed in the SH 332 Drainage Impact Analyses, Alternative 4 was selected as

the best alternative location that would limit impacts to the environmentally sensitive wetland areas while providing the most effective drainage.

Alternative 4 was then further refined into three different options for the actual design.

Option 1
Option 1 includes an open channel within a typical 90 foot wide ROW at an estimated cost of $702,449.

Option 2
Option 2 includes a reinforced concrete box (RCB) culvert that consists of one 12'x12' RCB at an estimated cost of $7,300,020.

Option 3
Option 3 includes a combination of an open channel and a 12'x12' RCB within a typical 120 foot wide ROW. Approximately 40% of the length between SH 332 and the Brazos River would be open channel and 60% would be the RCB at an estimated cost of $4,515,489.

Option 1 is recommended based on cost effectiveness between the three options.

Alternative 4, Option 1 is the preferred alternative for the new location drainage channel because it has limited impacts on the environmentally sensitive wetlands while providing the most effective drainage at the most effective cost.

Further refinements to the Alternative 4, Option 1 drainage channel were made to minimize impacts to the environmentally sensitive wetlands crossed by the drainage channel. A 10 foot wide maintenance berm and placement of culverts at three different locations would be included. The berm would prevent draining the adjacent wetlands outside of the drainage channel ROW. The placement of culverts at three different locations would allow water exchange between wetlands on both sides of the drainage channel.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

There were no other roadway alignment alternatives identified.

4.4 No Build Alternative

The No Build Alternative assumes no transportation improvements to SH 332. The No Build Alternative would not reduce traffic congestion, accommodate population growth, enhance mobility, or improve safety and drainage along SH 332. This alternative would not meet the need and purpose of the project.

5.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In support of this EA, the following technical reports were prepared:

- Air Quality Technical Report
- Purpose and Need Technical Report
- Public Meeting Summary Report
- Section 4(f) Technical Report
- Biological Evaluation Form

- Water Resources Technical Report
- Noise Technical Report
- Socioeconomic Impacts Technical Report
- Hazardous Materials Initial Site Assessment (ISA) Report
- Project Coordination Request for Historical Studies Project
- Historic Resources Survey Report (April 2004)
- Report for Historical Studies Survey (June 2017)
- Archeological Investigations Technical Report (January 2005)
- Archeological Investigations Technical Report Drainage Improvements (October 2005)
- Archeological Background Study (May 18, 2017)
- Intensive Archeological Survey Report (July 2017)

These technical reports are on file at TxDOT's Houston District Office.

5.1 Right-of-Way and Displacements

Approximately 70.4 acres of additional ROW would be required. It is estimated that the proposed project could result in six displacements: three businesses, two residences, and one utility (telephone) facility building. Replacement single-family housing with comparable home values are available within a 2-mile radius of the project area. Business displacements would potentially affect at least four or more employees. Affected businesses are small and single-owner or family-owned, employing relatively few employees. None of the businesses throughout the study area exhibit any unique needs which would preclude them from relocating in the area. The proposed project would also potentially impact a billboard and a flagpole which could potentially be relocated within the existing parcels.

TxDOT would ensure that the needs of all displaced residents, including any disabled, minority, or elderly persons, are considered and accommodated to the extent practicable. Any ROW acquisition would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Additionally, it is expected that these businesses would be able to find appropriate sites to relocate nearby due to the amount of commercial property available in the project vicinity. Therefore, economic impacts within the community associated with relocations and/or job losses are expected to be minimal.

There are no temporary or permanent easements required for the proposed project.

The No Build Alternative would not require any ROW acquisitions and would leave the existing surrounding area intact. No displacements or relocations would occur under the No Build Alternative.

5.2 Land Use

This portion of SH 332 passes through unincorporated areas of Brazoria County and the City of Lake Jackson. Existing land uses varies from undeveloped, to small business and residential, to a public park and golf course facility. Single-family homes are located to the north and south of SH 332. Wilderness Park and Wilderness Golf Course are located south of SH 332 and west of Buffalo Camp Bayou. The proposed project would not result in substantial land use impacts.

No land use impacts would occur under the No Build Alternative.

5.3 Farmlands

A Farmland Conversion Impact Rating for Corridor Type Projects (NRCS-CPA-106) was performed as part of the Biological Evaluation Form and is on file at TxDOT's Houston District Office.

The Farmland Protection Policy Act (FPPA) requires that federal agencies identify and take into account the adverse effects of their programs on the preservation of farmlands; consider alternative actions, as appropriate, that could lessen adverse effects; and ensure that the project is compatible with state and local programs and policies to protect farmlands (7 CFR Part 658). The proposed project would convert farmland subject to the FPPA to a nonagricultural, transportation use. The combined scores of the Relative Value of Farmland and the Corridor Assessment points on form NRCS-CPA-106 totaled 28 points. Scores of 59 points or less do not warrant further consideration for protection and no additional sites need to be evaluated. Form NRCS-CPA-106 can be found in **Appendix I**.

5.4 Utility Relocation

Phone and cable utilities exist along existing SH 332 and would likely require adjustment. Overhead electrical lines run along SH 332 on the south side from FM 521 to approximately CR 680A and along the north side from approximately CR 680A to Buffalo Camp Bayou. These overhead electrical lines would likely require adjustment. A gas transmission line crosses under SH 332 at the Wilderness Golf Course entrance about 2,400 feet west of Buffalo Camp Bayou. Other utilities such as water lines, sewer lines, gas lines, and other subterranean and aerial utilities that may exist along the project may also require adjustment.

It is reasonably foreseeable that utilities will have to be relocated as a result of this project. The impacts resulting from removal of any utilities from within existing highway right-of-way have been considered as part of the project impacts under each of the resource area subheadings within this environmental assessment. Additionally, if utilities will be re-located within highway right-of-way, then the impacts resulting from re-installation of the utilities within highway right-of-way has also been considered as part of the project impacts under each of the resource area subheadings within this environmental assessment. To the extent that the owner of any displaced utility determines to re-install the displaced utility at a location outside of highway right-of-way, such location will be determined by the owner of the utility subject to the rules and policies governing the utility relocation process.

There are no emergency facilities along the SH 332 corridor between FM 521 and SH 288. Emergency response time could potentially be negatively affected because the proposed raised median would limit turning movements along SH 332. Two of the purposes of the project are to reduce traffic congestion and enhance mobility in the project area. Emergency response times would therefore be positively affected because of reduced traffic congestion and enhanced mobility.

5.5 Bicycle and Pedestrian Facilities

Existing SH 332, within the construction limits does not have sidewalks. The project would include the construction of sidewalks on both sides of SH 332 for the entire length of the project.

Within the construction limits, bicyclists can utilize the existing outside shoulders on SH 332. The project would include 10-foot-wide outside shoulders from approximately 3,000 feet east of FM 521 to approximately 600 feet west of Buffalo Camp Bayou. These shoulders would

accommodate bicyclists. From approximately 600 feet west of Buffalo Camp Bayou to SH 288, the outside lane in each direction would be a 15-foot-wide shared use lane that would accommodate bicyclists. Bicyclists and pedestrians should not need to alter existing travel habits. The project would have a beneficial impact to cyclists and pedestrians and should reduce the travel times for these modes of transportation. The project should increase safety for these modes of transportation.

5.6 Community Impacts

A Socioeconomic Impacts Technical Report for the proposed project has been completed and is on file at TxDOT's Houston District Office.

Because SH 332 is an existing transportation corridor, the proposed project would not result in new or additional barriers between communities. Existing transportation/road crossings would be maintained. Direct adverse impacts to the character or cohesion of communities in the project vicinity are not expected. Additionally, the proposed project is intended to improve mobility along SH 332, which would benefit all members of the public using the roadway. The increased roadway capacity included as part of this project is expected to benefit residents adjacent to the roadway by reducing congestion, improving roadway efficiency, and providing greater access to employment centers, shopping, and the numerous recreational areas located within the vicinity of the project.

The project would result in two residential displacements and three businesses which could potentially affect four or more employees. Should the businesses choose to relocate around the area, it is anticipated that available properties could accommodate the needs of the displaced businesses. In addition to commercial and residential displacements, the proposed project would displace one utility facility building and one utility facility access road, one billboard, and a flagpole.

For the purpose of this analysis, an environmental justice population is present when the total minority population percentage equals or exceeds 50 percent. The project area is primarily populated by Non-Hispanic White residents with populations of Hispanic or Latino, Non-Hispanic Black/African-American, American Indian/Alaska Native, and Asian residents throughout the project length. Based on the 2010 U.S. Census, the average racial make-up of the four block groups is approximately 67.16 percent white and 32.85 percent minority population. Block Group 1 of Census Tract 6633 contains a total minority population greater than or equal to 50 percent.

Additional ROW for proposed upgrades from project area blocks that contain a total minority population greater than or equal to 50 percent is required from Census Block 4021 of Block Group 4 within Census Tract 6631. The proposed ROW would result in the full displacement of three structures located within three individual parcels of Census Block 4021. However, the total population of Census Block 4021 is relatively low at 16 residents, so although the percentage of minorities is high, the total number of minorities is 10 people in comparison to a total minority population of 248 people within the project area. Therefore, disproportionate, displacement or relocation impacts to Environmental Justice (EJ) populations are not anticipated. TxDOT would ensure that the needs of all displaced residents, including any disabled, minority, or elderly persons, are considered and accommodated to the extent practicable. The ROW acquisition process would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

The average racial make-up of the 12 populated census blocks within the project area is approximately 79.57 percent white and 20.43 percent minority population. All but one of the 12 populated blocks within the project area are predominantly white, with Census Block 4021 being

approximately 37.50 percent white and 62.50 percent minority population (this includes approximately 31.25 percent Hispanic or Latino and 31.25 percent Black/African American).

A low-income population analysis was conducted and is recorded in the Socioeconomic Impacts Technical Report that is on file at TxDOT's Houston District. The data presented below differs from the data presented in the Technical Report as an updated analysis was performed with the 2013-2017 American Community Survey (ACS) at the Census Tract (CT) level. The 2019 poverty level in the 48 contiguous states and District of Columbia is $12,490 for an individual and $25,750 for a household of four (U.S. Department of Health and Human Services, 2019). All of the CTs for the project area have a median household income above the 2019 poverty level. The Median household income across all CTs is approximately $78,343, which is $52,593 above the national poverty level for a household of four. In the previous analysis, Block Group 1 of Census Tract 6633 had a median household income below the poverty level at $24,435. However, no additional ROW would be required from Census Block Group 1 of Census Tract 6633.

Although EJ populations are present in the project area, the proposed improvements to SH 332 would not result in disproportionately high or adverse impacts to these populations and are not anticipated to substantially alter the overall character or cohesion of the adjacent communities. While there are three displacements within Census Block 4021, which contains a total minority population of 62.75 percent, these impacts are not considered disproportionately high or adverse to minority populations, because Census Block 4021 does not contain a majority of the displacements, and impacts occur throughout the project area. Disproportionately adverse direct or indirect impacts to community cohesion or minority, LEP, or low income populations as a result of this project are not anticipated. As such, cumulative impacts associated with the proposed project are expected to be minor to insignificant. Any subsequent changes in design and additional information regarding proposed improvements may require reassessment of the preceding analysis.

Executive Order (EO) 13166, "Improving Access to Services for Persons with Limited English Proficiency," (LEP) requires agencies to examine the services they provide, identify any needs for services to those with LEP, and develop and implement a system to provide those services so that LEP persons can have meaningful access to them. This EO requires federal agencies to work to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally assisted programs and activities may violate the discrimination prohibition under Title VI of the Civil Rights Act of 1964.

A "Persons with Limited English Proficiency" analysis was conducted and is recorded in the Socioeconomic Impacts Technical Report that is on file at TxDOT's Houston District. The data presented below differs from the data presented in the Technical Report as an updated analysis was performed with the 2013-2017 American Community Survey (ACS) at the Census Tract level. Four Census Tracts (CTs) are present in the project area. Based on the 2013-2017 ACS, there are approximately 1,530 Persons with Limited English Proficiency (LEP), approximately 11% of the total population within the CTs. While no Census Tract has a majority population of LEP persons, there are approximately 9.66% of Spanish-speaking LEP persons, 0.1% of Indo-European LEP persons, 1.27% of Asian and Pacific Islander LEP persons within the project area. There were no LEP populations speaking 'other languages' identified within the project area. No indicators of LEP populations such as signage in languages other than English were observed during an August 2015 windshield survey.

In order to comply with EO 13166, TxDOT would provide opportunities for citizens to request language interpreters (e.g. Spanish and/or Asian and Pacific Island languages). TxDOT would continue to comply with EO 13166 by offering to meet the needs of persons requiring special communication or accommodations in all public involvement activities and notices. Therefore, the requirements of EO 13166 would be met. Future public involvement/outreach would continue to be conducted in a manner such that all interested parties would be given an opportunity to provide both verbal and written comments concerning the proposed project. This may include but is not limited to: letters sent to adjacent property owners to notify them of the proposed project and invite them to public meetings, notices of public meetings, and public meeting handouts and comments provided in English and a second language if necessary.

5.7 Visual and Aesthetic Impacts

Visual and aesthetic resources within the project area were identified through field survey. The edge of the existing ROW from FM 521 to Buffalo Camp Bayou is mostly tree lined which accounts for most of the visual and aesthetic resources within the project area. SH 332 from Buffalo Camp Bayou to SH 288 is dominated by commercial properties, and individual properties of these types occur occasionally throughout the entire corridor.

Temporary impacts on the visual character of the surrounding environment related to construction activities include those related to vehicle and equipment activity, construction staging, stockpiling of excavated material, temporary signage, and traffic congestion. Developed and naturally vegetated areas within the existing and proposed ROW may be cleared for the construction of the roadway lanes, and topography would be modified to fill slopes. Construction activities would result in increased levels of dust, indirect transfer of dirt between locations, and localized glare from lighting sources assembled to ensure the safety of construction crews and vehicle drivers. Staging areas would be located away from visually sensitive areas where practicable and where land is available. Construction activities would be primarily limited to daylight hours to eliminate the need to use high-wattage lighting sources to operate during nighttime hours. Revegetation would take place in areas disturbed during construction.

The construction of the proposed project would permanently change views and the visual quality of the corridor due to an expanded roadway width and an adjusted alignment. Removal of vegetation in the form of trees and hedges along the new ROW would result in a reduction of vegetative screening. Additional light impacts may result from new illumination.

Construction of the proposed roadway would result in some homes and businesses being located closer to the roadway.

New bridges over waterways would be constructed at the same grade as the existing roadway; as such, they are not considered elevated structures. At these crossings their visual impact would be very similar to the existing structures.

Overall, the proposed SH 332 project would not have substantial impacts on visual quality and aesthetics.

5.8 Cultural Resources

Cultural resources include structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to

these projects. Compliance with these laws often requires consultation with the Texas Historical Commission (THC)/Texas State Historic Preservation Officer (SHPO) and/or federally-recognized tribes to determine the project's effects on cultural resources. Review and coordination of this project followed approved procedures for compliance with federal and state laws. Evaluation of impacts to cultural resources has been conducted in accordance with the Programmatic Agreement among FHWA, TxDOT, SHPO, and the Advisory Council on Historic Preservation regarding the Implementation of Transportation Undertakings.

5.8.1 Archeology

A review of the Texas Archeological Sites Atlas maintained by the THC and the Texas Archeological Research Laboratory was conducted in order to identify archeological sites, Recorded Texas Historic Landmarks (RTHLs), properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks, cemeteries, or other cultural resources that may have been previously recorded in the Area of Potential Effects (APE), as well as previous surveys undertaken in the area. In addition, a review of the Houston Potential Archeological Liability Map was undertaken to determine archeological probability in the APE.

Archeological surveys were previously conducted under two previous THC permits, TAC 3347 and TAC 3771. No archeological sites eligible for listing in the NRHP were identified and THC issued final archeological clearance for the project on September 16, 2005.

Since the time of the September 2005 clearance, design changes have altered the alignment of the proposed road expansion resulting in portions of the roadway within new proposed ROW that have not been surveyed and coordination with the appropriate regulatory agency. As a result another Archeological Background Study was conducted in May 2017. It was recommended that an archeological survey is warranted for new ROW portions of the APE that were not previously surveyed due to the geologic and soil conditions within the APE, the presence of documented archeological sites nearby, and PALM recommendations. An archeological survey was performed in June 2017. This survey focused on 10.88 acres of the total 15.75 acres of proposed ROW not previously surveyed in 2004 and 2005, where Right-of-Entry (ROE) was granted. No archeological sites were identified within these portions of the APE, and no further work is recommended at these locations. Archeological investigators also assessed the remaining approximately 4.87 acres of the APE that were inaccessible due to lack of ROE and determined that past and present subsurface investigation in the vicinity of these parcels (including 15 trenches and approximately 62 shovel tests and nine auger tests) as well as lack of indication of historic-aged structures at these locations based on maps and aerial photo research, provide adequate data to conclude that all of these inaccessible parcels possess low probability for the presence of intact archeological deposits. Based on this information, the archeologists recommended no further work for these locations and construction should be allowed to proceed as planned. TxDOT agreed with these recommendations and SHPO concurred on September 1, 2017. The survey and results are documented in the Intensive Archeological Survey Report dated July 2017. Coordination with SHPO can be seen in **Section 6.5** and **Appendix G**.

5.8.2 Historic Properties

A search of the Texas Historic Sites Atlas (Atlas) maintained by the THC was conducted in order to identify properties or districts listed on the NRHP, National Historic Landmarks (NHLs), RTHLs, Official Texas History Markers, cemeteries, or other cultural resources that may have been previously recorded in the APE, defined as all parcels intersected by a 150-foot buffer from the existing or proposed ROW. According to the THC's Atlas, there are no properties listed on the NRHP or any standing structures designated as State Antiquities Landmarks, NHLs, or buildings

designated as Recorded Texas Historic Landmarks located within the study area or the APE. There is one Official Texas Historical Marker within the APE of the proposed project.

Two historic-age bridges and one historic marker were identified. The SH 332 over Buffalo Camp Bayou bridge (National Bridge Inventory [NBI] #120200152401004) is an eight span concrete bridge constructed in 1961. The SH 332 over Dow Fresh Water Canal bridge (NBI #120200152401005) is a four span concrete bridge constructed in 1961. Both bridges were previously determined not NRHP-eligible as part of the Historic Bridge Inventory and Evaluation of 1945-1965 Bridges in Texas. The Historic Marker is an Official Texas Historical Marker commemorating Joseph H. Hawkins and it is also within the APE. See **Section 6.5** and **Appendix G** for further information regarding historic resources coordination.

A historic resources survey was previously conducted for this project in April 2004 and concluded in the determination that no structures or properties were eligible for listing in the NRHP and THC/SHPO concurred with this determination on August 3, 2004. Since that time, TxDOT has completed three Section 106 coordination efforts for the project (in August 2004, January 2006, and January 2009). Due to the passage of time since the previous coordination efforts, original survey, and possible discrepancies in the original survey, additional historic resource studies and survey was performed in April 2017 to update the 2004 survey. This survey included properties built between 1965 and 1975 and any pre-1965 properties not included in the 2004 survey that are located within the proposed project's current APE, which is 150 feet from the existing and proposed ROW, whichever is greater.

The historic resource study and survey performed in April 2017 are documented in a technical report titled "Report for Historical Studies Survey" dated June 2017. The historic resource survey identified seven resources at five locations constructed in or prior to 1976 within the APE. The previous survey in April 2004 did not inventory or evaluate these seven resources. None of these seven resources were determined eligible for listing in the NRHP and it has been recommended that no further work be completed.

5.9 Protected Lands

A Section 4(f) Technical Report was completed and is included in **Appendix H**.

5.9.1 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 states that the FHWA may not approve the use of land from a significant publicly owned park, recreation area, wildlife and waterfowl refuge, or historic site. However, if a determination is made that there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from such use, then the taking may be approved. A Section 4(f) can be processed as a de minimis, programmatic or individual evaluation.

Two Section 4(f) resources have been identified within the SH 332 project limits: Wilderness Golf Course and Wilderness Park. The resources are described in more detail in the following sections and shown in **Appendix F**.

<u>Wilderness Golf Course</u>

Wilderness Golf Course is owned and operated by the City of Lake Jackson and is located on the south side of SH 332 west of Buffalo Camp Bayou.

Wilderness Park

Wilderness Park is also owned and operated by the City of Lake Jackson and is located on the south side of SH 332 west of Buffalo Camp Bayou. Facilities for picnicking, boating (boat ramp), parking lot and a two mile long hiking trail are available. The park property extends south of SH 332 along the west side of Buffalo Camp Bayou for approximately 1.1 miles. The park property then extends west along the north side of the Brazos River for approximately 2.2 miles; however, there is no maintained public access in this area.

Potential Use of Section 4(f) Resources

The proposed project would require approximately 1.2 acres of ROW from the Wilderness Golf Course entrance on the south side of SH 332 (see **Exhibit D in Appendix F**). No ROW would be required from the main parking lot or the actual golf course. On the ROW to be acquired, there is currently the driveway for the golf course. The driveway for the golf course would be shortened if the proposed project is constructed. Access to and from the golf course would be maintained throughout construction of the proposed project. The ROW required for the road has been minimized so as to not disrupt the activities of the golf course or access to the golf course.

The proposed project would also require approximately 1.8 acres of ROW for the proposed new drainage channel from Wilderness Park property (see **Exhibit D in Appendix F**). The ROW acquired for the drainage channel would not impact the public park facility picnic tables, parking lot or boat ramp located in the southwest corner of SH 332 and Buffalo Camp Bayou. Additionally, the drainage channel would not impact the two mile hiking trail maintained by the City of Lake Jackson. Access to and from Wilderness Park would be maintained throughout construction of the proposed project.

To further minimize harm to Wilderness Park, TxDOT would provide a crossing (10-foot wide minimum) across the outfall channel, adjacent to the northern park property line (away from the Brazos River bank) to provide access to the western portion of the park property for the City of Lake Jackson.

Survey determined that Wilderness Park and Wilderness Golf Course on which the use would take place has significance under the requirements of 23 CFR 774.3(b). In order to qualify for a Section 4 (f) *de minimis*, it was established that the project activities would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection.

The function of Wilderness Park and Wilderness Golf Course would not be impaired, and its function would not cease. Nor would the project impair the function of the property as a whole. Therefore, these minor changes would have no adverse effect. The property would still possess its significance after the project is complete.

Therefore, TxDOT determined that the proposed project activities meet the requirements of a *de minimis* finding under Section 4(f).

Consultation with the City of Lake Jackson (the officials with jurisdiction) has occurred. A Notification of Intent to Pursue *De Minimis* to Section 4(f) (23 CFR 774.3(b)) for Wilderness Golf Course and Wilderness Park was sent to the City of Lake Jackson on October 12, 2017. On November 6, 2017, Lack Jackson City Manager signed the Notification of Intent concurring with the No Adverse Effect Determination of De Minimis Impact under Section 4(f) Guidelines (see **Appendix H**). Section 4(f) *De Minimis* Checklists have also been completed for both Wilderness Golf Couse and Wilderness Park (see **Appendix H**).

5.9.2 Land and Water Conservation Fund (LWCF) Section 6(f)

LCWF Section 6(f) protects parks and recreation areas improved by LCWF funds. Neither Wilderness Golf Course nor Wilderness Park are Section 6(f) properties. There are no Section 6(f) properties present in the project area.

5.9.3 Parks and Wildlife Code (PWC) Chapter 26

Under PWC Chapter 26, state law prohibits the approval of any project that requires the use or taking of any public land designated and used prior to the arrangement of the project as a park, recreation area, scientific area, wildlife refuge, or historic site, unless it has been determined that: (1) there is no feasible and prudent alternative to the use or taking of such land; and (2) the project includes all reasonable planning to minimize harm to the land resulting from the use or taking. Chapter 26 applies to both Wilderness Golf Course and Wilderness Park. A Public Hearing was held in accordance with both TxDOT requirements and PWC Chapter 26 requirements on September 26, 2017.

There is no feasible and prudent alternative to the 1.8 acre take from Wilderness Park for the proposed drainage channel because the proposed drainage channel is located where ground elevations allow for the most effective conveyance of peak drainage flows from SH 332 to the Brazos River. Also, this proposed drainage channel location avoids residential and commercial displacements along the south side of SH 332. Reasonable planning to minimize harm to the parks includes provision of an approximate 10 foot wide crossing of the drainage channel that could be accessed by maintenance vehicles and pedestrians to cross the drainage channel to get from one side of the park to the other.

There is no feasible and prudent alternative to the 1.2 acre take from the Wilderness Golf Course entrance because taking additional ROW from the other (north) side of SH 332 would cause residential displacements. The only effect to the golf course from the 1.2 acre take is the driveway (entrance) would be shortened. The 1.2 acre take would not affect the actual golf course or parking lot. Reasonable planning to minimize harm to the golf course included reducing the amount of additional ROW as much as practicable.

5.10 Water Resources

5.10.1 Clean Water Act Section 404

A Water Resources Technical Report has been completed and is on file with TxDOT's Houston District Office. The results of wetlands determinations, delineations, and permitting are documented in the technical report. The U.S. Army Corps of Engineers (USACE) regulates impacts to jurisdictional waters, including waters of the U.S. and wetlands, under Section 404 of the Clean Water Act (CWA).

Wetland specialists did not delineate wetlands within roadside ditches that were clearly excavated through uplands. Wetlands within the roadside ditches in locations where the wetlands appeared to be part of a natural wetland or stream system were delineated. Nine water crossings were identified within the existing and proposed ROW during field investigations performed in January 2016, including Buffalo Camp Bayou and the Brazos River. These nine waters are identified in **Table 1** and potential impacts are shown in **Table 2**. These potential waters of the U.S. are shown in **Exhibit F-1 through F-9** in **Appendix F**.

Table 1: Potential Waters of the U.S. Present in the Project Area

Crossing No.	Water Feature ID	Water Feature Type[1]	Area within Project Area (acres)
Crossing 1	S-1	PS (manmade)	0.16
Crossing 2	S-2 (Buffalo Camp Bayou)	PS	0.83
	W-1	PEM	0.02
Crossing 3	S-3	IS (manmade)	0.06
	W-2	PFO	0.10
	W-3	PEM	0.51
	W-4	PFO	0.76
Crossing 4	W-5	PFO	0.03
	W-6	PEM	0.01
Crossing 5	W-7	PFO	0.46
	W-8	PEM	0.30
Crossing 6	W-9	PEM	0.01
Crossing 7	W-10	PFO	0.05
Crossing 8	W-11	PFO	2.10
Crossing 9	S-4 (Brazos River)	PS	0.37

[1] PS = Perennial stream; IS = Intermittent Stream; PFO = Palustrine forested wetland; PEM = Palustrine emergent wetland

Table 2: Potential Impacts to Waters of the U.S.

Crossing No.	Anticipated Permanent Loss		NWP#	PCN (Y/N)	IP (Y/N)
	Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)			
Crossing 1	< 0.1	0	14	N	-
Crossing 2	< 0.1	0.02	14	Y	-
Crossing 3	0.06	1.37	-	-	Y
Crossing 4	0	0.04	14	Y	-
Crossing 5	0	0.76	-	-	Y
Crossing 6	0	0.01	14	Y	-
Crossing 7	0	0.05	14 or 43	Y	-
Crossing 8	0	2.10	-	-	Y
Crossing 9	< 0.1	0	7, 14, or 43*	Y	-

*Assumes the proposed drainage channel outfall at Crossing 9 would involve a discharge of fill material below the OHWM of the Brazos River
NWP = Nationwide Permit; PCN = Pre-construction Notification; IP = Individual Permit

Based on the current design, all water features within the project area are expected to be permanently impacted by clearing, grading, excavation, and filling, except at Crossings 1 and 2, where bridges would largely span the streams, and at Crossing 9, where proposed work is limited to construction of an outfall structure at the Brazos River.

Proposed work at Crossings 3, 5, and 8 is expected to require a Section 404 Individual Permit (IP) because of the loss of waters of the U.S. at each of these crossings would exceed 0.5 acre.

Proposed work at Crossings 1, 2, 4, 6, 7, and 9 qualify for authorization under Nationwide Permit (NWP) 14 Linear Transportation Projects. A PCN would be required for all of these crossings except Crossing 1. However, since these six crossings are dependent on the three crossings requiring an IP, they cannot be covered under a NWP per 33 CFR 330.6(d). Therefore, it is anticipated that an IP would be required for the entire project.

This project will involve regulated activity in jurisdictional waters and therefore will require authorization under Section 404. The following table shows the waters that are anticipated to be jurisdictional waters in which regulated activity is anticipated to take place. It also indicates whether the impacts are anticipated to be authorized under Section 404 by a non-reporting nationwide permit (i.e., no pre-construction notification required), or if it is anticipated that a nationwide permit with pre-construction notification, individual permit, letter of permission, or regional general permit will be required.

Table 3: Jurisdictional Waters in Which Regulated Activity is Anticipated to Take Place

Name of water body	Type of water body	Location of water body	Covered by non-reporting NWP under Section 404?	NWP with PCN, IP, letter of permission, or regional general permit required under Section 404?
Crossing 1	Perennial Stream	Exhibit F-1 in Appendix F	N	N
Crossing 2	Perennial Stream/PFO[1] Wetland	Exhibit F-2 in Appendix F	Y	N
Crossing 3	Intermittent Stream/PFO & PEM[2] Wetlands	Exhibit F-3 in Appendix F	N	Y
Crossing 4	PFO & PEM Wetlands	Exhibit F-4 in Appendix F	Y	N
Crossing 5	PFO & PEM Wetlands	Exhibit F-5 in Appendix F	N	Y
Crossing 6	PEM Wetland	Exhibit F-6 in Appendix F	Y	N
Crossing 7	PFO Wetland	Exhibit F-7 in Appendix F	Y	N
Crossing 8	PFO Wetland	Exhibit F-8 in Appendix F	N	Y
Brazos River (Crossing 9)	Perennial Stream	Exhibit F-9 in Appendix F	Y	N

[1] PFO = Palustrine forested wetland; [2]PEM = Palustrine emergent wetland

The IP Application and the Preliminary Jurisdictional Determination (PJD) form have been submitted to USACE and are currently awaiting approval for Public Notice. Refer to **Appendix G** for emails with USACE. Mitigation would be required and would take place at the Coastal Bottomlands Mitigation Bank. Credit use will be determined by the USACE.

This project will require an IP under Section 404. Therefore, this project must comply with EPA's Section 404(b)(1) Guidelines, which are codified at 40 CFR Part 230. These guidelines allow the discharge of dredged or fill material only if there is no practicable alternative that would have less

adverse effects on the aquatic ecosystem. An alternative is practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The Guidelines allow for rejection of alternatives that may be practicable, but that have other significant adverse environmental consequences. Within the existing and proposed ROW, 15 water features were delineated at nine water crossings. All are expected to be considered waters of the U.S. Due to the location of existing SH 332 and the project area being within the Brazos River Floodplain, there were no practicable alternatives.

Furthermore, there were four alternative locations for the proposed drainage channel. These alternatives are discussed in Section 4.2 and can be seen on **Exhibit B** in **Appendix F**. Due to drainage surveys, Alternative 4 was selected as the best alternative location that would limit impacts to the environmentally sensitive wetland areas while providing the most effective drainage. A 10 foot wide maintenance berm and placement of culverts at three different locations would allow water exchange between wetlands on both sides and would therefore minimize the impacts to the wetlands. No practicable alternatives to permanent fill in wetlands were identified.

The No Build Alternative would involve no additional construction and would not require any permits. The No Build Alternative would not reduce traffic congestion, accommodate population growth, enhance mobility, or improve safety and drainage along SH 332. This alternative would not meet the need and purpose of the project.

5.10.2 Clean Water Act Section 401

The design and construction of the proposed improvements would include construction and post-construction TCEQ 401 Water Quality Best Management Practices (BMP's) to manage storm water runoff and control sediments.

It is anticipated that an IP would be required for the proposed project and over 3 acres of waters of the U.S. would be impacted. For a project that will use a NWP under Section 404 or Section 10, regardless of whether the NWP is non-reporting (i.e., assumed) or reporting (i.e., requires submittal of a PCN), TxDOT complies with Section 401 of the Clean Water Act by implementing TCEQ's conditions for NWPs. For projects that require authorization under Section 404 or Section 10 beyond a NWP, TxDOT complies with Section 401 of the Clean Water Act by including a Tier I or Tier II checklist (depending upon the amount of disturbance/impact) in the individual permit, letter of permission, or regional general permit application that is submitted to the USACE, and then complying with the conditions of the Tier I or Tier II checklist.

Subsurface water would not be required for this project; therefore, no adverse effects to groundwater are expected to occur. Rainfall along SH 332 currently drains into Buffalo Camp Bayou and then into the Brazos River. The proposed drainage outfall channel would alter drainage by draining most of SH 332 and outfalling into the Brazos River upstream of the Buffalo Camp Bayou outfall. The proposed project is not expected to contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution systems. No long-term water quality impacts are expected as a result of the proposed project.

5.10.3 Executive Order 11990: Wetlands

EO 11990 prohibits new construction in wetlands unless there is no practicable alternative to such construction and the project includes all practicable measures to minimize harm to wetlands.

Within the existing and proposed ROW, 15 water features were delineated at nine water crossings. All are expected to be considered waters of the U.S. Due to the location of existing SH

332 and the project area being within the Brazos River Floodplain, there were no practicable alternatives.

Furthermore, there were four alternative locations for the proposed drainage channel. These alternatives are discussed in Section 4.2 and can be seen on **Exhibit B** in **Appendix F**. Due to drainage surveys, Alternative 4 was selected as the best alternative location that would limit impacts to the environmentally sensitive wetland areas while providing the most effective drainage. A 10 foot wide maintenance berm and placement of culverts at three different locations would allow water exchange between wetlands on both sides and would therefore minimize the impacts to the wetlands.

Alternatives were reviewed as required by Executive Order 11990 on Wetlands, and no practicable alternatives to permanent fill in wetlands were identified.

5.10.4 Rivers and Harbors Act

The proposed project includes the construction of a new outfall structure at the Brazos River, which is a navigable water of the U.S. under Sections 9 and 10 of the River and Harbors Act. No Section 9 Bridge Permit would be required since the proposed project would not entail construction of a bridge over the Brazos River or other navigable waterway.

This project will involve regulated activity in a navigable waterway and therefore will require authorization under Section 10 of the Rivers and Harbors Act. The following table shows the waters that are anticipated to be navigable waters in which regulated activity is anticipated to take place. It also indicates whether the impacts are anticipated to be authorized under Section 10 by a non-reporting nationwide permit (i.e., no pre-construction notification required), or if it is anticipated that a nationwide permit with pre-construction notification, IP, letter of permission, or regional general permit will be required.

Table 4: Navigable Waters within the Study Area

Name of water body (Crossing No.)	Type of water body	Location of water body	Covered by non-reporting NWP under Section 10?	NWP with PCN, IP, letter of permission, or regional general permit required under Section 10?
Brazos River (Crossing 9)	Perennial Stream	Exhibit F-9 in Appendix F	N	Y

The IP Application and the PJD form have been submitted to USACE and are currently awaiting approval for Public Notice. Refer to **Appendix G** for emails with USACE.

5.10.5 Clean Water Act Section 303(d)

The Texas Surface Water Quality Standards (TSWQS), which apply to all surface water features in the State, are promulgated in Title 30, Chapter 307, of the Texas Administrative Code (TAC). These standards are approved by the EPA in accordance with Section 303C of the CWA and updated every three years to accommodate new developments or updated information. In the State of Texas, water quality inventory information provided by the TSWQS is assimilated and grouped by river basin. To track water quality and compliance with the standards, the TCEQ's Surface Water Quality Monitoring Program further divides the State's larger surface water features in those river basins into defined (classified) segments and assesses them according to the criteria specified in the TSWQS. Smaller features, although not defined as segments, are likewise monitored, but sufficient data are not available to develop the more conventional criteria.

Formerly called the "Texas Water Quality Inventory and 303(d) List," the 2018 “Texas Integrated Report for CWA Sections 305(b) and 303(d)” or known simply as the “Integrated Report”, evaluates the quality of surface waters in Texas, and provides resource managers with a tool for making informed decisions when directing agency programs.

Runoff from this project is within the watershed for and would discharge directly into Segment 1109 of Oyster Creek Tidal, a Section 303(d) listed threatened or impaired water for bacteria. This information is presented in the table below. The 2018 Texas Integrated Report of Surface Water Quality for Clean Water Act, Sections 305(b) and 303(d) was utilized in this assessment. The Draft 2020 Report was also referenced.

Table 5: Impaired Waters Within the Watershed and the Project would Discharge Directly into

Watershed	Segment Name	Segment number	Assessment unit number
Lower Brazos	Oyster Creek Tidal	1109	1109_01

To date, TCEQ has not identified (through either a total maximum daily load (TMDL) or the review of projects under the TCEQ MOU) a need to implement control measures beyond those required by the construction general permit (CGP) on road construction projects. Therefore, compliance with the project’s CGP, along with coordination under the TCEQ MOU for certain transportation projects, collectively meets the need to address impaired waters during the environmental review process. As required by the CGP, the project and associated activities will be implemented, operated, and maintained using best management practices to control the discharge of pollutants from the project site.

The No Build Alternative would involve no additional construction activities and would not impact water quality.

5.10.6 Clean Water Act Section 402

Since TPDES Construction General Permit (CGP) authorization and compliance (and the associated documentation) occur outside of the environmental clearance process, compliance is ensured by the policies and procedures that govern the design and construction phases of the project. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a storm water pollution prevention plan (SWP3) be included in the plans of all projects that disturb one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (notice of intent or site notice) be completed, posted, and submitted, when required by the CGP, to TCEQ and the municipal separate storm sewer system (MS4) operator. It also requires that projects be inspected to ensure compliance with the CGP.

The PS&E Preparation Manual requires that all projects include Standard Specification Item 506 (Temporary Erosion, Sedimentation, and Environmental Controls), and the “Required Specification Checklists” require Special Provision 506 on all projects that need authorization under the CGP. These documents require the project contractor to comply with the CGP and SWP3, and to complete the appropriate authorization documents.

This project is located within the boundaries of a TxDOT, Lake Jackson, and Brazoria County Storm Water Quality Coalition regulated Municipal Separate Storm Sewer System (MS4) and would include five or more acres of earth disturbance. TxDOT would comply with all applicable MS4 requirements and the TCEQ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be prepared and implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required.

The No Build Alternative would involve no additional construction activities and would not require a TPDES permit.

5.10.7 Floodplains

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps for Brazoria County, the entire project area west of the diversion channel (just east of Buffalo Camp Bayou) is located within the FEMA designated 100-year floodplain. A floodplain map for the project area is included in **Appendix F**. The hydraulic design for this project would be in accordance with current FHWA and TxDOT design policies. The facility would permit the conveyance of the 100-year flood, inundation of the roadway being acceptable, without causing significant damage to the facility, stream, or other property. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local Floodplain Administrator will be required.

This project is subject to and will comply with federal Executive Order 11988 on Floodplain Management. The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department's Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design Manual ensures that this project will not result in a "significant encroachment" as defined by FHWA's rules implementing Executive Order 11988 at 23 CFR 650.105(q).

The No Build Alternative would not result in further encroachment on the floodplain.

5.10.8 Wild and Scenic Rivers

This project would not involve work near any designated Wild and Scenic River; therefore, no impacts would occur.

5.10.9 Coastal Barrier Resources

The Coastal Barrier Resources Act (CBRA) established the Coastal Barrier Resources System to protect a defined set of geographic units along the coast of the U.S.

This project is not located within a designated CBRA map unit. The CBRA does not apply. Coordination with the USFWS is not required.

5.10.10 Coastal Zone Management

This project is located in Brazoria County, which is a coastal county, and is within the Texas Coastal Management Program (Texas CMP) boundary. TxDOT reviewed this proposed action for consistency with the Texas CMP goals and policies in accordance with the regulations of the Coastal Coordination Advisory Council and determined that the proposed action is consistent with the applicable CMP goals and policies (31 TAC 501.31(a)(1)).

5.10.11 Edwards Aquifer

This project is located within Brazoria County and would not be constructed over the recharge, contributing, or transition zones of the Edwards Aquifer. The TCEQ Edwards Aquifer Rules do not apply.

5.10.12 International Boundary and Water Commission

This project does not cross or encroach upon the floodplains of the U.S. International Boundary and Water Commission (USIBWC) flood control projects or ROW; therefore, a license or permit from the USIBWC is not needed.

5.10.13 Drinking Water Systems

A total of 16 water supply wells were identified within the project area, 9 of which have been plugged. These water wells consist of one public supply well, one unused well, three plugged monitor wells, and eleven domestic water wells. Based on field investigations, no water wells are known to occur within the proposed ROW.

In accordance with TxDOT's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (Item 103, Disposal of Wells), any drinking water wells would need to be properly removed and disposed of during construction of the project.

5.11 Biological Resources

A Biological Evaluation Form has been completed for the proposed project and is on file at TxDOT's Houston District Office. The results for vegetation, wildlife, and threatened and endangered species are summarized below.

5.11.1 Texas Parks and Wildlife Coordination

The proposed project would disturb habitat that exceeds the amount indicated in the *Threshold Programmatic Agreement* between TxDOT and TPWD (effective September 1, 2013), therefore, coordination with TPWD is required and was completed on June 23, 2017 (**Appendix G**).

5.11.2 Impacts to Vegetation

A TPWD Tier 1 Site Assessment has been completed for the proposed project and is included in the Biological Evaluation Form mentioned above. The proposed project would exceed the impact threshold in the Threshold Table Programmatic Agreement between TxDOT and TPWD for Riparian MOU Vegetation. Therefore, early coordination with TPWD is required and was completed on June 23, 2017 (**Appendix G**).

The project area is located within the Gulf Coast Prairies and Marshes Ecoregion (TPWD 2011). The footprint of the proposed new ROW was overlaid on Ecological Mapping Systems of Texas vegetation type maps.

Special Habitat Features – Special habitat features can include bottomland hardwoods, caves, cliffs and bluffs, native prairies, seeps or springs, snags or groups of snags, existing bridges with known observed bird or bat colonies, rookeries, and prairie dog towns. The project is anticipated to impact Columbia Bottomland Hardwood Forests and Woodlands. There would be a total of 61.11 acres of permanent impact to the Columbia Bottomland Riparian MOU Vegetation, 2.16 acres from Columbia Bottomlands: Live Oak Forest and Woodland, 4.03 acres from Columbia Bottomlands: Mixed Evergreen/Hardwood Forest and Woodland, and 54.92 acres from Columbia Bottomlands: Hardwood Forest and Woodland. These exceed the impact thresholds indicated in the Threshold Table Programmatic Agreement between TxDOT and TPWD for Riparian

Vegetation. TPWD coordination is required and has been completed. This coordination can be seen in **Appendix G**.

Unusual Vegetation Features – Unusual vegetation features can include unmaintained vegetation, fencerow vegetation, riparian vegetation, trees that are considered historically significant, ecologically significant, or locally important, and unusual stands or islands of vegetation. Approximately 61.11 acres of riparian vegetation is found within the proposed new ROW for the project.

5.11.3 Executive Order 13112 on Invasive Species

This project is subject to and will comply with federal EO 13112 on Invasive Species. The department implements this EO on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

Re-vegetation of disturbed areas would be in compliance with EO 13112 on Invasive Species. Regionally native and non-invasive plants would be used to the extent practicable. If additional landscaping activities beyond re-seeding are proposed, they would be developed during final design.

5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

This project is subject to and will comply with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping, effective April 26, 1994. The department implements this Executive Memorandum on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

Disturbed areas would be re-vegetated according to TxDOT's standard practices for rural areas, which to the extent practicable, is in compliance with Executive Memorandum on Beneficial Landscaping.

5.11.5 Impacts to Wildlife

The proposed project is located within the Texan Biotic Provinces (Blair, 1950).

The proposed project would comply with all federal environmental laws including the (1) Migratory Bird Treaty Act (MBTA), (2) the Fish and Wildlife Coordination Act, (3) the Bald and Golden Eagle Protection Act of 2007, (4) the Magnuson-Stevens Fishery Conservation Management Act, and (5) the Marine Mammal Protection Act.

Wildlife located within the vicinity of the project area may include those common species normally found in rural areas. The species for this area may include squirrels, rabbits, raccoons, migratory songbirds, and various rodents. Other species could include opossums, frogs, lizards, and snakes. Any disturbance beyond the normal conditions of the study area is expected to be limited to the immediate vicinity of construction of the proposed project.

Additionally, the proposed project contains potential habitat for three state listed threatened species and nine Species of Greatest Conservation Need (SGCNs). These species are discussed further in Section 5.11.11 Threatened and Endangered Species.

5.11.6 Migratory Bird Protections

The MBTA states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole without a federal permit issued in accordance within the Act's policies and regulations.

This project will comply with applicable provisions of the Migratory Bird Treaty Act (MBTA) and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federal or state approved options. In addition, it is the department's policy to, where appropriate and practicable:

- Use measures to prevent or discourage birds from building nests on man-made structures within portions of the project area planned for construction, and
- Schedule construction activities outside of the typical nesting season (approximately October 1 through February 14).

5.11.7 Fish and Wildlife Coordination Act

Fish and Wildlife Coordination Act (FWCA) of 1958 requires that federal agencies obtain comments from USFWS. This coordination is required whenever a project involves impounding, diverting, or deepening a stream channel or other body of water.

The proposed project would be authorized under a Section 404 of the Clean Water Act IP; coordination under FWCA is addressed during the permitting process with the USACE.

5.11.8 Bald and Golden Eagle Protection Act of 2007

The Bald and Golden Eagle Protection Act (BGEPA) of 2007 provides for the protection of the Bald Eagle and Golden Eagle by prohibiting, except under certain specified conditions, the taking, possession, and sale of such birds.

The project area contains potential habitat for Bald Eagle (*Haliaeetus leucocephalus*); however, no species or nests have been observed in the project area. Bird BMPs per the 2017 updated TxDOT MOU with TPWD would be used for the Bald Eagle.

Coordination with USFWS is not required.

5.11.9 Magnuson-Stevens Fisher Conservation Management Act

Essential fish habitat is defined by the Magnuson-Stevens Fishery Conservation and Management Act as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

The proposed project is located in a coastal county with tidally influenced waters. The proposed drainage channel would outfall into the Brazos River TCEQ Segment 1201-Brazos River Tidal which is tidally influenced however there are no Essential Fish Habitats mapped within the project area. Coordination with National Marine Fisheries Service (NMFS) is not required.

5.11.10 Marine Mammal Protection Act

Marine mammals are protected under the Marine Mammal Protection Act. The Texas coast provides suitable habitat and is within range of several marine mammals including the West Indian Manatee (*Trichechus manatus*), and bottlenose dolphin (*Tursiops truncatus*).

The project area does not contain suitable habitat for marine mammals. Coordination with NMFS is not required.

5.11.11 Threatened, Endangered and Candidate Species

The Endangered Species Act affords protection for federally listed threatened and endangered species and their habitats. State law prohibits direct harm to state-listed species. SGCN are designated by TPWD and may be either federally listed or state-listed species or have no regulatory status.

A Species Analysis Form and Species Analysis Spreadsheet was performed for the proposed project and is on file at TxDOT's Houston District Office. No suitable habitat was observed for any federally listed species; therefore, there would be no effect on federally listed species. However, measures to avoid harm to any threatened and endangered species would be taken should they be observed during construction of the proposed project. Coordination with the USFWS would not be required. The USFWS County List was accessed on August 12, 2020.

Lists of threatened and endangered species maintained by the USFWS and TPWD were consulted on August 12, 2020 to determine species of potential occurrence in the vicinity of the proposed project. The proposed project contains potential habitat for three state-listed threatened species: swallow-tailed kite (*Elanoides forficatus*), white-faced ibis (*Plegadis chihi*), and Rafinesque's big-eared bat (*Corynorhinus Rafinesquii*). No other state listed species would be impacted by the proposed project. The Brazoria Reservoir could provide habitat for white-faced ibis but impacts to these areas would be minimal and would not impact the species. Colonial water bird nest sites and rookeries have been documented in this area in the past; therefore, Bird BMPs would be in place to avoid impacts to the species, where possible. Bottomland hardwood forests occur in and adjacent to the project area which provide habitat for swallow-tailed kite and Rafinesque's big-eared bat. Contractors would be advised of potential occurrence of the swallow-tailed kite, white-faced ibis and Rafinesque's big-eared bat in the project area, and to avoid harming the species if encountered.

There is also potential habitat for nine SGCNs in the project area: plains spotted skunk (Spilogale putorius interrupta), awnless bluestem (Bothriochloa exaristata), Florida pinkroot, (Spigelia texana), Giant sharpstem umbrella-sedge (Cyperus cephalannthus), South Texas spikesedge (Eleocharis austrotexana), Texas meadow-rue (Thalictrum texanum), Texas sunflower (Helianthus praecox spp. praecox), Texas tauschia (Tauschia texana), and Texas windmill grass (Chloris texensis). Contractors would be advised of potential occurrence of the plains spotted skunk in the project area, and to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.

Proposed Best Management Practices (BMPs) Include:
<u>Species Specific BMPs</u>

- Bald Eagle – Bird BMPs and Bald and Golden Eagle Protection Act;
- Plains Spotted Skunk – Contractors would be advised of potential occurrence in the project area, and to avoid harming the species if encountered, and to avoid unnecessary impacts to dens;
- White faced Ibis – Bird BMPs, and if a known or mapped TXNDD colonial water bird rookery is within 300 meters of the project, coordinate with TPWD;
- Timber Rattlesnake – Contractors would be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Bird BMPs

- Not disturbing, destroying, or removing active nests, including ground nesting birds, during the nesting season;
- Avoiding the removal of unoccupied, inactive nests, as practicable;
- Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair;
- Not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit.

Bat BMPs

To determine the appropriate best management practice to avoid or minimize impacts to bats, review the habitat description for the species of interest on the TPWD Rare, Threatened, and Endangered Species of Texas by County List or other trusted resources. All bat surveys and other activities that include direct contact with bats shall comply with TPWD recommended white-nose syndrome protocols located on the TPWD Wildlife Habitat Assessment Program website under "Project Design and Construction".

The following survey and exclusion protocols should be followed prior to commencement of construction activities. For the purposes of this document, structures are defined as bridges, culverts (concrete or metal), wells, and buildings.

- For activities that have the potential to impact structures, cliffs or caves, or trees; a qualified biologist will perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before project letting.
- For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.
- If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction.
- Exclusion devices can be installed by a qualified individual between September I and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F and minimum daytime temperatures are above 70°F. Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, installation of alternate roosts is recommended to replace the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area. See Section 2: Standard Recommendations in TxDOT's Texas Parks & Wildlife 2013 MOU Best Management Practices 2017 Revision for recommended acceptable methods for excluding bats from structures.
- If feature(s) used by bats are removed as a result of construction, replacement structures should incorporate bat-friendly design or artificial roosts should be constructed to replace these features, as practicable.
- Large hollow trees, snags (dead standing trees), and trees with shaggy bark should be surveyed for colonies and, if found, should not be disturbed until the bats are no longer

occupying these features. Post-occupancy surveys should be conducted by a qualified biologist prior to tree removal from the landscape.

- Retain mature, large diameter hardwood forest species and native/ornamental palm trees where feasible.
- In all instances, avoid harm or death to bats. Bats should only be handled as a last resort and after communication with TPWD.

Currently, there are no BMPs in the BMP Programmatic Agreement (PA) for the SGCN listed plant species.

5.12 Air Quality

An Air Quality Technical Report has been completed for the proposed project and is on file at TxDOT's Houston District Office. Since the Air Quality Technical Report was finalized, the 2019-2022 Transportation Improvement Program (TIP), 2045 RTP and new interim Mobile Source Air Toxics (MSAT) Guidance has become effective; therefore, the EA updates the TIP and RTP references and the qualitative MSAT analysis. Also, the estimated time of completion (ETC) year traffic data has been updated since the Air Quality Technical Report.

Project Level Conformity

This project is in Brazoria County which is part of the Houston-Galveston-Brazoria, TX area that has been designated by EPA as a serious and marginal nonattainment area for the 2008 and 2015 ozone National Ambient Air Quality Standards respectively; therefore, the transportation conformity rule applies.

The proposed project is consistent with the H-GAC's financially constrained 2019-2022 TIP and 2045 RTP, as amended, which was initially found to conform to the TCEQ State Implementation Plan (SIP) by FHWA and FTA on August 2, 2019. Copies of the TIP and RTP pages are included in **Appendix E**. All projects that are proposed for federal or state funds were initiated in a manner consistent with federal guidelines in Section 450, of Title 23 CFR and Section 613.200, Subpart B of Title 49 CFR.

The proposed project received an approved project-level conformity determination from FHWA on July 23, 2020. The approved Transportation Conformity Report Form is included in **Appendix E**.

Carbon Monoxide (CO) Traffic Air Quality Analysis (TAQA)

Traffic data for the ETC year 2027 and proposed 2040 design year is estimated to be 13,575 and 16,800 VPD respectively. A prior TxDOT modeling study and previous analyses of similar projects demonstrated that it is unlikely that a CO standard would ever be exceeded as a result of any project with an AADT below 140,000. The AADT projections for the project do not exceed 140,000 vehicles per day; therefore, a TAQA was not required.

Hot Spot Analysis

The project is not located within a CO or particulate matter nonattainment or maintenance area; therefore, a project level hot spot analysis is not required.

MSAT Qualitative Analysis

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA) (https://www.epa.gov/national-air-toxics-assessment). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

Motor Vehicle Emissions Simulator (MOVES)

According to EPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010.

These new emissions data are for light- and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles travelled (VMT) data. MOVES2014 incorporates the effects of three new Federal emissions standard rules not included in MOVES2010.

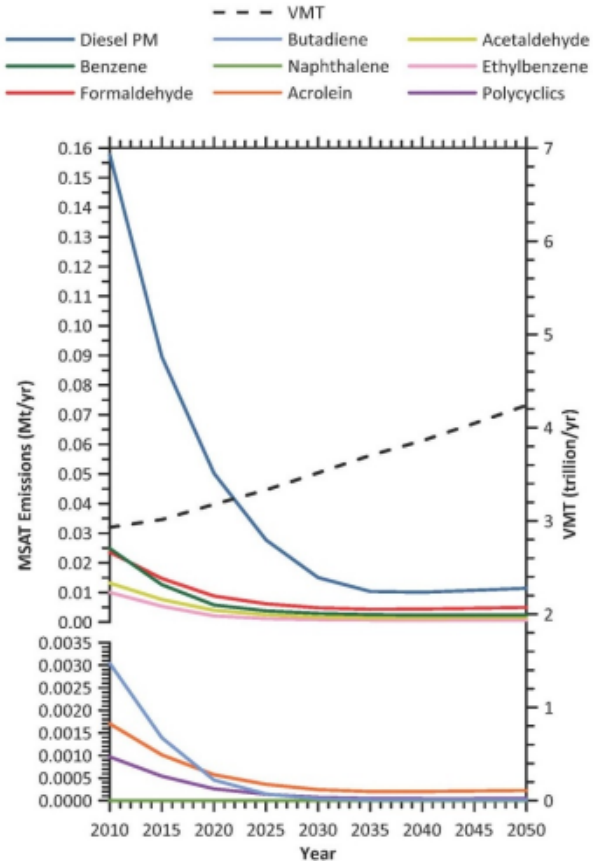
These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014-2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017-2025 (79 FR 60344).

Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt), EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014.

Using EPA's MOVES2014a model, as shown in Figure 2, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 2:

PROJECTED NATIONAL MSAT EMISSION TRENDS 2010 – 2050 FOR VEHICLES OPERATING ON ROADWAYS USING EPA's Moves2014a Model



Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.
Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorological, and other factors.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public

health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

Project Specific MSAT Information
A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives.

The VMT estimated for the Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The additional travel lanes contemplated as part of the Build Alternative will have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway section that would be built between West Road (CR 680B) and Division Road (CR 680A). However, the magnitude and the duration of these potential increases compared to the No Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis
In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action. Consistent with 40 CFR 1502.22 (regarding incomplete and unavailable information) FHWA does not conduct MSAT health impacts for the reasons described below.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are;

cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, “the absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk.”

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Congestion Management Process (CMP)

The CMP is a systematic process for managing congestion that provides information on transportation systems performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The project was developed from H-GAC’s CMP, which meets all requirements of 23 CFR 450.320 and 500.109, as applicable. The CMP was last updated by H-GAC in January 2015. Committed

congestion reduction strategies and operational improvements within the study boundary will consist of roadway widening, intersection improvements and the addition of pedestrian facilities along the project.

Committed congestion reduction strategies and operational improvements within the study boundary will consist of roadway widening, intersection improvements and the addition of pedestrian facilities along the project. Individual projects are listed in **Table 6**.

Table 6: Congestion Management Strategies

Location	Type	Implementation Date
CR 220 from SH 288 to FM 523	Widen Roadway	2023 (2045 RTP)
FM 523 from FM 2004 to SH 332	Widen Roadway	2020 (2045 RTP)
SH 332 at FM 523	Construct Grade Separation	2035 (2045 RTP)
FM 1462, FM 2403, FM 2917, FM 762, SH 332, FM 521, FM 2004, FM 523, FM 528	Construct Brazoria County Bicycle Loop	2020 (2045 RTP)

The congestion reduction strategies considered for this proposed project would help alleviate congestion in the single occupancy vehicle (SOV) study boundary but would not eliminate it. Therefore, the proposed project is justified. The CMP analysis for added SOV capacity projects in the Transportation Management Area (TMA) is on file and available for review at H-GAC.

Construction Air Emissions
During the construction phase of this project, temporary increases in PM and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust from site preparation, and the primary construction-related emissions of MSAT are diesel particulate matter from diesel powered construction equipment and vehicles. The potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from vehicles and equipment. TxDOT encourages construction contractors to use this and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found at: http://www.tceq.state.tx.us/implementation/air/terp/. However, considering the temporary and transient nature of construction-related emissions, the use of fugitive dust control measures, the encouragement of the use of TERP, and compliance with applicable regulatory requirements; it is not anticipated that emissions from construction of this project will have any significant impact on air quality in the area.

5.13 Hazardous Materials

A Hazardous Materials Initial Site Assessment Report for the proposed project has been completed and filed with TxDOT's Houston District Office.

An initial hazardous materials site assessment was conducted for the proposed project to identify sites within the project area that may have experienced soil and/or groundwater contamination by hazardous materials. The assessment consisted of a regulatory/governmental agency database records review and an onsite investigation.

The proposed project would require 70.4 acres of new ROW for the proposed widening and improvements to the drainage facility and there is proposed demolition and/or relocation of two

building structures from three facilities (Blackmar Industries Inc., Brazoria Telephone Co. and Brazos Self Storage). Of these three facilities, none were listed as potentially containing hazardous materials in the hazardous materials database search. The proposed project also includes the demolition and/or relocation of two residential properties. In addition, the proposed project plan would require the replacement of the existing bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. These sites are considered moderate risk to the proposed project. The following sites may require additional investigation:

- The bridges located at Buffalo Camp Bayou and the diversion channel just east of Buffalo Camp Bayou within the project limits may contain lead, lead-in-paint, and/or asbestos. The bridges would be assessed for asbestos and lead containing paint, and mitigated as needed, in accordance with regulatory requirements and applicable TxDOT specifications and guidance.

Buildings or structures acquired through the acquisition process are assessed and mitigated for asbestos, as needed, within the ROW process according to the TxDOT ROW Manual ROW Vol. 6, Miscellaneous Chapter 1, Section 5. Bridge structures being demolished or renovated are assessed and mitigated for asbestos and lead-containing-paint, as needed, within the construction process according to Standard Specification Item 6.10 (and applicable Provisions), and the TxDOT guidance document: Guidance for Handling Asbestos in Construction Projects, dated January 26, 2007.

Excavations would be required at bridge crossings and for improvements to the existing drainage. Excavation would also be required to construct the proposed drainage channel from SH 332 to the Brazos River.

The vacant Buffalo Creek Grocery and Exxon gas station with three Petroleum Storage Tanks (PST), and one reported as being removed would be displaced under the Build Alternative. Four active service stations and six commercial companies that formerly maintained PSTs are in the project search area but ROW would not be required from these sites.

Two active service stations, one commercial company that formerly maintained PSTs, and one active warehouse that formerly maintained PSTs, and one oil/gas well would be displaced under the Build Alternative. ROW would be acquired without displacement of the facility from three other service stations and four other industrial or agricultural facilities maintaining PSTs. There is no documented unresolved soil or groundwater contamination at any of these facilities; however, the presence of PSTs on these facilities indicates that thus-far undetected contamination is possible. These sites are considered moderate risk to the proposed project. They would be further assessed by TxDOT prior to or during ROW acquisition to determine the likelihood of encountering contaminated soils and groundwater during construction activities. These assessments may include sampling of soil or groundwater in the vicinity of proposed excavations. If warranted, remediation activities would then be completed prior to construction to address contaminated soil/groundwater impacting the construction zone. Waste management plans would be in-place to address contamination during construction activities, if remediation is not complete prior to construction.

During any construction project, there exists the potential to encounter contaminated soil or water. Included in the contract would be the TxDOT standard specifications for construction that require the contractor to be familiar with and comply with all federal, state, and local laws, ordinances, and regulations related to the treatment and disposal of hazardous materials. Should hazardous materials/substances be encountered, the TxDOT Houston District Office would be notified and steps would be taken to protect personnel and the environment.

The contractor would respond appropriately to prevent, minimize, and control the spill of hazardous materials in the construction staging area. The use of construction equipment, particularly the storage of fuels and chemicals, within sensitive areas, including water resources

such as floodplains and streams, would be minimized or eliminated. Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. All construction materials used for this project would be removed as soon as work schedules permit.

5.14 Traffic Noise

A traffic noise analysis was accomplished in accordance with TxDOT's (FHWA approved) Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011). This analysis is documented in the Noise Technical Report which is on file at TxDOT's Houston District Office.

The proposed project would not result in a traffic noise impact. However, to avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the predicted (2040) noise impact contours documented in the Noise Technical Report.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers is expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

A copy of this traffic noise analysis will be available to local officials. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

5.15 Induced Growth

The following information describes the analysis of potential induced growth impacts associated with the proposed improvements to SH 332. The following induced growth impacts analyses follow guidance outlined TxDOT's January 2019 "*Guidance: Indirect Impacts Analysis*".

Indirect impacts are defined as those caused by an action and are later in time or farther removed in distance, but still reasonably foreseeable. Indirect impacts are not directly associated with the construction and operation of the roadway and are often caused by related development and induced growth. This, in turn, can result in a variety of related impacts such as changes in land use, population density or growth rate, economic vitality, and impacts on air and water and other natural resources.

Induced growth indirect impacts are defined as those effects that are attributable to the induced growth resulting from transportation and accessibility improvement influences on future land use and development. Encroachment alteration impacts are more closely related to direct impacts than induced growth impacts. Encroachment alteration impacts are those that alter the behavior and functioning of the physical environment. These impacts are related to project design features but are separated from the project by time and/or distance. The encroachment alteration impacts were considered and analyzed concurrently with the direct impacts analysis of this document, in accordance to current TxDOT policy.

Under the federal Council on Environmental Quality (CEQ) regulations, an indirect effects analysis must identify and eliminate issues which are not significant, or which have been covered by prior environmental review, while determining which issues should be analyzed in-depth. The analysis follows the six step process for identifying induced growth impacts outlined in TxDOT's *Guidance: Indirect Impacts Analysis* (January 2019).

Step 1 – Define the Methodology
Due the mix of suburban and rural land use within the project area and the scope of proposed project activities, a combination of the planning judgment method and cartographic method were used to identify induced growth impacts. The planning judgement method is a primarily qualitative method which uses input from local planning officials, planning documents, and incorporates the cartographic method in an analysis of growth patterns and trends in the area. Assumptions associated with this combined methodology include the assumption that growth patterns will be consistent with historical trends, and that planning professionals can provide predictions or assessments of the level of influence this project may have on growth and development in the area. Limitations of the methodology include subjective conclusions that are not easily quantified.

Step 2 – Define the Area of Influence and Study Timeframe
The indirect impacts study area for this project (referred to as the Area of Influence [AOI]) was developed based on an evaluation of existing land use and in consideration of the components of the proposed project. Because the proposed project would not result in new connections or access points to previously inaccessible areas, it was determined that the AOI would reasonably be adjacent properties with existing access to the SH 332 facility, as represented by the adjacent parcel boundaries. The project area and boundaries of the AOI are depicted in **Appendix F Exhibit G-1**.

The proposed project AOI is predominantly undeveloped land (approximately 2,058 acres), with approximately 894 acres of developed land. The temporal boundaries of the AOI have been defined as the projected year of completion (2022) and the horizon year of the Houston-Galveston Area Council (HGAC) long-range plan (2045).

Step 3 – Identify Areas Subject to induced growth in the AOI
The current type and density of development in the AOI reflects the suburban and rural nature of the project area, as well as the existing SH 332 transportation corridor. The general character of the community along SH 332 is a suburban/rural setting consisting of primarily mixed commercial and residential uses, along with undeveloped, heavily wooded areas. The western portion of the proposed project AOI, located within unincorporated Brazoria County, Texas, is considered rural with primarily undeveloped lands with a small area of single-family developments. The eastern portion of the project, located within the City of Lake Jackson, Texas, is urban in nature with more commercial and industrial development.

Within the AOI there is a total of 155 parcels, of which 67 parcels are undeveloped or have the potential for redevelopment at this time. There are parcels, such as Wilderness Park which are undevelopable and Wilderness Golf Course that could not be redeveloped.

A parcel would be subject to induced growth if all of the following are true:

- It is adjacent to the limited access highway;
- The parcel currently has utility lines available to it; and
- The project proposes to construct an access road that would allow traffic to reach the parcel.

The parcels that are undeveloped or have the potential for redevelopment at this time do currently have utility lines available to them, however the proposed reconstructed SH 332 would not be a limited access highway and existing SH 332 currently provides access to all parcels. The project does not propose to alter access to SH 332.

Step 4 – Determine if Growth is Likely to Occur in the Induced Growth Areas
As part of the preliminary investigations into the reasonably foreseeable development for the project area, a planning questionnaire was sent to various entities responsible for planning and permitting for the City of Brazoria, the City of Lake Jackson, and Brazoria County. In response to the planning and questionnaire from the City Manager of the City of Brazoria, Teresa Borders (January 2017), and referencing the Comprehensive Master Plan for the City of Lake Jackson (January 2017), growth and development associated with this project are not anticipated within the AOI.

The proposed project would not alter access to SH 332. One purpose of the project is to increase mobility. Currently, the roadway is at or above capacity during peak hour and the project seeks to relieve congestion; however according to predictive traffic models the roadway is only expected to see an increase of 5,650 cars in a day with an increase of 337 cars at peak hours by the year 2040. While increased mobility will occur, it is not anticipated that the increase will be significant enough to attract much larger amounts of traffic making it appealing for developers. Therefore, it is unlikely that induced growth would occur.

Step 5 – Identify Resources Subject to Induced Growth Impacts
As indicated in Step 3, induced growth is not anticipated. Therefore, the analysis does not require an assessment of resources potentially subject to induced growth.

Step 6 – Identify Mitigation
As indicated in Step 3, induced growth is not anticipated. Therefore, the analysis does not require an assessment of potential mitigation options.

5.16 Cumulative Impacts

The following information describes the analysis of potential cumulative impacts associated with the proposed improvements to SH 332. The following cumulative impacts analyses follow guidance outlined TxDOT's January 2019 "*Cumulative Impacts Analysis Guidelines*".

Cumulative impacts result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR §1508.7). They are defined as impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

Per TxDOT's Cumulative Impacts Decision Tree (2014), it was determined that a cumulative impacts analysis was not required because: 1) the project would not have substantial direct or indirect impacts on any resource; and 2) no resources in the project area are in poor or declining health. However, per the *Preparing an Environmental Assessment* guidelines, a Cumulative Impacts analysis has been conducted below.

Step 1 – Resource Study Area, Conditions and Trends
This portion of SH 332 passes through the heavily developed portion of Lake Jackson on the east side of the project and is buffered by the Brazoria Reservoir to the north of the proposed project

and the Brazos River and associated oxbows south of the proposed project on the west side of the project. In between are tracts of undeveloped parcels, residential neighborhoods, and commercial businesses and churches, parks and a golf course. As stated in **Section 5.2**, the proposed project would not result in substantial land use impacts.

Environmental studies regarding the potential direct impacts of the proposed project on the natural and human environment revealed potential impacts to water resources, vegetation, and state-listed threatened species and SGCN. (Note – no habitat for federally protected species is located within or adjacent to the project limits). Regulations of several agencies protect and minimize impacts to the water resources and species within the study area, including the TCEQ, USACE, USFWS, and TPWD.

As noted above, no habitat for federally listed threatened or endangered species was identified; therefore, there were no species of poor or declining health identified in the project area. In addition, the project contains potential habitat for three state-listed threatened species: swallow-tailed kite, white-faced ibis, and Rafinesque's big-eared bat. The project also contains habitat for nine SGCN: plains spotted skunk, awnless bluestem, Florida pinkroot, Giant sharpstem umbrella-sedge, South Texas spikesedge, Texas meadow-rue, Texas sunflower, Texas tauschia, and Texas windmill grass. Coordination has been conducted and BMPs would be implemented to avoid and minimize impacts.

Step 2 – Direct and Indirect Effects on each Resource from the Proposed Project
Impacts to water resources would result from clearing, grading, excavation, and filling, as well as the construction of an outfall structure at the Brazos River. However, impacts to water resources would be minimized and mitigated through permitting with the USACE for impacts to waters of the U.S. and with best management practices and other regulations enforced by the TCEQ.

Impacts to vegetation consist of permanent disturbance of Urban Low Intensity, Columbia Bottomlands: Live Oak Forest and Woodland, Columbia Bottomlands: Hardwood Forest and Woodland, and Columbia Bottomlands: Mixed Evergreen/Hardwood Forest and Woodland vegetation types.

There would be a total of 61.11 acres of permanent impact to the Columbia Bottomland Riparian MOU Vegetation. The impacts to vegetation would exceed the impact threshold in the Threshold Table Programmatic Agreement between TxDOT and TPWD for Riparian MOU Vegetation. The majority of these impacts will be due to the proposed outfall channel. As this would not provide new access to the adjacent land, additional impacts to the surrounding vegetation are not anticipated.

Step 3- Other Actions – Past, Present and Reasonably Foreseeable – and their Effect on each Resource
Past impacts would include the residential and commercial development along SH 332. The churches and residential properties are typically larger parcels that allow for natural vegetation.

There are no additional projects or actions that are currently happening or planned for the foreseeable future within the project area.

Step 4 – The Overall Effects of the Proposed Project Combined with other Actions
This project would reduce the Columbia Bottomland Riparian Vegetation in the area, however, no additional reduction in the Columbia Bottomlands is anticipated from this project. While the Columbia Bottomlands provide refuge for migratory birds and other species, the proposed project would not provide any new access to previously publicly inaccessible locations and would therefore continue to provide refuge to species.

Step 5 – Mitigation of Cumulative Effects
Mitigation would be required and would take place at the Coastal Bottomlands Mitigation Bank. Credit use will be determined by the USACE IP.

Due to avoidance, minimization, and mitigation measures implemented for these resources, the potential impacts associated with this project were determined to not be substantial. Although resources within the study area do require regulatory consideration, the nature of the proposed project impacts, compliance with regulations, and proposed BMPs are not expected to contribute to the poor or declining health of these resources.

5.17 Construction Phase Impacts

The proposed project construction would require traffic control. A traffic control plan would be implemented to assure uninterrupted traffic flow during construction. Signs would be strategically placed as a method of controlling traffic during the construction activities. Ingress and egress to any affected private, governmental, commercial, or retail establishments would be maintained throughout the construction period. At this time, it is not anticipated that the proposed project would require detours or road closures during construction. Access to homes and businesses would be maintained throughout construction. Every effort would be made to preserve as much vegetation as possible within the ROW.

During the construction phase of the proposed project, due to operations normally associated with road construction, there is a possibility that noise levels would be greater than normal in the areas adjacent to the ROW. Construction is normally limited to daylight hours when occasional loud noises are better tolerated. Due to the relatively short-term exposure periods imposed on any one receiver, extended disruption of normal activities is not considered likely. Reasonable efforts would be made to minimize construction noise.

See Section 5.12 for additional information regarding construction-related air emissions. During the construction phase of this project, temporary increases in PM and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust from site preparation, and the primary construction-related emissions of MSAT are diesel particulate matter from diesel powered construction equipment and vehicles.

The potential impacts of particulate matter emissions would be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from vehicles and equipment. TxDOT encourages construction contractors to use this and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found at: http://www.tceq.state.tx.us/implementation/air/terp/.

However, considering the temporary and transient nature of construction-related emissions, the use of fugitive dust control measures, the encouragement of the use of TERP, and compliance

with applicable regulatory requirements; it is not anticipated that emissions from construction of this project would have any significant impact on air quality in the area.

Reasonable measures would be taken to minimize the inconvenience to the vehicles using the roadway during the construction phase. Residential and business properties would be accessible during and after construction. The proposed project would improve the safety, efficiency, and operations of the roadway.

During project development, TxDOT would design, use, and promote construction practices that minimize adverse effects on both regulated and unregulated wildlife habitat. Existing vegetation, especially native trees, would be avoided and preserved wherever practicable.

The No Build Alternative does not include construction within the proposed project area. Maintenance activities would continue. Under the No Build Alternative, SH 332 would fail to meet the purpose and needs of the proposed project and would still be subject to temporary traffic delays, detouring, and other construction-related effects from time to time.

6.0 AGENCY COORDINATION

6.1 Texas Parks and Wildlife Department Coordination

In accordance with the TxDOT/TPWD MOU (effective September 1, 2013), a Tier I Site Assessment was conducted in order to define the amount and type of potential habitat within the project area and to determine the potential need for coordination with TPWD. The proposed project would disturb habitat that exceeds the amount indicated in the *Threshold Programmatic Agreement*, therefore, coordination with TPWD is required and has been completed June 23, 2017 (**Appendix G**).

6.2 U.S. Army Corps of Engineers

The proposed project would require a Section 404 IP because the loss of waters of the U.S. would exceed the limits of a NWP. Coordination with USACE will occur during the 404 process.

6.3 TCEQ

An IP would be required for the proposed project and over 3 acres of waters of the U.S. would be impacted; therefore, Section 401 compliance is expected to entail the completion of a Tier II Certification Questionnaire and Alternatives Analysis Checklist, which would be reviewed by the TCEQ as part of the Section 404 IP review process.

6.4 U.S. Coast Guard (USCG) Coordination

Buffalo Camp Bayou is not a navigable water of the U.S. as it is not subject to the ebb and flow of the tide and is not currently used or susceptible for commercial transport due to a downstream obstruction. Therefore, coordination with USCG would not be required as the proposed project would not entail construction of a bridge over a navigable waterway.

6.5 Texas Historical Commission

On August 3, 2004, THC concurred with TxDOT's findings of no historic properties in a 500 foot APE. On January 3, 2006, THC concurred with a similar finding when TxDOT coordinated the addition of new ROW that included a 1.15 mile long drainage ditch. In a memo dated January 26, 2009, TxDOT Historians determined that the proposed ROW was within the original APE and that the proposed project was excluded from individual coordination with the THC.

Due to the passage of time since the previous survey and coordination efforts, an additional historic resources survey was performed to update the 2004 survey. The historic resource study

and survey performed in April 2017 identified seven additional resources but none of them were determined to be eligible for listing in the NRHP. THC correspondence can be seen in **Appendix G**.

Additionally, the THC concurred with TxDOT's findings that no archeological sites eligible for listing in the NRHP were identified and issued final clearance for the project on September 16, 2005. Coordination for the ROW not studied in 2004 and 2005 was completed in September 2017. This correspondence can be seen in **Appendix G**.

7.0 PUBLIC INVOLVEMENT

TxDOT conducted a public meeting concerning the proposed reconstruction of SH 332. The public meeting was held on September 29, 2015, at the City of Lake Jackson Civic Center located at 333 SH 332 in Lake Jackson, Texas. Additionally, an unfinished Environmental Assessment had previously been performed for this project and a public meeting had been held on March 30, 2004.

The Notice of Public Meeting was published on August 29, 2015, and September 19, 2015, in the *Houston Chronicle*, and August 30, 2015 and September 20, 2015, in the *La Voz* Spanish newspaper. A copy of the notice was mailed to adjacent property owners and other individuals who had expressed interest about the proposed project.

The public meeting was held, from approximately 5:30 p.m. to 7:30 p.m. in an open house format. Registration desks were located at the entrances of the room where attendees were invited to sign-in. Each person was provided with a pre-addressed comment form to share their thoughts regarding the proposed project and a project fact sheet which contained a brief project description, purpose and need of the proposed project, schedule and existing and proposed typical sections. Six elected officials (or their representatives), one member of the media, and 87 members of the public signed in at the public meeting.

Citizens were given an opportunity to view the various exhibits that were on display. Exhibits included a welcome board, project description, the need and purpose, project location map, proposed typical sections, project history, project timeline, a build alternatives evaluation matrix, how to provide comments, and the schematic layout for the project. Additionally, project management staff was available to provide information and answer questions from citizens regarding the proposed project.

The public was encouraged to ask questions and make comments. All verbal questions and comments were immediately responded to at the meetings.

Comment forms and e-mails were received during the comment period following the public meetings. Although several comments stated support for the proposed project, many of the comments received did not support the project. Common reasons for opposition included impacts to private property.

A Public Meeting Summary Report for the proposed project containing all the public comments and TxDOT responses has been completed and filed with TxDOT's Houston District Office.

TxDOT conducted a public hearing on September 26, 2017 at the Lake Jackson Civic Center located at 333 SH 332 in Lake Jackson, Texas. The purpose of the public hearing was to present the Preferred Alternative and to receive public comments on the proposed project.

The Notice of Public Hearing was published on September 5, 12, and 19th in the *Houston Chronicle* (English), September 10th and 17th in the *La Voz* (Spanish) and September 18th in The Facts (English). The notice was published on the Houston Chronicle website on September 5, 2017 (English and Spanish). Additionally, flyers in English and Spanish were hand delivered to Lake Jackson area businesses. English and Spanish copies of the notice and flyer were mailed to property owners adjacent to SH 332 and other individuals who had expressed interest about the proposed project.

The public hearing and notification of the public hearing complied with both Section 4(f) and Parks and Wildlife Code Chapter 26 requirements.

The public hearing was held in an open house format from approximately 5:30 p.m. to 6:30 p.m. and the formal hearing began at 6:30 p.m. Registration desks were located at the entrance to the Civic Center where attendees were invited to sign-in. Each person was provided with a pre-addressed comment form to share their thoughts regarding the proposed project; a speaker registration card if they wanted to speak at the hearing; and a project handout which contained a brief project description, purpose and need of the proposed project, schedule and existing and proposed typical sections. Eight elected officials, one representative from the media, and 120 members of the public signed in at the public hearing.

Citizens were given an opportunity to view the various exhibits that were on display. Exhibits included a welcome board, project location map, need and purpose, typical sections, public area impacts explaining the impacts to the two Section 4(f) and Parks and Wildlife Code Chapter 26 properties; Wilderness Golf Course and Wilderness Park, next steps, how to make comments, constraints map, and large-scale schematic layouts of the proposed project overlaid onto aerial photographs. Additionally, project management staff was available to provide information and answer questions from citizens regarding the proposed project.

The public was encouraged to ask questions and make comments. The public was also allowed to speak at the formal hearing in order to have their verbal comments placed on public record. Although the public‘s comments were not responded to during the formal hearing, all verbal questions and comments were immediately responded to before and after the formal hearing.

The comment forms and e-mails were received during the comment period following the public hearing. Many comments expressed flooding concerns and the potential to exacerbate flooding by raising the elevation of the highway and the need for drainage to accommodate flood waters. Public Hearing Documentation for the proposed project containing all of the public comments and responses has been completed and filed with TxDOT’s Houston District Office.

After review of both the verbal and written comments provided at the public hearing, TxDOT added the following design change to the proposed project:

- TxDOT has revised the design to provide a flush median in the area of the Gulf Coast Bird Observatory (GCBO) to allow for left turns in and out of the GCBO driveway.

None of the above design changes resulting from comments received at the public hearing result in greater impacts than what has been previously identified.

8.0 POST-ENVIRONMENTAL CLEARANCE ACTIVITIES AND DESIGN/CONSTRUCTION COMMITMENTS

8.1 Post-Environmental Clearance Activities

Table 7 provides a list and brief explanation of environmental activities that could not be completed prior to the issuance of a FONSI and the anticipated phase that the task would be completed.

Table 7: Mitigation and Monitoring Commitments

	Project Issues and Resources	Mitigation and Monitoring Commitments	Phase of Completion
1	Section 401 Impacts to Jurisdictional Waters	It is anticipated that IP would be required for the proposed project and over 3 acres of waters of the U.S. would be impacted; therefore, an Individual 401 Certification will be required. A Tier II Certification Questionnaire and Alternatives Analysis Checklist will be completed, which would be reviewed by the TCEQ as part of the Section 404 IP review process.	Prior to Construction
2	Section 404 Impacts to Jurisdictional Waters	Nine potentially jurisdictional waters of the U.S. are present in the proposed project area. The work at three crossings is expected to require a Section 404 IP because the loss of waters of the U.S. at each of these crossings would exceed 0.5 acre. Since the remaining six crossings are dependent on the three crossings requiring an IP, they cannot be covered under a NWP per 33 CFR 330.6(d). Therefore, it is anticipated that an IP would be required for the entire project. An Individual 401 Certification is required from TCEQ. Mitigation for the wetland impacts would occur at the Coastal Bottomlands Mitigation Bank. Credit use will be determined by the USACE.	Prior to construction
3	Vegetation	The proposed project would exceed impact thresholds indicated in the Threshold Table Programmatic Agreement between TxDOT and TPWD for Riparian MOU Vegetation. TPWD Coordination has been completed and can be seen in Appendix G.	Completed

8.2 Design/Construction Commitments

Table 8 is a list of project-specific avoidance measures or special instructions that will be conveyed to the design or construction contractor as a result of the departments environmental review of the project:

Table 8: Design/Construction Commitments

	Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
1	Storm Water	Storm Water Runoff from Construction	The construction contractor would take appropriate measures to prevent, minimize and control the spill of fuels,

	Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
			lubricants, and hazardous materials in the construction staging areas. BMP's would be implemented in accordance with the SW3P.
2	Water Quality	Storm Water Runoff from Construction	At least one BMP from each of the three categories of onsite water quality management (erosion control, post-construction total suspended solids control, and sedimentation control) would be used on the proposed project. Other approved BMPs may be substituted, if necessary, using one of the BMPs from the same category.
3	Texas Pollutant Discharge Elimination System	No Long-Term Water Quality Impacts	This project would include five or more acres of earth disturbance. TxDOT would comply with the TCEQ-TPDES-CGP. A SW3P would be implemented, and a construction site notice would be posted on the construction site. A NOI would be required.
4	Floodplains	Construction Impacts within the 100-year floodplain	The proposed project is located in the 100-year floodplain. Hydraulic design information will be coordinated with the local Floodplain Administrator.
5	Hazardous Materials	Accidental Disturbance of Hazardous Materials	The contractor would take appropriate measures to prevent, minimize, and control spillage of hazardous materials in the construction staging area(s). All material being removed or disposed of by the contractor would be done in accordance with applicable State and Federal laws as not to degrade ambient water quality. All of these measures would be enforced under appropriate specifications in the plan, specification and estimate stage of project development.

	Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
6	Construction	Traffic Detouring, Temporary Noise and Dust, etc.	Plans to ensure safe and efficient traffic flow during construction would be developed as part of the detailed construction plans for the proposed improvements. Other construction-related impacts (such as temporary air and noise effects) would be addressed in compliance with standard TxDOT policies and procedures.
7	Invasive Species and Beneficial Landscaping	Beneficial	The TxDOT-approved seeding specification that is in compliance with EO 13112 would be used to revegetate the ROW. Moreover, TxDOT would design and promote construction practices that minimize adverse effects on existing vegetation. Trees within the ROW, but not in the construction zone, would not be removed if possible and such areas would be preserved to try to minimize the impact to wildlife habitat in the area.
8	Impacts to Threatened and Endangered Species and SGCNs	Threatened and Endangered Species BMPs	Bird BMPs per the 2013 TxDOT MOU with TPWD would be used for the swallow-tailed kite (*Elanoides forficatus*) and white-faced ibis (*Plegadis chihi*). Bat BMPs per the 2013 TxDOT MOU with TPWD would be used for the Rafinesque's big-eared bat (*Corynorhinus Rafinesquii*). Contractors would be advised of potential occurrence of the Plains Spotted Skunk (*Spilogale putorius*), swallow-tailed kite (*Elanoides forficatus*), White faced Ibis (Plegadis chihi), and the Rafinesque's big-eared bat (*Corynorhinus Rafinesquii*) in the project area, and to avoid harming the species if encountered. BMP's would be implemented where possible; however, there are currently no BMPs in the BMP PA for plant species.
9	Migratory Bird Treaty Act	Impacts to Vegetation during Migratory Bird Nesting Season	To ensure compliance with the MBTA, ROW clearing should be conducted outside of the nesting season which is defined as approximately October 1 through February 14. No vegetation would be removed containing nests, eggs, or young should clearing occur during the nesting season and measures would be taken to discourage birds from nesting in existing structures.

9.0 CONCLUSION

TxDOT recommends the Build Alternative as the Preferred Alternative and a FONSI.

The Preferred Alternative would meet the need and purpose of the proposed project, which is to reduce traffic congestion, accommodate population growth, enhance mobility, and improve safety and drainage along SH 332.

The proposed reconstruction of SH 332 would minimize and avoid, where possible, impacts to the natural and human environment. The proposed project would provide continuity with the continued growth in the area. Consideration of engineering, financial, and environmental constraints would result in acquiring 70.4 acres of additional ROW; displacements; and no impacts to federally listed threatened or endangered species.

The engineering, social, economic, and environmental investigations conducted thus far on the proposed project, as proposed by the Preferred Alternative; indicate that the proposed project would result in no significant impacts of a level that would warrant an Environmental Impact Statement. Alternative selection was finalized after completion of the public review period, which included a public hearing. No significant impacts are identified as a result of public review or at the public hearing.

Implementation of the proposed project would not result in a significant impact on the human or natural environment. Therefore, a finding of no significant impact is recommended.

REFERENCES

Council on Environmental Quality. 2005. *Regulations for Implementing the Procedural Provisions of NEPA*. 2005. Washington, D.C. https://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf

Federal Highway Administration. 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. FHWA Technical Advisory T6640.8A. October 30, 1987. http://www.fhwa.dot.gov/legsregs/directives/techadvs/t664008a.htm

Federal Highway Administration. 1990. Need and Purpose in Environmental Documents. Memorandum. September 18, 1990.

Federal Highway Administration and Federal Transit Authority. 2005. Integration of Planning and National Environmental Policy Act (NEPA).

National Park Service. 2005. Wild and Scenic Rivers by State. https://www.rivers.gov/ Accessed January 2017.

National Cooperative Highway Research Program. 2002. Report 466: Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects, National Academy Press, Washington, D.C.

Texas Department of Transportation. Air Quality Technical Report - SH 332 in Brazoria County, Texas. March 2016.

Texas Department of Transportation. Biological Evaluation Form - SH 332 in Brazoria County, Texas. August 2016.

Texas Department of Transportation. Socioeconomics Technical Report - SH 332 in Brazoria County, Texas. July 2016.

Texas Department of Transportation. Hazardous Materials ISA Report - SH 332 in Brazoria County, Texas. November 2015.

Texas Department of Transportation. Public Meeting Summary Report - SH 332 in Brazoria County, Texas. February 2016.

Texas Department of Transportation. Purpose and Need Technical Report – SH 332 in Brazoria County, Texas. January 2016.

Texas Department of Transportation. Project Coordination Request (PCR) for Historical Studies Project - SH 332 in Brazoria County, Texas. August 2016.

Texas Department of Transportation. Noise Technical Report - SH 332 in Brazoria County, Texas. June 2016.

Texas Department of Transportation. Section 4(f) Technical Report - SH 332 in Brazoria County, Texas. June 2016.

Texas Department of Transportation. Texas Peace Officer's Crash Reports (CR-3). 2012 Statewide Traffic Crash Rates. May 2016

Texas Department of Transportation. Texas Peace Officer's Crash Reports (CR-3). 2013 Statewide Traffic Crash Rates. May 2016

Texas Department of Transportation. Texas Peace Officer's Crash Reports (CR-3). 2014 Statewide Traffic Crash Rates. May 2016

Texas Department of Transportation. Texas Peace Officer's Crash Reports (CR-3). Reportable Motor Vehicle Traffic Crashes on SH 332 Between FM 521 and SH 288 in Brazoria County 2010-2015 Year to Date. December 2015.

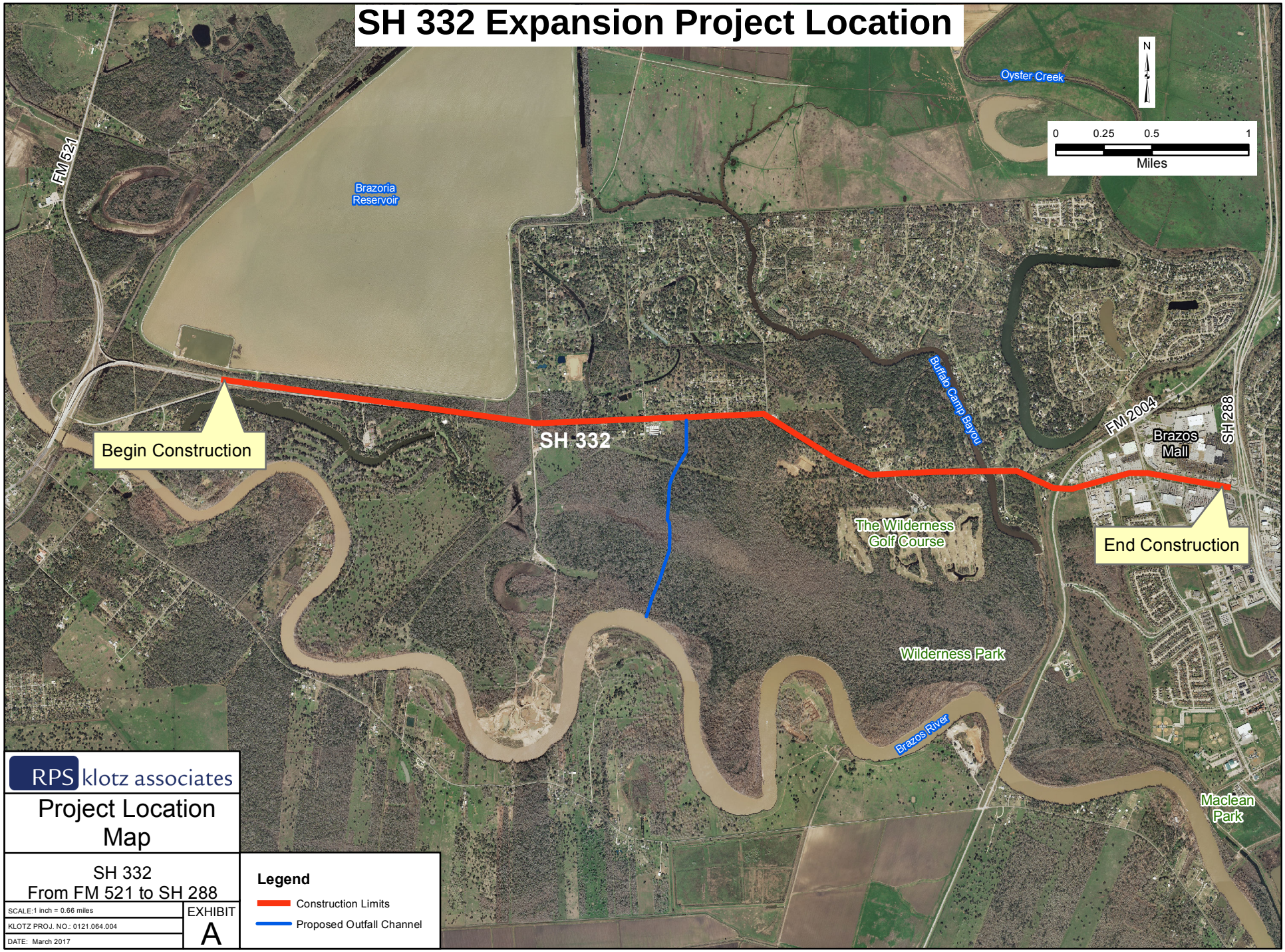
Texas Department of Transportation. Water Resources Technical Report - SH 332 in Brazoria County, Texas. November 2016.

U.S. Environmental Protection Agency. 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. April 1998. Washington, D.C. https://www.epa.gov/sites/production/files/2015-04/documents/ej-guidance-nepa-compliance-analyses.pdf

Appendix A

Project Location Map

SH 332 Expansion Project Location



RPS klotz associates

Project Location Map

SH 332
From FM 521 to SH 288

SCALE:1 inch = 0.66 miles

KLOTZ PROJ. NO.: 0121.064.004

DATE: March 2017

EXHIBIT A

Legend

Construction Limits

Proposed Outfall Channel

Appendix B

Project Photos

SH 332, beginning of project east of FM 521, looking east.

SH 332, beginning of project east of FM 521, looking west.

SH 332 and CR 680 looking east.

SH 332 and CR 680 looking west.

Wilderness Park Forest Trail Trailhead, looking south.

Wilderness Park Forest Trail Trailhead, looking south.

Wilderness Park Forest Trail Map.

Wilderness Park Forest Trail, southern end.

Urban Low Intensity located within the project area

Columbia Bottomlands: Hardwood Forest and Woodland located within the project area.

Columbia Bottomlands: Live Oak Forest and Woodland located within the project area

Columbia Bottomlands: Mixed Evergreen/Hardwood Forest and Woodland located within the project area

Appendix C

Schematics

SCHEMATIC LAYOUT

SH 332

COUNTY: BRAZORIA
LIMITS FROM: 0.70 Mi E. of FM 521
LIMITS TO: SH 288
CSJ: 1524-01-047
DATE: 2/26/2016
APPROVED: / /

NOT A BIDDING DOCUMENT
, P.E.
TBPE NO.

LEGEND

DESCRIPTION	SYMBOLOGY	WEIGHT	COLOR CODE
PROPOSED MAIN LANES		2	BLACK -0
PROPOSED SIDEWALKS		2	MAGENTA -200
PROPOSED RETAINING WALL		6	RED -3
PROPOSED STRIPING		1	ORANGE -6
PROPOSED LANE INDICATOR		1	BLACK -0
PROPOSED RIGHT-OF-WAY		5	BLACK -0
CONTROL OF ACCESS		2	RED -3
PLANIMETRIC		1	GREEN -2
EXISTING RIGHT-OF-WAY		1	BLACK -0
EXISTING ROADWAY TO BE REMOVED		1	BLACK -0
EXISTING LANE INDICATOR		1	BLACK -0
TRAFFIC COUNT YEAR (2040) ADT		1	BLACK -0

COLORFILL LEGEND

MAIN LANES
RAISED MEDIAN
BRIDGE

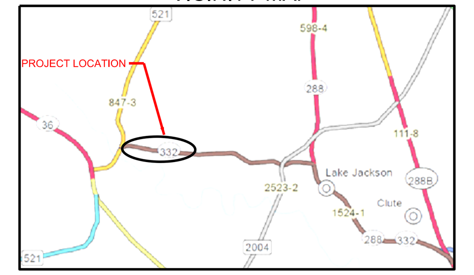
SCALE

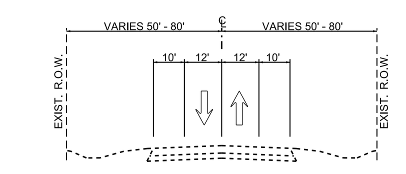
0 100 200 300 400

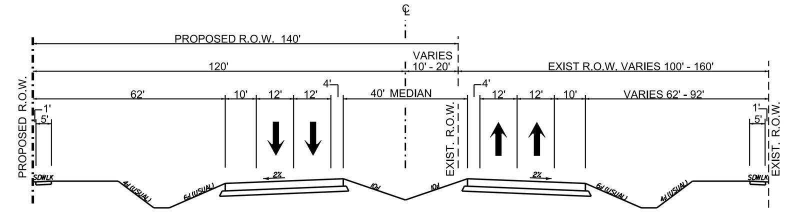
DESIGN CRITERIA

FUNCTIONAL CLASSIFICATION: ARTERIAL
BEGIN PROJECT TO CR 532 DESIGN CRITERIA: MULTI-LANE RURAL HIGHWAY
DESIGN SPEED: 70 MPH
CR 532 TO STA. 310+00 DESIGN CRITERIA: SUBURBAN ROADWAY
DESIGN SPEED: 50 MPH
STA. 310+00 TO END PROJECT DESIGN CRITERIA: LOW-SPEED URBAN STREET
DESIGN SPEED: 45 MPH

VICINITY MAP




EXISTING TYPICAL SECTION
STA. 125+00 TO 370+00


PROPOSED TYPICAL SECTION
STA. 125+00 TO 195+00

TEXAS DEPARTMENT OF TRANSPORTATION

REVISED SCHEMATIC 2-26-16

PRELIMINARY SUBJECT TO CHANGE

TEXAS DEPARTMENT OF TRANSPORTATION
REVISED SCHEMATIC 2-26-16
PRELIMINARY SUBJECT TO CHANGE

TEXAS DEPARTMENT OF TRANSPORTATION

REVISED SCHEMATIC 2-26-16

332

PRELIMINARY
SUBJECT TO CHANGE

SCHEMATIC LAYOUT
SH 332

COUNTY: BRAZORIA
CONTROL SECTION: 0174-01-001
PROJECT NO.: SH 332
CSJ: 0174-01-001
APPROVED: / /

TRUE & MODEL NAVIGATION

FOR
DEPT. NO.

LEGEND

(INDUSTRIAL)	(OFFICE)	(RESI)	(CHURCH)
PROPOSED CURB LINES	PROPOSED		
PROPOSED EDGE OF PAVEMENT	PROPOSED		
PROPOSED RIGHT OF WAY	PROPOSED		
PROPOSED LEFT OF WAY	PROPOSED		
PROPOSED LINE OF WAY	PROPOSED		
PROPOSED LEFT OF WAY	PROPOSED		
EXISTING RIGHT OF WAY	EXISTING		
EXISTING RIGHT OF WAY	EXISTING		
EXISTING RIGHT OF WAY	EXISTING		
EXISTING CURB LINES	EXISTING		
EXISTING EDGE OF PAVEMENT	EXISTING		
EXISTING LEFT OF WAY	EXISTING		
EXISTING LINE OF WAY	EXISTING		
EXISTING LEFT OF WAY	EXISTING		

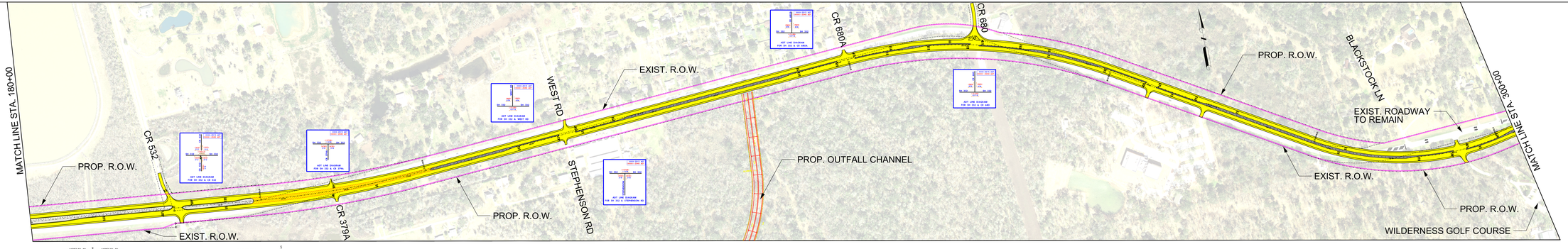
COLORFILL LEGEND
MAIN LANES
MAIN LANES MEDIAN
BRIDGE

SCALE
1000 0 1000 2000 3000

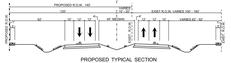
DESIGN CRITERIA

FUNCTIONAL CLASSIFICATION: ARTERIAL
SH 332 FROM CR 532 TO CR 680 DESIGN CRITERIA: MULTILANE RURAL HIGHWAY
DESIGN SPEED: 70 MPH
CR 680 TO STA. 310+00 DESIGN CRITERIA: SUBURBAN ROADWAY
DESIGN SPEED: 40 MPH
STA. 310+00 TO END PROJECT DESIGN CRITERIA: LOW-SPEED URBAN STREET
DESIGN SPEED: 40 MPH

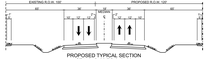
VICINITY MAP



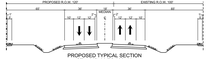
EXISTING TYPICAL SECTION
STA. 125+00 TO 370+00



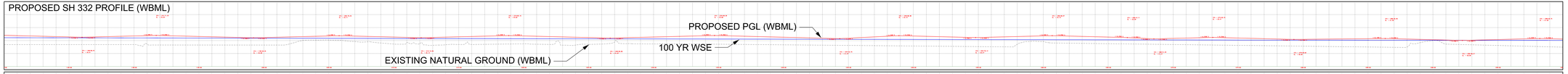
PROPOSED TYPICAL SECTION
STA. 125+00 TO 195+00

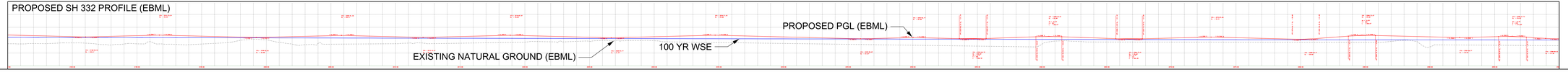


PROPOSED TYPICAL SECTION
STA. 215+00 TO 240+00



PROPOSED TYPICAL SECTION
STA. 267+00 TO 283+00





TEXAS DEPARTMENT OF TRANSPORTATION

REVISED SCHEMATIC 2-26-16

332

PRELIMINARY
SUBJECT TO CHANGE

SCHEMATIC LAYOUT
SH 332

COUNTY: BRAZORIA | CSJ: 1524-01-047
DATE: 2-26-16 | DATE APPROVED: 7-28-93
SHEET NO.: SH 2B | APPROVED: J.D.

TRUE & ASSUMED BEARINGS
PROJECT NORTH
GRID NORTH

LEGEND

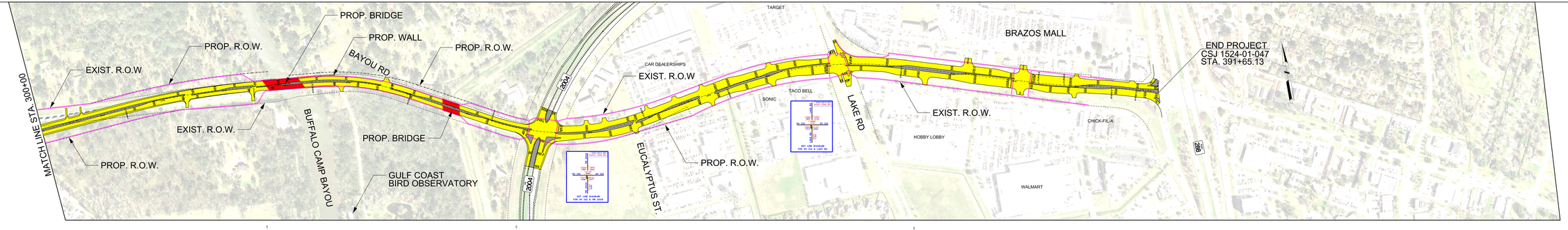
EXISTING	PROPOSED	FUTURE	DESCRIPTION
			RIGHT OF WAY
			PROPERTY LINE
			PROPOSED RIGHT OF WAY
			PROPOSED PROPERTY LINE
			PROPOSED CURB LINE
			PROPOSED EDGE OF PAVEMENT
			CENTERLINE
			CONCRETE
			CONCRETE PAVEMENT
			CONCRETE PAVEMENT REMOVED
			EXISTING CURB RAMP
			EXISTING CURB RAMP REMOVED

COLORFILL LEGEND
PROPOSED PAVEMENT
PROPOSED SECTIONS
BRIDGE

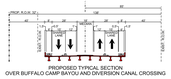
SCALE
1" = 100' 1" = 50' 1" = 20' 1" = 10'

DESIGN CRITERIA

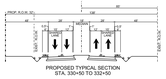
FUNCTIONAL CLASSIFICATION: ARTERIAL
DESIGN CRITERIA: TXDOT DESIGN CRITERIA: MULTILANE RURAL HIGHWAY
DESIGN SPEED: 70 MPH
CR 522 TO STA. 310+00 DESIGN CRITERIA: SUBURBAN ROADWAY
DESIGN SPEED: 45 MPH
STA. 310+00 TO END PROJECT DESIGN CRITERIA: LOW-SPEED URBAN STREET
DESIGN SPEED: 45 MPH



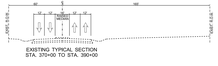
EXISTING TYPICAL SECTION
STA. 125+00 TO 370+00



PROPOSED TYPICAL SECTION
OVER BUFFALO CAMP BAYOU AND DIVERSION CANAL CROSSING

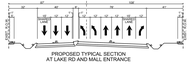


PROPOSED TYPICAL SECTION
STA. 330+55 TO 332+50



EXISTING TYPICAL SECTION
STA. 370+00 TO STA. 390+00

PROPOSED TYPICAL SECTION
STA. 347+00 TO 375+00



PROPOSED TYPICAL SECTION
AT LAKE RD AND MALL ENTRANCE

VICINITY MAP

REVISED SCHEMATIC 2-26-16

PRELIMINARY
SUBJECT TO CHANGE

TEXAS DEPARTMENT OF TRANSPORTATION

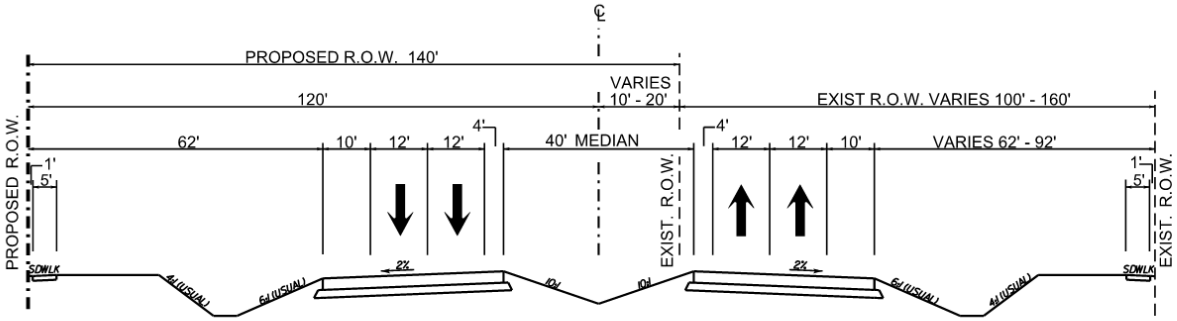
REVISED SCHEMATIC 2-26-16

PRELIMINARY
SUBJECT TO CHANGE

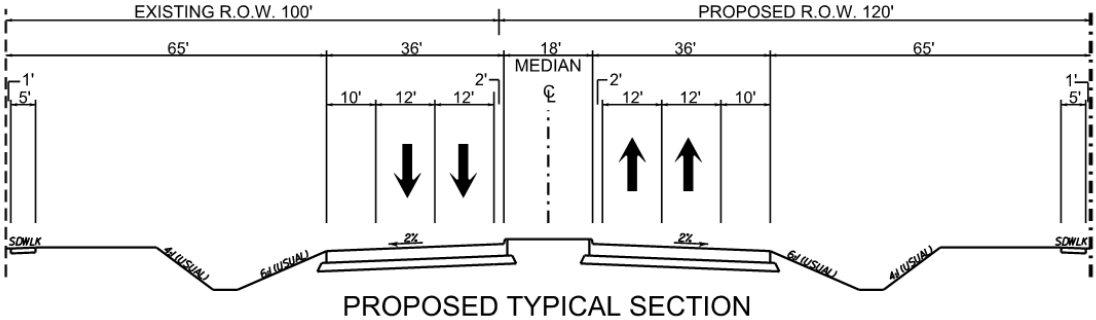
TEXAS DEPARTMENT OF TRANSPORTATION

Appendix D

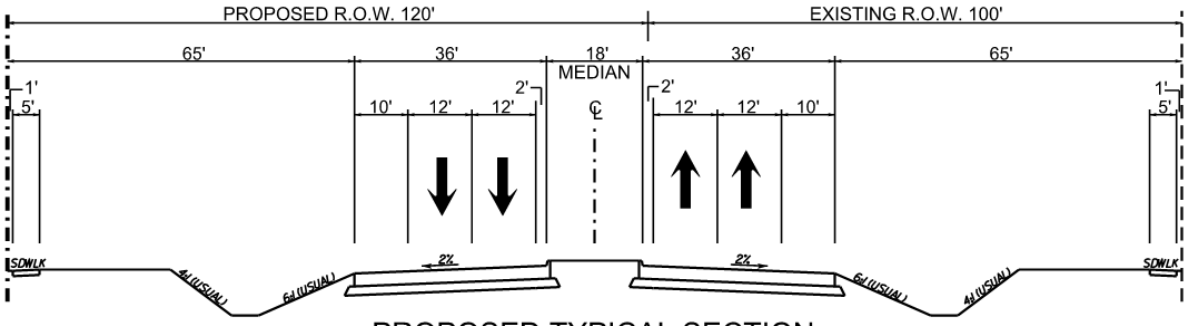
Typical Sections



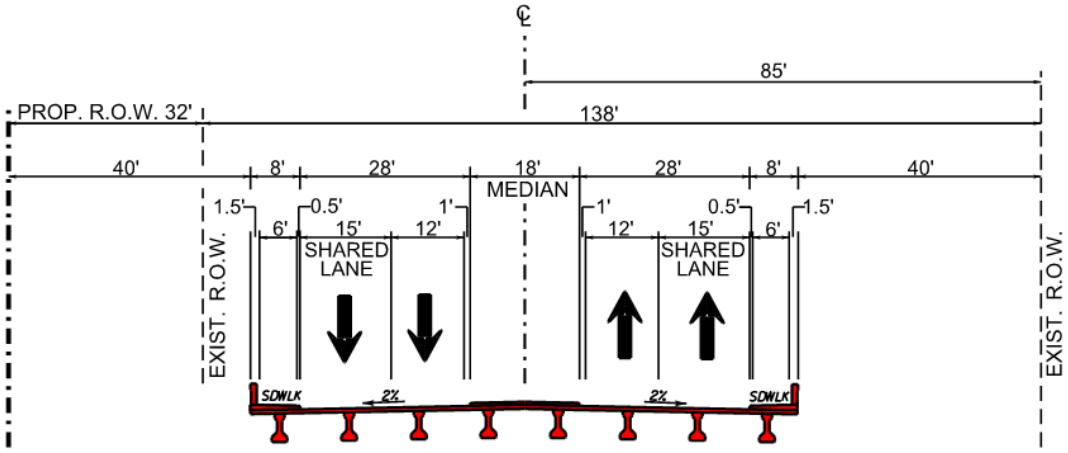
PROPOSED TYPICAL SECTION
STA. 125+00 TO 195+00



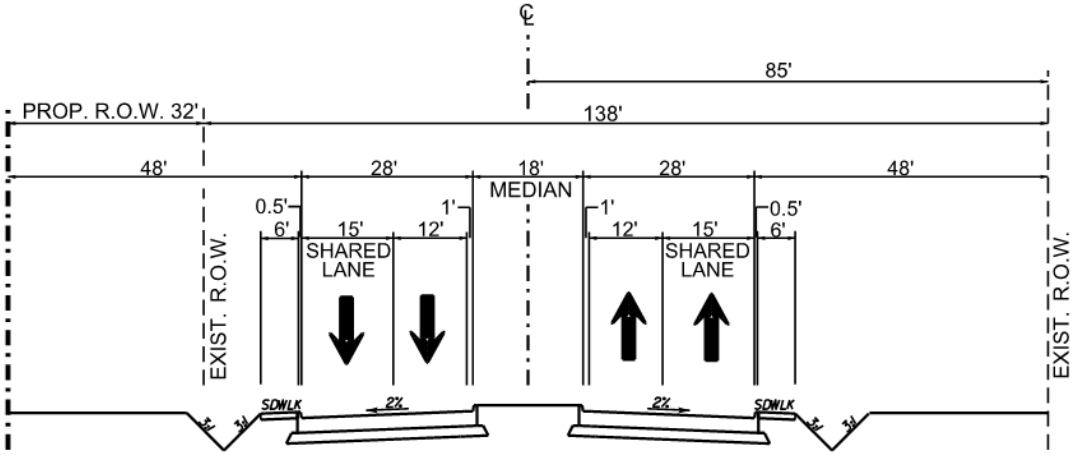
PROPOSED TYPICAL SECTION
STA. 215+00 TO 240+00



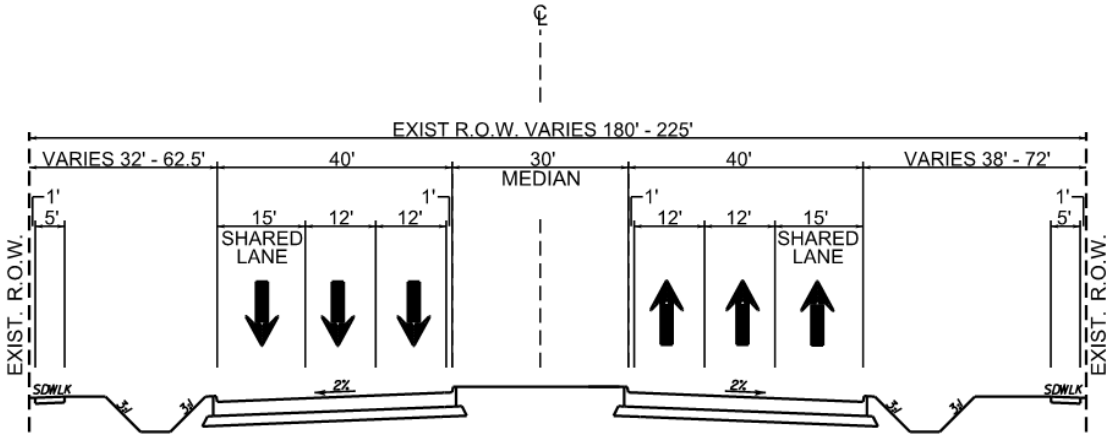
PROPOSED TYPICAL SECTION
STA. 267+00 TO 283+00



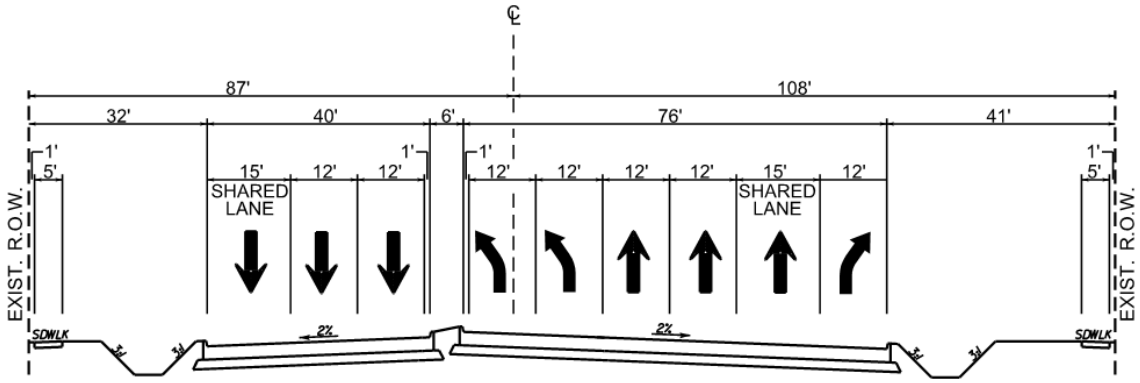
PROPOSED TYPICAL SECTION
OVER BUFFALO CAMP BAYOU AND DIVERSION CANAL CROSSING



PROPOSED TYPICAL SECTION
STA. 330+50 TO 332+50



PROPOSED TYPICAL SECTION
STA. 347+00 TO 375+00



PROPOSED TYPICAL SECTION
AT LAKE RD AND MALL ENTRANCE

Appendix E

Plan and Program Excerpts

2019-2022 TIP
Transportation Improvement Program

METROPOLITAN PLANNING ORGANIZATION

THE HOUSTON-GALVESTON METROPOLITAN PLANNING AREA

www.h-gac.com/taq/tip

2019-2022 Transportation Improvement Program (TIP)

for the Houston-Galveston Metropolitan Planning Area

PUBLIC COMMENT PERIOD:
April 10 – May 9, 2018

PUBLIC MEETING DATE:
April 17, 2018

Adopted by Transportation Policy Council

May 25, 2018

Publication Date

May 25, 2018

http://www.h-gac.com/taq/tip

APPENDIX D -- 2045 RTP, PROJECTS UNDERGOING ENVIRONMENTAL ASSESSMENT

Updated 5/22/2020

MPOID/ CSJ	County	Sponsor*	Facility	From	To	Description	Length (mi)	Fiscal Year
252 0188-04-025	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	SH 35	N OF SH 332	WIDEN FROM 2 TO 4 LANES DIVIDED RURAL ROADWAY WITH INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	3.8	2022
254 0188-06-046	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF JONES CREEK BRIDGE	N OF BRAZOS RIVER DIVERSION CHANNEL	WIDEN FROM 2 TO 4 LANES DIVIDED ROADWAY WITH INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	2.9	2023
255 0188-05-027	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF BRAZORIA	S OF JONES CREEK BRIDGE	WIDEN FROM 2 TO 4 LANES DIVIDED ROADWAY WITH INTERSECTION IMPROVEMENTS, BICYCLE ACCOMMODATIONS AND GRADE SEPARATION AT FM 2004	9.6	2023
256 0188-04-035	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF SH 35	FM 522	RECONSTRUCT TO 4-LANES DIVIDED WITH CONTINUOUS LEFT TURN LANE, INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	2.0	2022
258 3510-02-002	Brazoria	TXDOT HOUSTON DISTRICT	SH 99	SH 288	FORT BEND C/L	SEG C: CONSTRUCT 4-LANES TOLLWAY WITH LIMITED TWO 2-LANE FRONTAGE ROADS AND INTERCHANGES	8.8	2024
512 1003-01-061	Brazoria	TXDOT HOUSTON DISTRICT	FM 523	SH 332	S OF FM 1495	WIDEN FROM 2 TO 4-LANES DIVIDED URBAN	1.2	2025
525 1524-01-047	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	E OF FM 521	SH 288	WIDEN FROM 2 TO 4 LANES (FM521 TO FM 2004) AND WIDEN FROM 4 TO 6 LANES (FM 2004 TO SH 288)	5.2	2025

**Analysis Year - NRS, EREA, and EXEMPT are exempt from conformity or are not considered regionally significant under H-GAC regional emissions analysis.*

**Sponsor - HCTTF are projects recommended by High Capacity Transit Task Force and not included in METRONext.*

Houston-Galveston Area Council

2045 RTP

REGIONAL TRANSPORTATION PLAN

REVISED APRIL 10, 2019

2045RTP.com

APPENDIX 3/D
2045 RTP FISCALLY CONSTRAINED PROJECTS LIST BY COUNTY

2045 RTP PROJECTS LIST BY COUNTY

Updated 05/22/2020

MPOID/ CSJ	County	Sponsor*	Facility	From	To	Description	Length (mi)	Main Lanes	Frontage Lanes	Fiscal Year	Analysis Year*	Total Project Cost (M, YOE)
18023 0598-02-112	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 48		CONSTRUCT GRADE SEPARATION	0.1	(0,4)	n/a	2022	EREA	$ 21.49
18037 0598-02-114	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 64		CONSTRUCT GRADE SEPARATION	0.5	(0,2)	n/a	2035	EREA	$ 22.89
18046 0598-02-116	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 60		CONSTRUCT GRADE SEPARATION	0.1	(0,2)	n/a	2035	EREA	$ 26.24
18197	Brazoria	HCTTF	SH 288	FM 518	VA	NEW PARK AND RIDE IN VICINITY OF SH 288 AND FM 518	0.0	n/a	n/a	2040	EXEMPT	$ 52.14
18401 0598-02-111	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT RODEO PALMS PARKWAY		CONSTRUCT GRADE SEPARATION	0.1	(0,2)	n/a	2022	EREA	$ 19.95
18512 0598-02-126	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	RODEO PALMS PARKWAY	SH 6	CONSTRUCT 2-LANE SOUTHBOUND FRONTAGE ROAD	1.3	(4,4)	(0,2)	2021	NRS	$ 1.70
525 1524-01-047	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	E OF FM 521	SH 288	WIDEN FROM 2 TO 4 LANES (FM521 TO FM 2004) AND WIDEN FROM 4 TO 6 LANES (FM 2004 TO SH 288)	5.2	(2,6)	n/a	2025	NRS	$ 114.00
247 0586-01-048	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	AT FM 523		CONSTRUCT GRADE SEPARATION	1.0	(0,4)	n/a	2035	2040	$ 24.71

**Analysis Year - NRS, EREA, and EXEMPT are exempt from conformity or are not considered regionally significant under H-GAC regional emissions analysis.*

**Sponsor - HCTTF are projects recommended by High Capacity Transit Task Force and not included in METRONext.*

Texas Department of Transportation
125 EAST 11TH STREET | AUSTIN, TEXAS 78701-2483 | (512) 463-8588 | WWW.TXDOT.GOV

July 22, 2020

Transmitted Via E-mail

Mrs. Barbara C. Maley, AICP
Env/Tranp Plan Coord & Air Quality Specialist
Barbara.Maley@dot.gov

Re: Request for Project-Level Conformity Determination
Brazoria County
CSJ 1524-01-047
SH 332: From E of FM 521 to SH 288

Dear Mrs. Maley:

Attached is the copy of the Transportation Conformity Report Form for your review and concurrence.

A project-level conformity determination is requested from you. If you have any questions regarding this project, please contact me at (512) 416-2659.

Sincerely,

DocuSigned by:
Timothy Wood
C9CB724D35CE4BD...

Tim Wood
Air Specialist
Environmental Affairs Division

Attachment(s)

Transportation Conformity Report Form

Project Facility Name: SH 332

MPO Project IDs: 525

Project CSJ Numbers: 1524-01-047

Project Limits

From: E of FM 521

To: SH 288

Project Sponsor: TxDOT

Project Description[1]: SH 332 would be reconstructed and widened from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River, a distance of approximately 1.1 miles.

Date of anticipated environmental decision/re-evaluation: August 2020

Let Year: 2025

ETC[2] Year: 2027

Conformity Year[3]: N/A - non-regionally significant

Total Project Cost: $ 100,898,905.68

Adding Capacity? ☒ Yes ☐ No

Counties: Brazoria

Project Classification: ☐ CE ☒ EA ☐ EIS ☐ Re-evaluation

Important Information

A determination of project-level conformity is not permanent. It is recommended that conformity be checked early and often in the project development process, but that this specific form be coordinated within 60 days of the anticipated environmental decision to avoid coordinating the form more than once. The following events would require a project's conformity determination to be reevaluated.

---

1 Project description, project details, and other project information should include enough detail in order to make a determination of project consistency with the MTP, TIP, STIP, and corresponding transportation conformity determination.

2 The ETC or estimated time of completion year is the date the entire project as described in the environmental review document will be open to traffic.

3 If this project is NOT considered regionally significant by the MPO, enter "N/A – non-regionally significant". In addition, note that the conformity year is sometimes referred to as the network year. When a MTP identifies a specific timeframe during which a project will be operational, the last year of that timeframe is the conformity year.

1. Changes to the project's design concept, scope, limit, funding, or estimated time of completion (ETC) year

2. Changes to the project's listing in the MTP, TIP, or STIP related to design concept, scope and limits; funding or ETC year

3. New conformity determinations on the applicable MTP, TIP, or STIP (even if it occurs after the FHWA/FTA project-level conformity determination has been made)

In particular, if there is a planned MTP update/amendment and associated transportation conformity determination expected to be completed on or near the time of project approval, it is recommended that the project sponsor prepare this conformity determination after the plan update/amendment and associated transportation conformity determination is completed, if the update/amendment will affect the project as specified in item 1 above. Consult with ENV air specialist if further assistance is needed.

Instructions

Check the appropriate box for each question, using the most current information available, and be aware that the answers will dictate which questions must be answered for each specific project. Start with Step One, and follow the instructions included in each step, if any additional instructions are provided.

The information displayed between carets, <like this> represents a field that should be customized with project specific information. In the electronic file, these fields are highlighted in grey. Content prompts, like ***Choose an item***, represent dropdown menus, which also must be customized with project specific information.

If the form requires the preparer to "STOP" because something is lacking, then it is recommended that the time it would take to make the necessary changes to the MTP, TIP, or project should be re-evaluated against the project's proposed letting date (i.e., letting date may need to be adjusted).

Step 1: Is this a federal project with a federal lead other than FHWA/FTA?

☐ **Yes – STOP. Transportation conformity does not apply to the project, however, general conformity may apply.**

Consult the ENV air specialist regarding this project and potential general conformity requirements.

☒ No – Continue to Step 2.

Step 2: Is this a FHWA/FTA project[4]?

☒ Yes – Proceed to Step 4.

☐ No – Continue to Step 3.

Step 3: Is this project considered regionally significant[5] in accordance with 40 CFR 93.101 or 30 TAC 114.260(d)(2)(iv)?

[4] Note that this includes projects which may not have federal funding but would otherwise require federal approval.

[5] If a project is on the MPO's NON-regionally significant project list, it is not regionally significant. Each MPO may have different criteria for designating a project as regionally significant.

☐ Yes – Continue to Step 4.

☐ No – **STOP. In accordance with 40 CFR 93.102(a)(2), a project level transportation conformity determination is not required for non-regionally significant, non-FHWA/FTA projects.**

Step 4: Is the project located in a nonattainment or maintenance area6 for ozone7, nitrogen dioxide (NO2), carbon monoxide (CO), particulate matter (PM2.5 or PM10)?

☒ Yes – **Transportation conformity rules apply.** The project is located in the EPA designated Brazoria County **serious** nonattainment[8] area for **2008** ozone and marginal nonattainment for 2015 ozone. Continue to Step 5.

☐ No – **STOP. Transportation conformity does not apply to the project.**

Step 5: Is the project exempt[9] from conformity in accordance with 40 CFR 93.126[10] or 40 CFR 93.128[11]?

☐ Yes – **STOP. Transportation conformity does not apply to the project.** This project falls under the following exemption: ***Choose an item.***

☒ No – Continue to Step 6.

Step 6: Is the project exempt from the regional conformity analysis in accordance with 40 CFR 93.127?

☐ Yes – **The project is exempt from regional conformity requirements.** This project falls under the following exemption: ***Choose an item.*** Proceed to Step 16.

☒ No – Continue to Step 7.

Step 7: Does the project fall within the boundaries[12] of an MPO?

☒ Yes – Proceed to Step 9.

☐ No – Continue to Step 8.

---

[6] If unsure about the nonattainment or maintenance status, it can be checked in multiple locations, including: the EPA Greenbook, the TCEQ website, or the applicable table in the Air Quality toolkit.

[7] Note the 1997 ozone standard was revoked by EPA.

[8] Area classifications can be either maintenance, marginal nonattainment, moderate nonattainment, serious nonattainment, severe nonattainment, or extreme nonattainment

[9] Most added capacity projects will not be exempt, whereas most non-added capacity projects will be exempt.

[10] Ultimately, the interpretation of what projects types meet these exemption criteria is under the purview of the federal lead agency. For example, although it could be interpreted to meet some of the exemption project types, a project changing from general purpose to managed lanes is NOT considered to be exempt from conformity.

[11] Grouped CSJ projects, by rule, must be exempt under these criteria.

[12] i.e., within a Metropolitan Planning Area (MPA)

Step 8: Is the project design concept, scope and limits, conformity analysis year, and funding consistent with an approved[13] regional conformity analysis for an isolated rural area that meets the requirements of 40 CFR 93.109?

☐ Yes – **The project is consistent with an approved regional conformity determination that meets the requirements of 40 CFR 93.109 for isolated rural areas.** Proceed to Step 16.

☐ No **– STOP. The project is not consistent with a regional conformity determination for an isolated rural area. TxDOT will not take final action until the project is consistent with an approved regional conformity determination that meets the requirements of 40 CFR 93.109 for isolated rural areas.**

Do not sign this form. Please ensure that the project is included in and consistent with an approved regional conformity determination then reevaluate the project using this form.

Step 9: Are all of the project phases[14] for the entire project described in the environmental document included in the fiscally constrained portion of the MTP?

☒ Yes – Continue to Step 10.

☐ No **– STOP. The project was not included in the area's regional conformity determination, and, therefore, is not consistent with it.** The MTP needs to be amended to include this project and a new conformity determination needs to be made on the MTP before consistency can be determined for the project, or the project needs to be revised to be consistent with the existing MTP.

Consult with the district TP&D and MPO on how to proceed.

Step 10: Is at least one phase of the project beyond the NEPA study (corridor study) included in either the appropriate year of the conforming TIP[15] or in Appendix D (if will not be let within the timeframe of the TIP)?

☒ Yes – Continue to Step 11.

☐ No **– STOP. The project is not included in the conforming TIP and is therefore not consistent with it.** At least one phase of the project must be added to the conforming TIP before consistency can be determined.

Consult with the district TP&D and MPO on how to proceed.

[13] The consultation partners are responsible for approving regional conformity analyses.

[14] A project phase is a separate portion of a project such as: NEPA study, ROW acquisition, final design, construction, and/or partial construction.

[15] In Texas, a conforming TIP is one that has been included into the STIP, so projects must be in the STIP in order to show that they come from a conforming TIP.

Step 11: Are the current project limits the same[16] or do they fall within the project limits listed in the MTP and STIP?

☒ Yes – Continue to Step 12.

☐ No – **STOP. The project is not consistent with the conforming MTP and TIP**. Either the MTP and TIP, or the project needs to be revised before consistency can be **determined.**

Consult with the district TP&D and MPO on how to proceed.

Step 12: Is the activity being proposed the same as that in the MTP and STIP project description in both type[17] of facility and number[18] of lanes?

☒ Yes – Continue to Step 13.

☐ No – **STOP. The project is not consistent with the conforming MTP and TIP.** Either the MTP and TIP, or the project needs to be revised before consistency can be determined.

Consult with the district TP&D and MPO on how to proceed.

Step 13: Does the project's ETC year fall between its identified conformity year[19] in the MTP and the previous conformity year identified in the MTP?

☐ Yes – Continue to Step 14.

☐ No – **STOP. The project is not consistent with the conforming MTP and TIP.** Either the MTP and TIP or the project needs to be revised before consistency can be determined.

Consult with the district TP&D and MPO on how to proceed.

☒ N/A – This project is non-regionally significant. Continue to Step 14.

Step 14: Is the estimated total project cost or the cost identified in the MTP greater than $1,500,000?

☒ Yes – Proceed to Step 15.

☐ No – Fiscal constraint requirements do not apply. This project is consistent with the currently conforming MTP and TIP. Proceed to Step 16.

---

[16] The limits are considered the same if the logical termini noted in the environmental document fall within the limits of the project noted in the MTP or the logical termini noted in the environmental document are not significantly greater (~1mile) than the limits noted in the MTP due to transition areas for safety or other factors required to be considered when establishing logical termini for environmental document purposes.

[17] The type of activity refers to the type of enhancement, such as: main lanes, frontage roads, HOV lanes, direct connectors, bridge replacement, etc…

[18] The number refers to the amount of each activity type, such as: number of main lanes or number of frontage lanes.

[19] For the purposes of this determination, the term conformity year is synonymous with the network analysis year for the MTP.

Step 15: Does the estimated project cost exceed what is contained in the MTP by more than 50%[20]?

☐ Yes – **STOP. The project is not consistent with the MTP and TIP because it is not fiscally constrained.** Either the MTP and TIP, or the project needs to be revised before consistency can be determined or a case-by-case decision will need to be made by FHWA.

Consult with the district TP&D and MPO on how to proceed.

☒ No – **This project is consistent with the currently conforming MTP and TIP**. Continue to Step 16.

Step 16: Is the project located in either a CO, $PM_{2.5}$, or PM_{10} nonattainment or maintenance area?[21]

☐ Yes – Continue to Step 17.

☒ No – **Hot-spot conformity requirements do not apply.** Proceed to Step 21.

Step 17: Is this a state or local project with NO federal funding and NO federal decision required?

☐ Yes – **Hot-spot conformity requirements do not apply.** Proceed to Step 21.

☐ No – **Hot-spot conformity requirements apply.** Request the local MPO to initiate a consultation call with the Consultation Partners.

Fill out the Hot-Spot Analysis Data for a Consultation Partner Decision Form to present the project data to the Consultation Partners for review prior to the consultation call.

Continue to Step 18.

Step 18: Did the consultation partners determine that this is a project of air quality concern (POAQC)?

☐ Yes – **A hot-spot analysis is required and must be approved by the consultation partners.**

Conduct a hot-spot analysis in accordance with the methodology approved by the consultation partners, and use the applicable EPA hot-spot guidance.

Continue to Step 19.

☐ No – **A hot-spot analysis is not required because the project is not a POAQC. The consultation partners made this determination on <insert date>.**

Proceed to Step 21.

[20] Multiply the MTP cost by 1.5. The current estimated total project cost should not exceed this amount.

[21] Note that this currently only applies to projects in El Paso.

Step 19: Does the approved hot-spot analysis verify that the project will not cause, contribute to, or worsen a violation of applicable CO, $PM_{2.5}$, or PM_{10} NAAQS or that the project will at least improve conditions from that of the no-build alternative?

☐ Yes – **The project is not anticipated to cause, contribute to, or worsen a violation of the applicable NAAQS.** Continue to Step 20.

☐ **No – STOP. The project, as it is currently presented, does not comply with conformity requirements because it is anticipated to cause, contribute to, or worsen a violation of the applicable NAAQS.**

Identify and get consultation partner agreement upon mitigation measures to offset project impacts to air quality. Reevaluate this project using this form once these mitigation measures have been identified and committed to.

Step 20: Have all the agreed upon mitigation measures as well as any applicable SIP control measures received a written commitment?

☐ Yes – Continue to Step 21.

☐ **No – STOP.**

Do not proceed until there are written commitments to implement all the agreed upon mitigation measures and any applicable SIP control measures. Reevaluate this project using this form once these commitments have been made in writing.

☐ N/A because no mitigation is required and there are no applicable SIP control measures which affect this project, Continue to Step 21.

Step 21: The transportation conformity evaluation is complete.

Attach applicable pages of the MTP and TIP, or the STIP, project schematics, typical sections, hot-spot analyses and determinations, and any conformity related public comment and response. Implement the following processing instructions as applicable.

☐ This is a regionally significant State-only project with no FHWA/FTA action required (the answer to Steps 3 is yes); therefore:

Submit this form to the ENV air specialist. If ENV concurs that all project level conformity requirements have been met, ENV shall sign the form below. Coordination with FHWA/FTA is not required.

Retain this form in the project file.

☒ This is a FHWA/FTA non-exempt project (the answer to Steps 2 and 4 is yes, and the answer to Steps 5 and 6 is no); therefore:

Submit this form to the ENV air specialist. After ENV air specialist review, ENV will coordinate this form with FHWA/FTA for a project level conformity determination. If FHWA/FTA agrees that all project level conformity requirements have been met, they shall sign the project level conformity determination line below. A project level conformity determination is not complete and project clearance cannot be given until FHWA/FTA signs this form.

Retain this form and any coordination with FHWA/FTA in the project file.

Transportation Conformity Report Form

TxDOT ENV Transportation Conformity Validation Complete:

Project CSJ Numbers: 1524-01-047

Signature DocuSigned by: Timothy Wood C9CB724D35CE4BD...

Name: Timothy Wood

Title: Environmental Specialist

Date: 7/22/2020

FHWA/FTA Determination of the Project-level Conformity:

Signature BARBARA C MALEY Digitally signed by BARBARA C MALEY Date: 2020.07.23 18:01:10 -05'00'

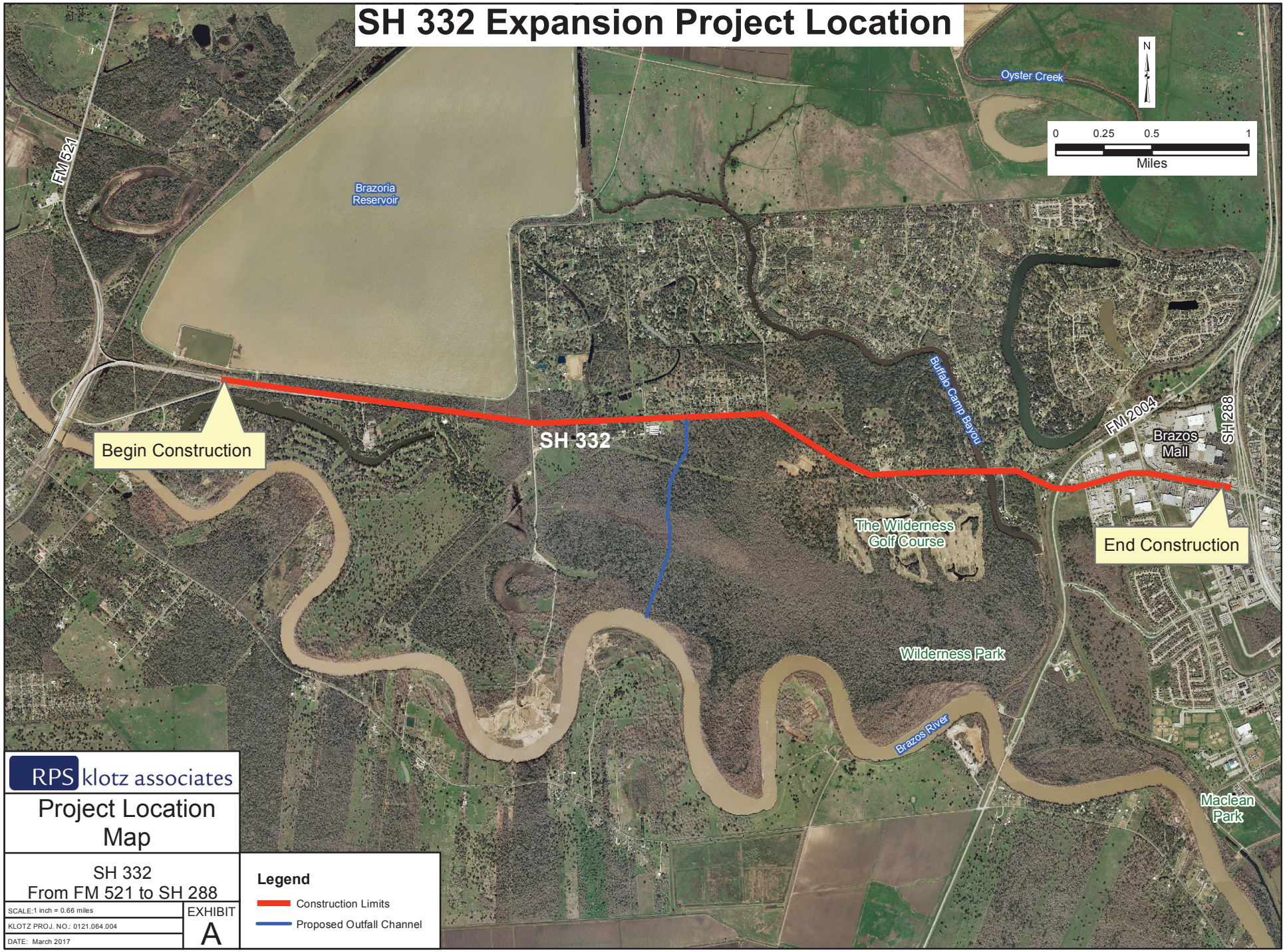
Name:

Title: Air Quality Specialist and Transportation Planner

Date:

NOTE: FHWA project-level conformity determination is based upon clarification provided by TxDOT (attached).

SH 332 Expansion Project Location



2045 RTP PROJECTS LIST BY COUNTY

Updated 05/22/2020

MPOID/ CSJ	County	Sponsor*	Facility	From	To	Description	Length (mi)	Main Lanes	Frontage Lanes	Fiscal Year	Analysis Year*	Total Project Cost (M, YOE)
18023 0598-02-112	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 48		CONSTRUCT GRADE SEPARATION	0.1	(0,4)	n/a	2022	EREA	$ 21.49
18037 0598-02-114	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 64		CONSTRUCT GRADE SEPARATION	0.5	(0,2)	n/a	2035	EREA	$ 22.89
18046 0598-02-116	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT CR 60		CONSTRUCT GRADE SEPARATION	0.1	(0,2)	n/a	2035	EREA	$ 26.24
18197	Brazoria	HCTTF	SH 288	FM 518	VA	NEW PARK AND RIDE IN VICINITY OF SH 288 AND FM 518	0.0	n/a	n/a	2040	EXEMPT	$ 52.14
18401 0598-02-111	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	AT RODEO PALMS PARKWAY		CONSTRUCT GRADE SEPARATION	0.1	(0,2)	n/a	2022	EREA	$ 19.95
18512 0598-02-126	Brazoria	TXDOT HOUSTON DISTRICT	SH 288	RODEO PALMS PARKWAY	SH 6	CONSTRUCT 2-LANE SOUTHBOUND FRONTAGE ROAD	1.3	(4,4)	(0,2)	2021	NRS	$ 1.70
525 1524-01-047	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	E OF FM 521	SH 288	WIDEN FROM 2 TO 4 LANES (FM521 TO FM 2004) AND WIDEN FROM 4 TO 6 LANES (FM 2004 TO SH 288)	5.2	(2,6)	n/a	2025	NRS	$ 114.00
247 0586-01-048	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	AT FM 523		CONSTRUCT GRADE SEPARATION	1.0	(0,4)	n/a	2035	2040	$ 24.71

**Analysis Year - NRS, EREA, and EXEMPT are exempt from conformity or are not considered regionally significant under H-GAC regional emissions analysis.*

**Sponsor - HCTTF are projects recommended by High Capacity Transit Task Force and not included in METRONext.*

APPENDIX D -- 2045 RTP, PROJECTS UNDERGOING ENVIRONMENTAL ASSESSMENT

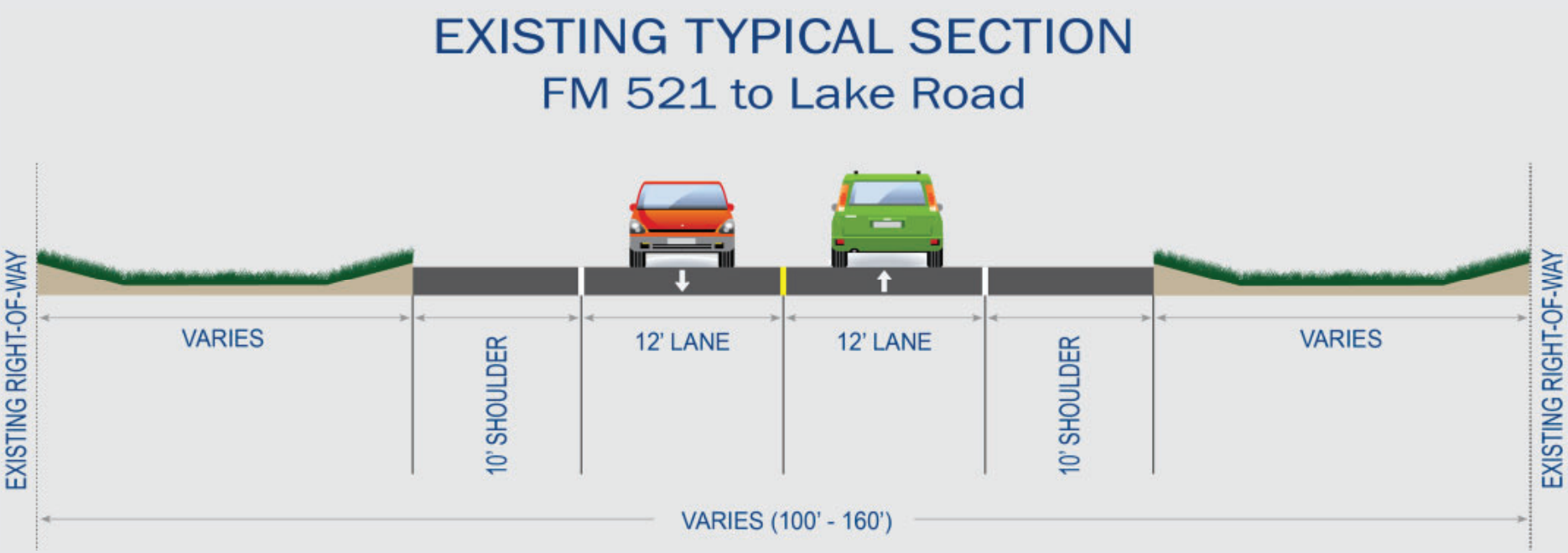
Updated 5/22/2020

MPOID/ CSJ	County	Sponsor*	Facility	From	To	Description	Length (mi)	Fiscal Year
252 0188-04-025	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	SH 35	N OF SH 332	WIDEN FROM 2 TO 4 LANES DIVIDED RURAL ROADWAY WITH INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	3.8	2022
254 0188-06-046	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF JONES CREEK BRIDGE	N OF BRAZOS RIVER DIVERSION CHANNEL	WIDEN FROM 2 TO 4 LANES DIVIDED ROADWAY WITH INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	2.9	2023
255 0188-05-027	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF BRAZORIA	S OF JONES CREEK BRIDGE	WIDEN FROM 2 TO 4 LANES DIVIDED ROADWAY WITH INTERSECTION IMPROVEMENTS, BICYCLE ACCOMMODATIONS AND GRADE SEPARATION AT FM 2004	9.6	2023
256 0188-04-035	Brazoria	TXDOT HOUSTON DISTRICT	SH 36	S OF SH 35	FM 522	RECONSTRUCT TO 4-LANES DIVIDED WITH CONTINUOUS LEFT TURN LANE, INTERSECTION IMPROVEMENTS AND BICYCLE ACCOMMODATIONS	2.0	2022
258 3510-02-002	Brazoria	TXDOT HOUSTON DISTRICT	SH 99	SH 288	FORT BEND C/L	SEG C: CONSTRUCT 4-LANES TOLLWAY WITH LIMITED TWO 2-LANE FRONTAGE ROADS AND INTERCHANGES	8.8	2024
512 1003-01-061	Brazoria	TXDOT HOUSTON DISTRICT	FM 523	SH 332	S OF FM 1495	WIDEN FROM 2 TO 4-LANES DIVIDED URBAN	1.2	2025
525 1524-01-047	Brazoria	TXDOT HOUSTON DISTRICT	SH 332	E OF FM 521	SH 288	WIDEN FROM 2 TO 4 LANES (FM521 TO FM 2004) AND WIDEN FROM 4 TO 6 LANES (FM 2004 TO SH 288)	5.2	2025

**Analysis Year - NRS, EREA, and EXEMPT are exempt from conformity or are not considered regionally significant under H-GAC regional emissions analysis.*

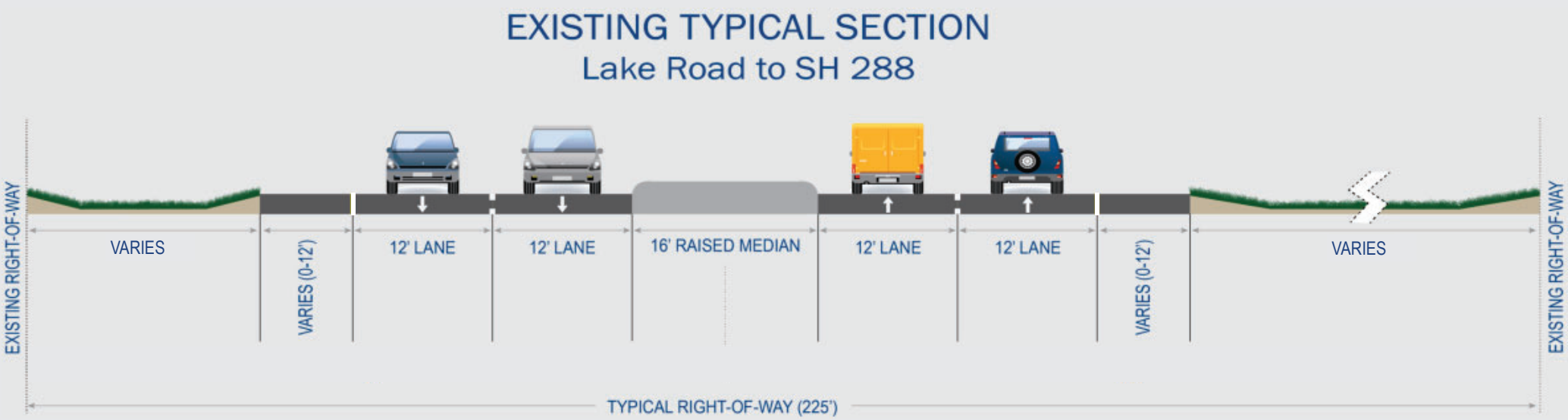
**Sponsor - HCTTF are projects recommended by High Capacity Transit Task Force and not included in METRONext.*

Existing Typical Section: FM 521 to Lake Road



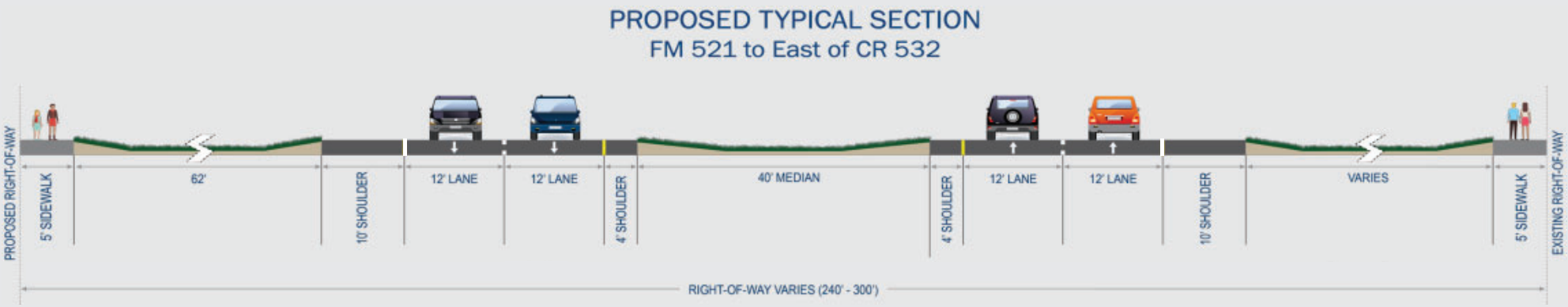
- Two undivided 12-foot wide travel lanes (one in each direction)
- 10-foot wide outside shoulders
- Open ditches
- Typical right-of-way width varies between 100 feet and 160 feet

Existing Typical Section: Lake Road to SH 288



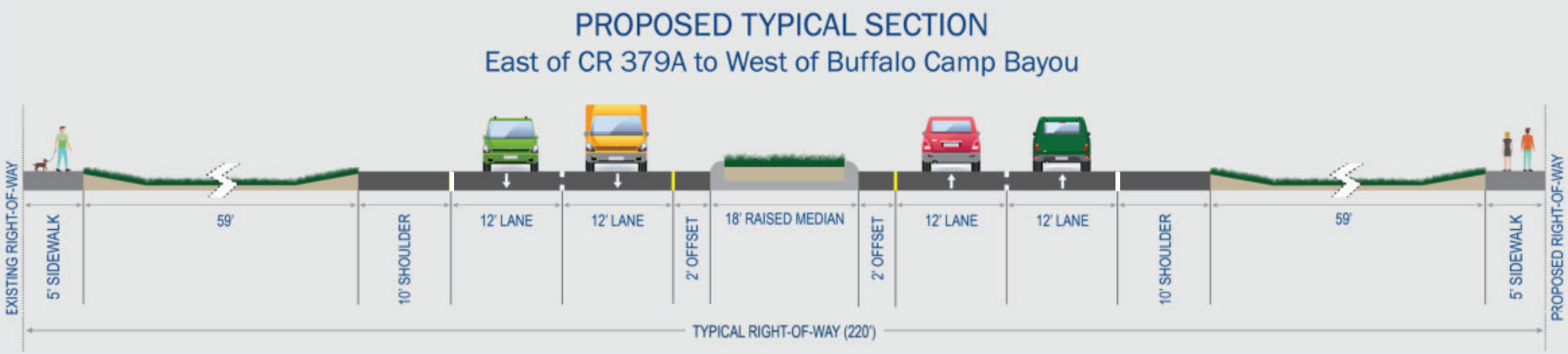
- Four 12-foot wide travel lanes (two in each direction)
- Outside shoulder width varies
- Divided by 16-foot wide raised median
- Open ditches
- Right-of-way width of 225 feet

Proposed Typical Section: FM 521 to East of CR 532



- Four 12-foot wide travel lanes (two in each direction)
- Divided by 40-foot wide depressed grass median
- 10-foot wide outside shoulders
- Open ditches
- Typical right-of-way width varies between 240 feet and 300 feet

Proposed Typical Section: East of CR 379A to Buffalo Camp Bayou



- Four 12-foot wide travel lanes (two in each direction)
- 18-foot wide raised median
- 10-foot wide outside shoulders
- Open ditches
- Right-of-way width of 220 feet.

Proposed Typical Section: FM 2004 to SH 288

- Six travel lanes (three in each direction)
- 30-foot wide raised median
- Four 12-foot wide inside travel lanes and two 15-foot wide outside shared travel lane
- Open ditches
- Typical right-of-way width varies between 180 feet and 225 feet

CLARIFICATION

Maley, Barbara (FHWA)

From: Tim Wood <Tim.Wood@txdot.gov>
Sent: Thursday, July 23, 2020 4:02 PM
To: Maley, Barbara (FHWA)
Cc: Campos, Jose (FHWA)
Subject: RE: Conformity Report Form for SH 332 (1524-01-047)
Attachments: 1 Project Location Map 7-23-2020.pdf

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Please see the refined location map (attached).

Thanks.

Tim Wood
TxDOT ENV
512-416-2659

From: Maley, Barbara (FHWA) [mailto:Barbara.Maley@dot.gov]
Sent: Thursday, July 23, 2020 9:06 AM
To: Tim Wood <Tim.Wood@txdot.gov>
Cc: Campos, Jose (FHWA) <Jose.Campos@dot.gov>
Subject: FW: Conformity Report Form for SH 332 (1524-01-047)

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Tim:
To continue our review/comment, we will need an enhanced project location map that includes labeling for:

Lake Road – typical section reference (pp. 13, 14)
CR 532 – typical section reference (p. 15)
CR 379A – typical section reference (p. 16)

Also, please provide the distance b/w 'begin construction' and FM 521.

Thanks.

Signed,
Barbara Maley
214.224.2175

From: Tim Wood <Tim.Wood@txdot.gov>
Sent: Wednesday, July 22, 2020 3:35 PM
To: Maley, Barbara (FHWA) <Barbara.Maley@dot.gov>

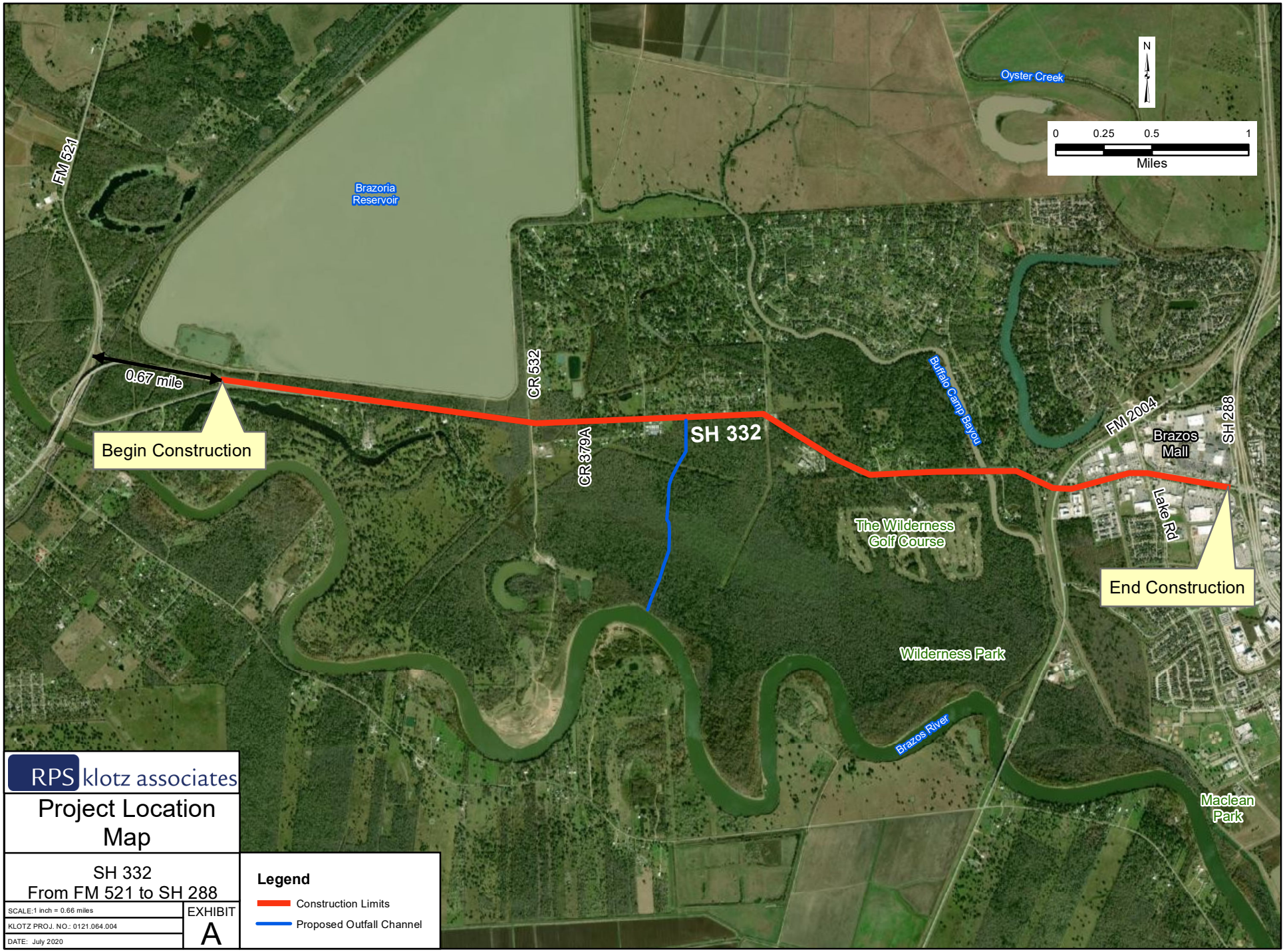
Cc: Campos, Jose (FHWA) <Jose.Campos@dot.gov>
Subject: Conformity Report Form for SH 332 (1524-01-047)

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Please review and respond to the attached conformity report form for SH 332 from E of FM 521 to SH 288 (CSJ 1524-01-047).

Thank you.

Tim Wood
TxDOT ENV
512-416-2659



RPS klotz associates

Project Location Map

SH 332
From FM 521 to SH 288

SCALE:1 inch = 0.66 miles

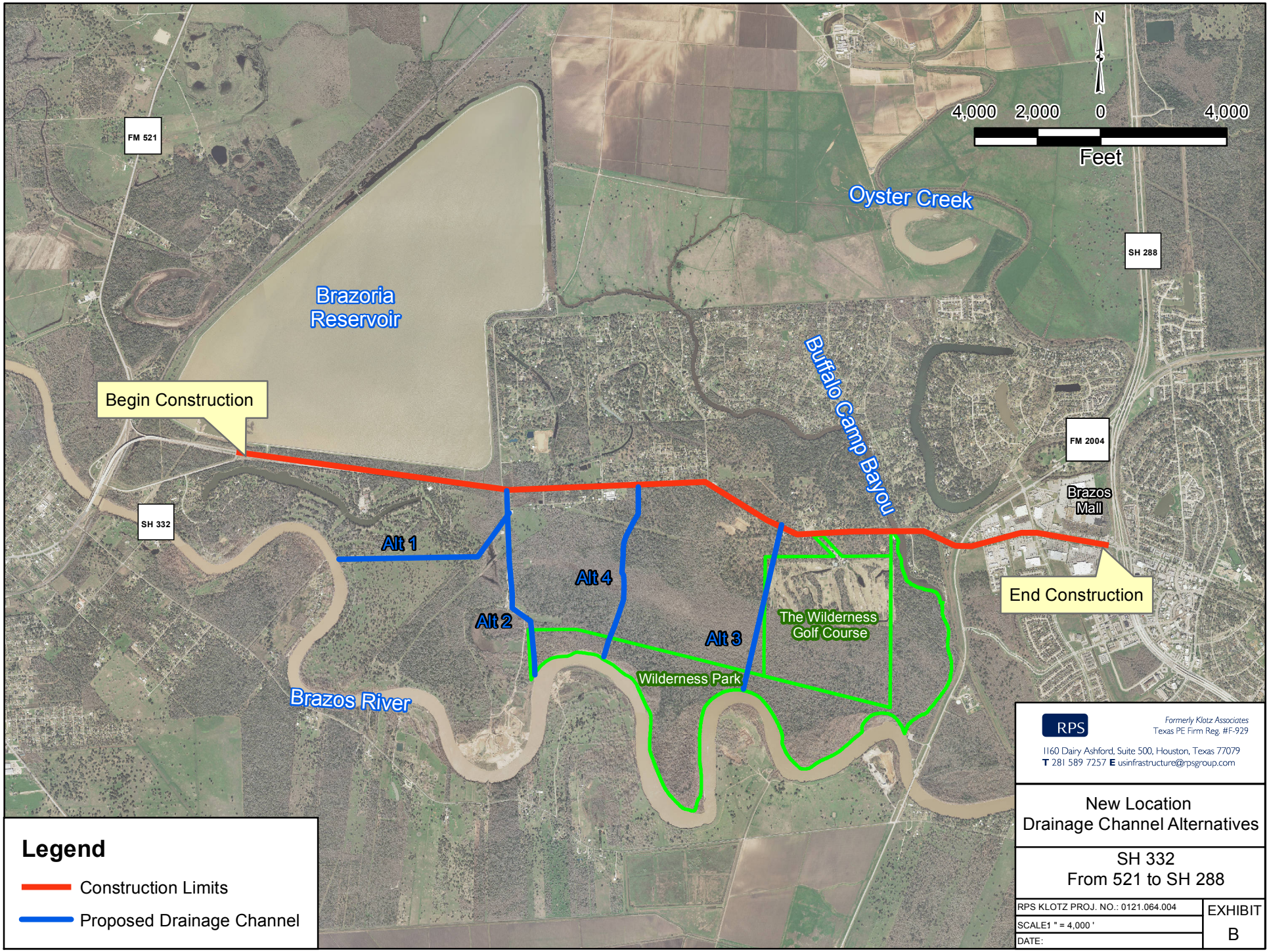
KLOTZ PROJ. NO.: 0121.064.004

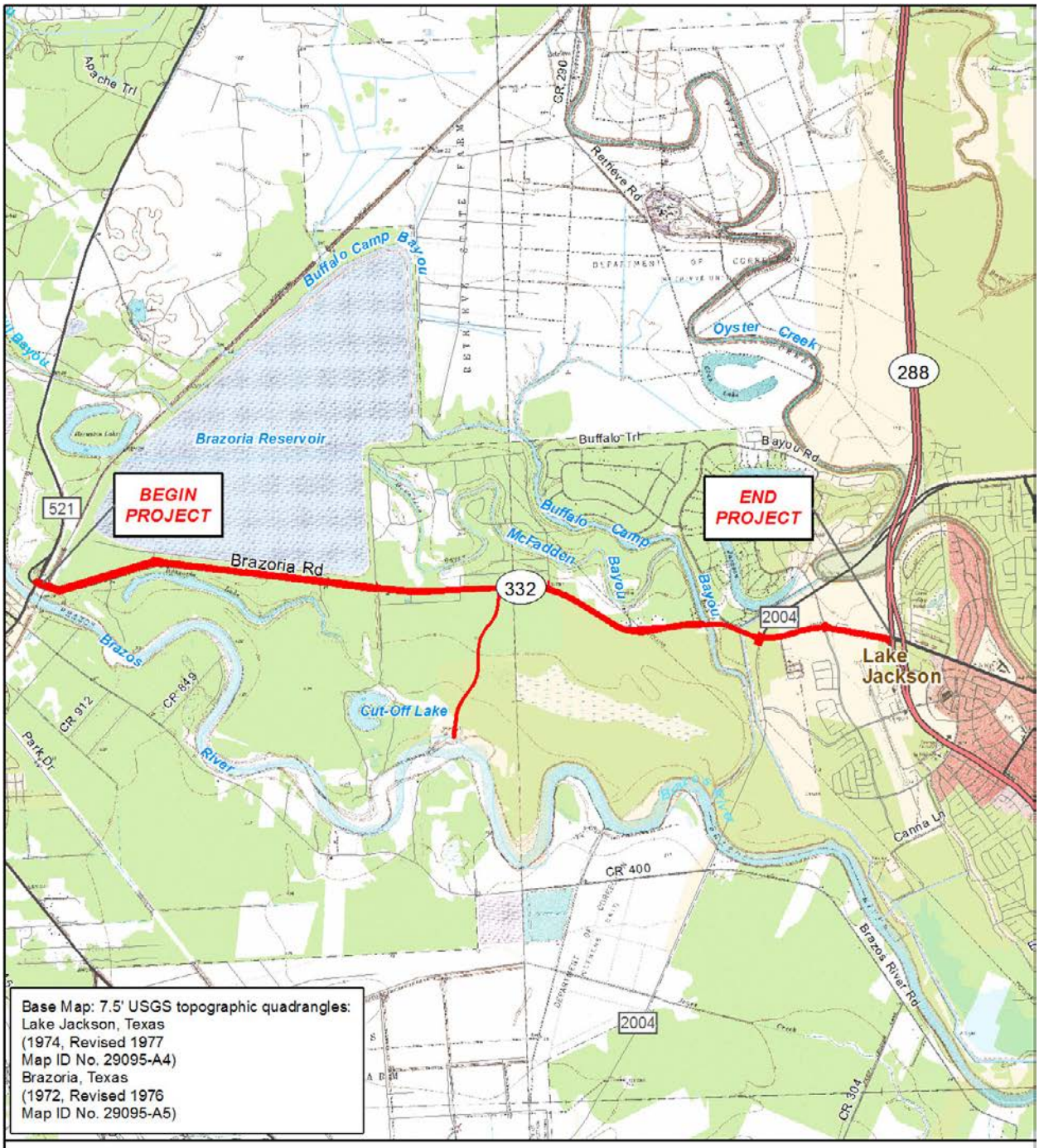
DATE: July 2020

EXHIBIT A

Appendix F

Resource-Specific Maps


N
4,000 2,000 0 4,000
Feet
FM 521
Oyster Creek
SH 288
Brazoria Reservoir
Buffalo Camp Bayou
Begin Construction
FM 2004
Brazos Mall
SH 332
Alt 1
Alt 4
End Construction
Alt 2
The Wilderness Golf Course
Alt 3
Wilderness Park
Brazos River
Legend
Construction Limits
Proposed Drainage Channel
RPS
Formerly Klotz Associates
Texas PE Firm Reg. #F-929
1160 Dairy Ashford, Suite 500, Houston, Texas 77079
T 281 589 7257 E usinfrastructure@rpsgroup.com
New Location
Drainage Channel Alternatives
SH 332
From 521 to SH 288
RPS KLOTZ PROJ. NO.: 0121.064.004
SCALE1 " = 4,000 '
DATE:
EXHIBIT
B



Project Area

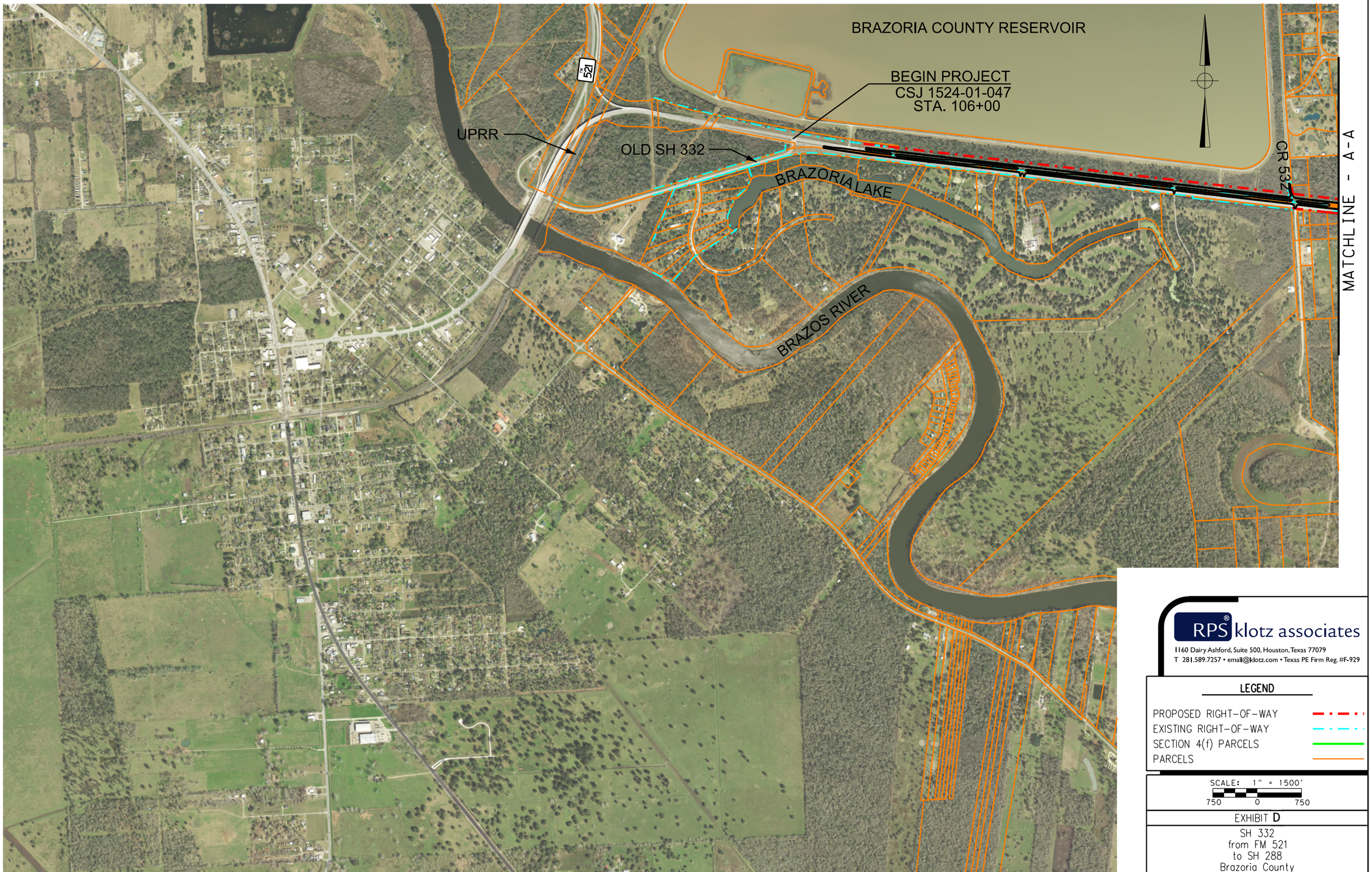
N
W E
S

1:72,000

0 0.25 0.5 1 1.5
Miles

Exhibit C

Project Location on USGS Topographic Base
SH 332
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047



RPS® klotz associates

1160 Dairy Ashford, Suite 500, Houston, Texas 77079
T 281.589.7257 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

PROPOSED RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
SECTION 4(f) PARCELS
PARCELS

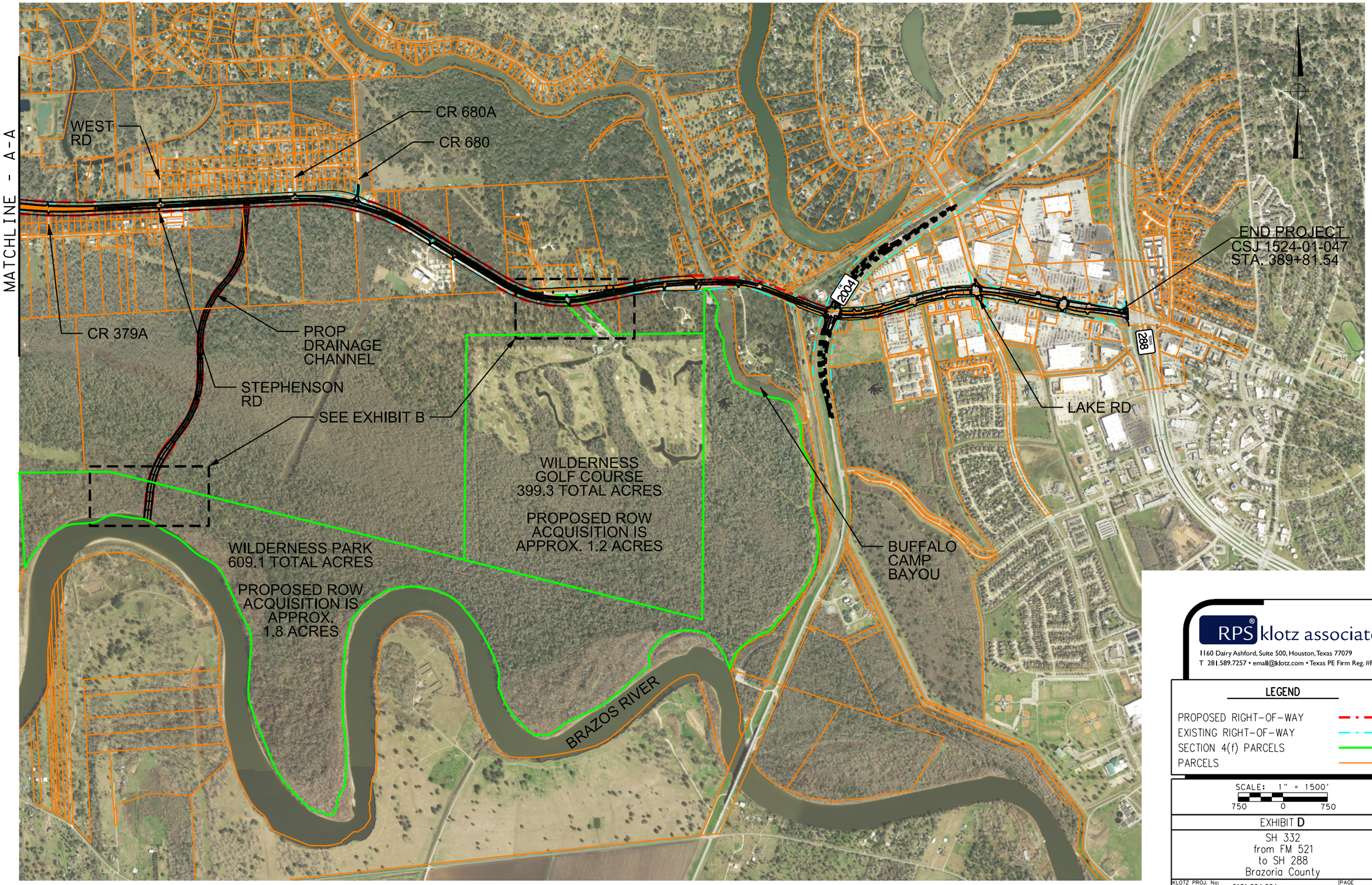
SCALE: 1" = 1500'
750 0 750

EXHIBIT D

SH 332
from FM 521
to SH 288
Brazoria County

KLOTZ PROJ. No:	0121.064.004	PAGE
DATE:	MAY 2016	D-1

5/27/2016 10:58:46 AM
J:\0121.064.004\07.00 CADD\SH332\CADD\10-IX Environmental Issues\SH332*4f Exhibit 1.dgn



RPS klotz associates
1160 Dairy Ashford, Suite 500, Houston, Texas 77079
T 281.589.7257 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- SECTION 4(f) PARCELS
- PARCELS

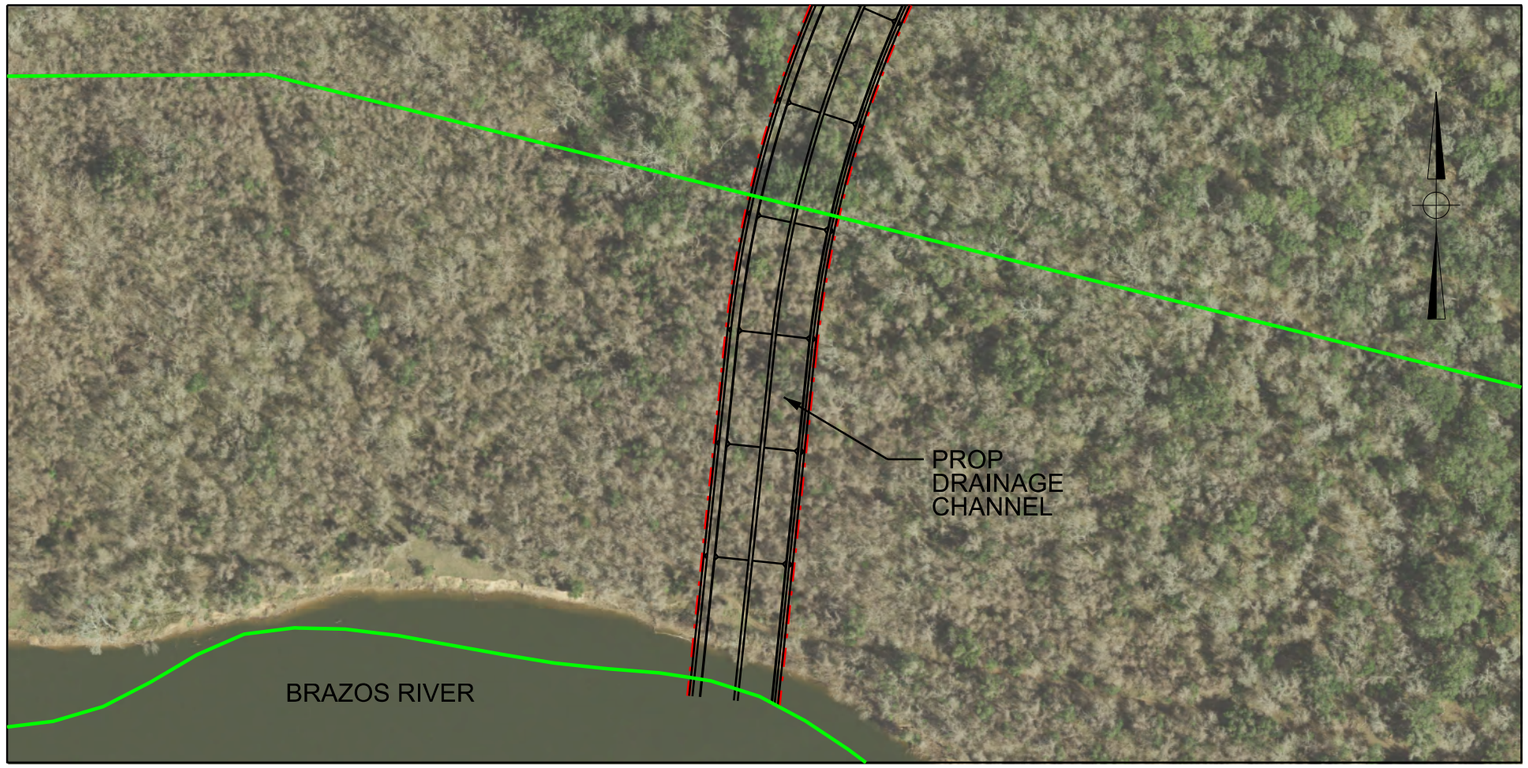
SCALE: 1" = 1500'
750 0 750

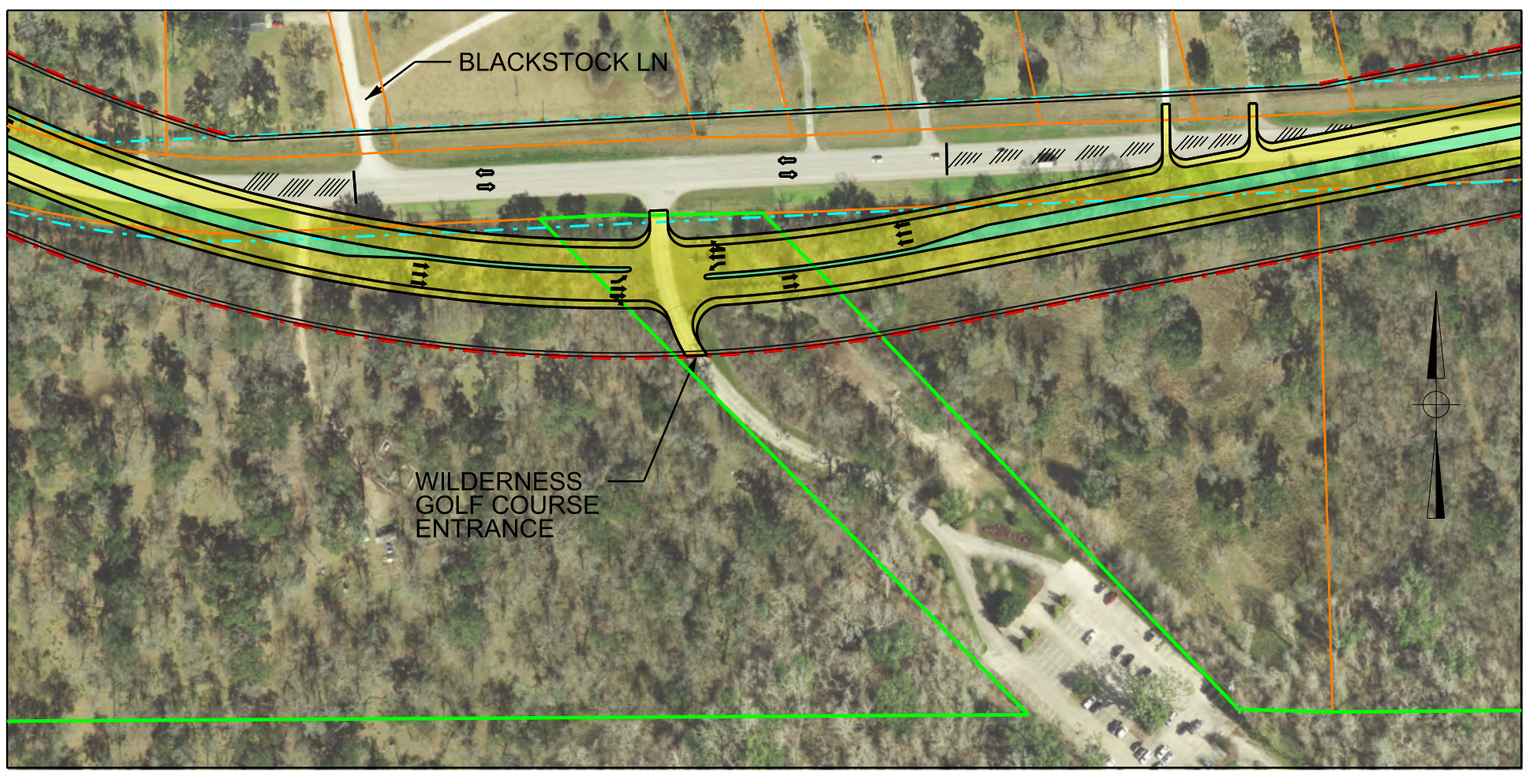
EXHIBIT **D**

SH 332
from FM 521
to SH 288
Brazoria County

KLOTZ PROJ. No:	0121.064.004	PAGE D-2
DATE:	MAY 2016	

5/27/2016 10:25:09 AM
J:\0121.064.004\07.00 CADD\SH332\CADD\10-IX Environmental Issues\SH332*4f Exhibit 2.dgn





RPS klotz associates
1160 Dairy Ashford, Suite 500, Houston, Texas 77079
T 281.589.7257 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- PROPOSED MAIN LANES
- PROPOSED BRIDGE
- PROPOSED RAISED MEDIAN
- PROPOSED SIDEWALKS
- PROPOSED LANE INDICATOR
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- SECTION 4(f) PARCELS
- PARCELS

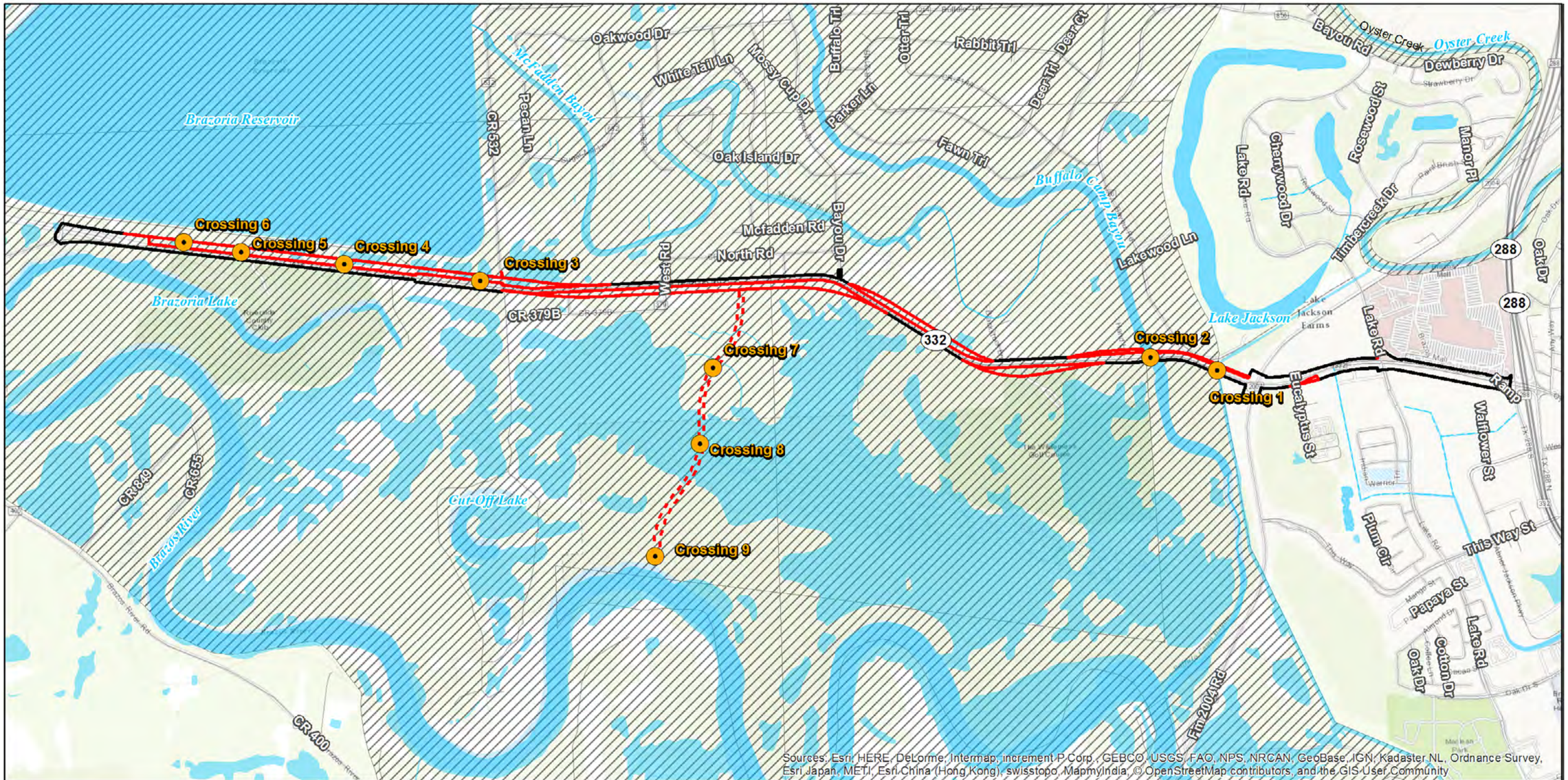
SCALE: 1" = 200'
100 0 100

EXHIBIT **D**

SH 332
from FM 521
to SH 288
Brazoria County

KLOTZ PROJ. No:	0121.064.004	PAGE
DATE:	APRIL 2016	D-3

5/27/2016 10:25:20 AM
J:\0121.064.004\07.00 CADD\SH332\CADD\10-IX Environmental Issues\SH332*4f Exhibit 3.dgn



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Proposed Right-of-Way
Existing Right-of-Way
Proposed Outfall Channel
Water of the U.S. Crossing
National Wetland Inventory Feature
100-year Floodplain

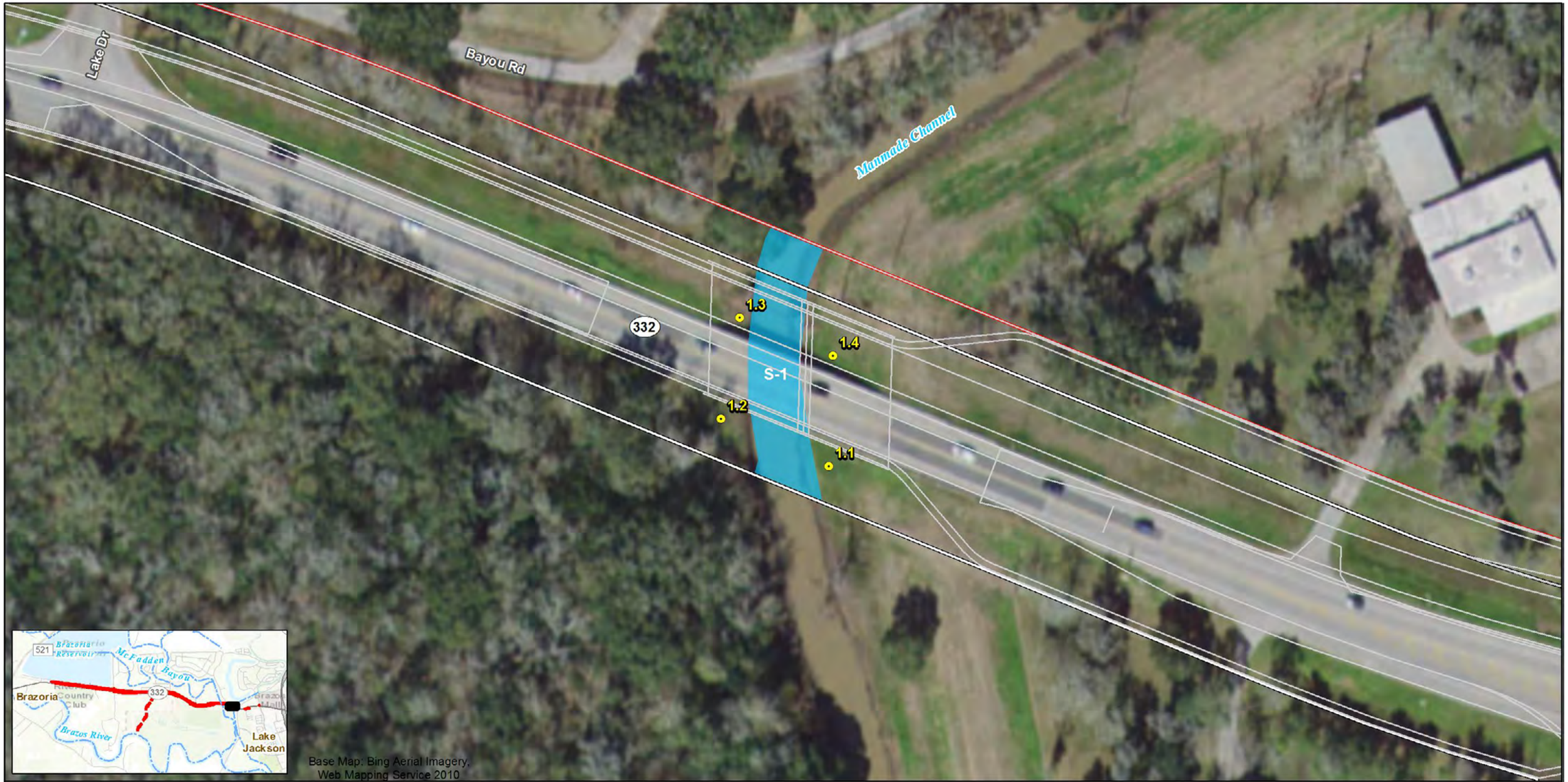
N W E S

1:24,000

0 1,000 2,000 4,000
Feet

Exhibit E

NWI, 100-Floodplain, and Waters of the U.S.
Crossing Locations in Project Area
SH 332
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047



Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

N W E S

1:900
Feet
0 50 100 200

Exhibit F-1
Water of the U.S.
Crossing 1
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

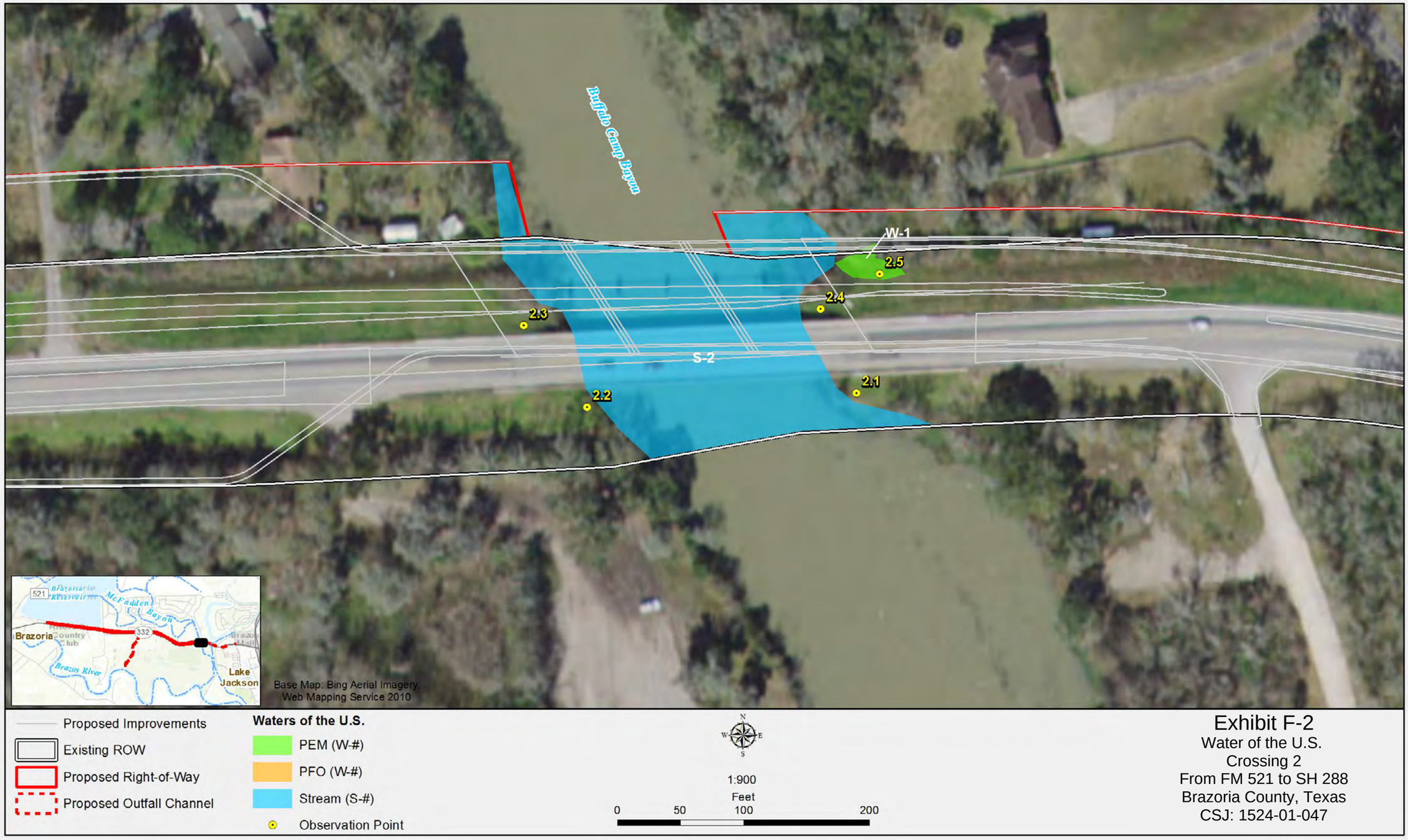


Exhibit F-2
Water of the U.S.
Crossing 2
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

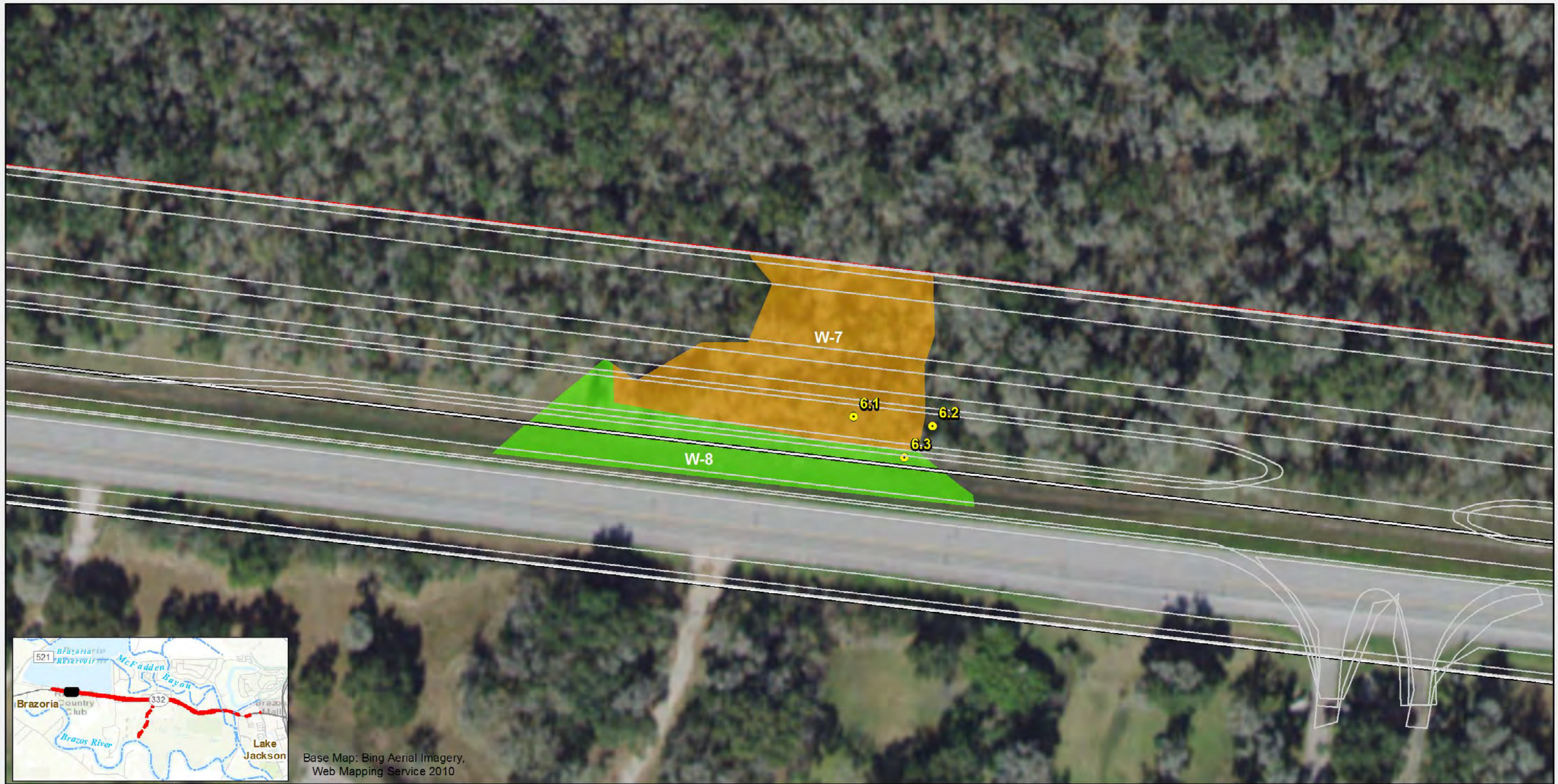
Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

N W E S

1:900
Feet
0 50 100 200

Exhibit F-3
Water of the U.S.
Crossing 3
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

Exhibit F-4
Water of the U.S.
Crossing 4
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047



Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

1:900
Feet
0 50 100 200

Exhibit F-5
Water of the U.S.
Crossing 5
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

1:900
Feet
0 50 100 200

Exhibit F-6
Water of the U.S.
Crossing 6
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

N W E S

1:900
Feet
0 50 100 200

Exhibit F-7
Water of the U.S.
Crossing 7
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

N W E S

1:2,000
Feet
0 50 100 200

Exhibit F-8
Water of the U.S.
Crossing 8
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047

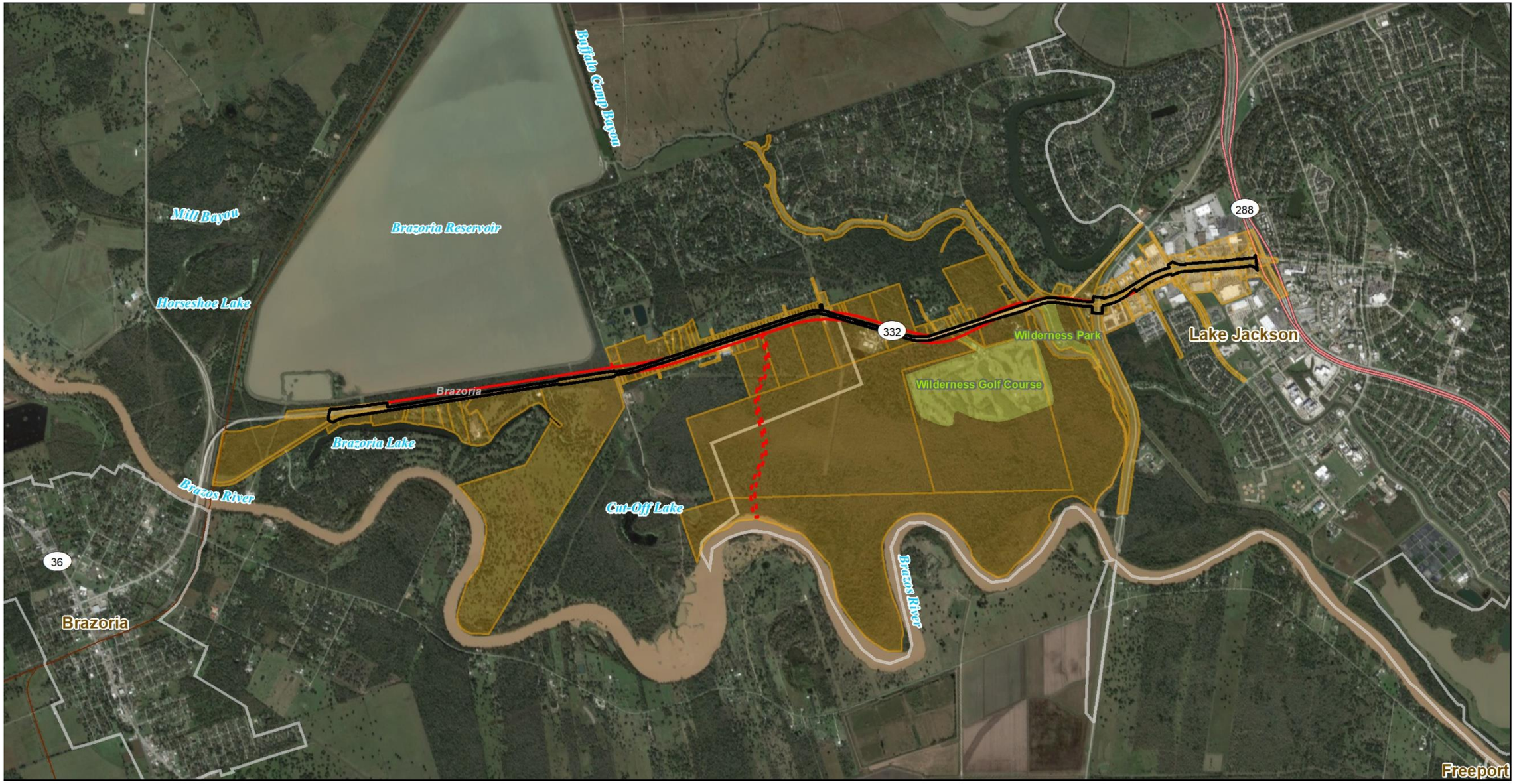
Proposed Improvements
Existing ROW
Proposed Right-of-Way
Proposed Outfall Channel

Waters of the U.S.
PEM (W-#)
PFO (W-#)
Stream (S-#)
Observation Point

N W E S

1:900
Feet
0 50 100 200

Exhibit F-9
Water of the U.S.
Crossing 9
From FM 521 to SH 288
Brazoria County, Texas
CSJ: 1524-01-047



Existing Right-of-Way
Proposed Outfall Channel
Proposed Right-of-Way
Adjacent Parcel

1:36,000
Feet
0 1,500 3,000 6,000

Exhibit G-1
Area of Influence
2015 Google Earth Imagery

Appendix G

Resource Agency Coordination

CC: CRM 8-17-04

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

2 August 2004

SECTION 106: DETERMINATION OF NRHP ELIGIBILITY

HOU Brazoria County
CSJ# 1524-01-047

RE: SH 332, from FM 581 to SH 288, Widen Roadway

PROJECT
8 1 7 2004
MANAGEMENT

Mr. Bob Brinkman
History Programs
Texas Historical Commission
Austin, Texas 78711

Dear Mr. Brinkman

The proposed project will be undertaken with Federal funding. In accordance with the Programmatic Agreement (PA) between TxDOT, FHWA, the Advisory Council on Historic Preservation, and the THC, this letter initiates Section 106 consultation for the proposed undertaking. This federally funded project proposes expand the roadway from its current two-lane configuration to a four-lane divided highway. The Area of Potential Effects (APE) for this project is 500-feet. New right-of-way will be acquired. The Historic Resources Survey Report is attached.

Field survey efforts identified 31 pre-1965 resources within the 500-foot APE during a historic resources survey. The 31 resources identified constitute a variety of property types. The bridges over Buffalo Camp Bayou (Site #s 2 & 3) were determined **not eligible** for the National Register of Historic Places (NRHP) per the Historic Bridge Inventory criteria. The remaining properties have undergone alterations or lack significant association with the historic context and therefore have been determined **not eligible** for NRHP listing.

We request your signed concurrence with this determination of eligibility within 30 days of receiving this letter. If you have any questions or comments about this project, please call me at 416-2619.

Sincerely,

Ralph Newlan
Architectural Historian
Environmental Affairs Division

attachments

CONCUR: DETERMINATION OF ELIGIBILITY

NAME: _____ DATE: 3 Aug 04
for F. Lawerence Oaks, State Historic Preservation Officer

Texas Department of Transportation
DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

September 13, 2005

Section 106/Antiquities Code of Texas: Archeological Review
Proposed Improvements to SH 332: FM 521 to SH 288
Houston District - Brazoria County (CSJ: 1524-01-047)
TAC Permit #3771

Dr. James E. Bruseth
Department of Antiquities Protection
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Dear Dr. Bruseth:

The proposed project will be undertaken with Federal funding. In accordance with Section 106 (and the Programmatic Agreement among the TxDOT, FHWA, the Advisory Council on Historic Preservation, and the THC) and the Antiquities Code of Texas (and the Memorandum of Understanding between TxDOT and the THC), this letter continues consultation for the proposed undertaking.

The accompanying copy of the draft report, *Archeological Investigations Technical Report SH 332: FM 521 to SH 228, Brazoria County, Texas*, is attached for your review and comments. The proposed project would expand SH 332 from its existing configuration to a six-lane rural-section and construct an outfall drainage channel from the roadway to the Brazos River. The survey resulted in the encounter of no archeological materials. Based on the results, the consultant recommended that "no further archeological investigations are recommended." TxDOT agrees with this recommendation and further recommends that the proposed project would have no effect on historic properties and/or State Archeological Landmarks (SAL).

TxDOT requests your concurrence that the proposed project would have no effect on any archeological historic properties, SAL or National Register properties and that the project be allowed to proceed to construction with no further need for archeological work or consultation with your office. If you agree that a finding of "no historic properties affected" is warranted, please sign below to indicate your concurrence. In the unlikely event of an accidental discovery of archeological deposits during construction, work shall cease in the immediate vicinity and accidental discovery procedures shall be implemented as outlined in, and in accordance with, the provisions as stated in the PA between the Advisory Council, the Federal Highway Administration, TxDOT, and the THC and the MOU between TxDOT and the THC.

The final draft should be anticipated shortly after returning comments made to this draft. We look forward to receiving your comments and appreciate your time. If you have any questions or have further need of information, please contact Allen Bettis of the TxDOT Archeological Studies Program at (512) 416-2747.

Sincerely,

Allen C. Bettis, Jr.
Archeological Studies Program
Environmental Affairs Division

Attachment
cc w/o attachments: James Mooney, Michael Baker, Jr., Inc. – Austin
Steve Shaw: Houston District ACB ECH Reading File

9-16-05

Concurrence by: Date:
for F. Lawerence Oaks, State Historic Preservation Officer

Texas Department of Transportation
DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

December 30, 2005

SECTION 106: NOTIFICATION OF NO HISTORIC PROPERTIES PRESENT

Brazoria County (Houston District)
CSJ# 1524-01-047

SH 332 from FM 521 to SH 288

RECEIVED
JAN 03 2006
Texas Historical Commission

Ms. Adrienne Campbell
History Programs
Texas Historical Commission
Austin, Texas 78711

Dear Ms. Campbell

The above referenced federally-assisted undertaking is widening project located along an approximately 6-mile section of SH 332 between FM 521 and SH 288 in Brazoria County and was cleared by the Texas State Historic Preservation Officer on August 3, 2004. Please see the attached copy of the concurrence. The present letter seeks concurrence for an addition to the widening project consisting of constructing a 1.15 mile long drainage ditch from SH 332 south to the Brazos River. The proposed drainage ditch will vary from 90 to 120 feet in width and from 6.5 to 15.0 feet in depth. The project addition would require the acquisition of 13.5 acres of new right-of-way (ROW). Maps showing the location of the proposed project are attached.

In accordance with the provisions of Programmatic Agreement for Cultural Resources, Texas Department of Transportation personnel conducted a cultural resources survey to identify properties potentially eligible for listing in the National Register of Historic Places (NRHP). ***No properties 50 years of age or older (pre-1960) are present within the project's area of potential effects (APE) and none are eligible or listed in the NRHP***. In accordance with the provisions of the Memorandum of Understanding, the APE for this project is determined to be 150-feet beyond the new ROW.

Please acknowledge your receipt of this correspondence and return a signed copy of this letter for our files within 15 days. If you need further information, please call me at 416-2600.

Sincerely,

Mark M. Brown, Ph.D.
Architectural Historian
Environmental Affairs Division

RECEIPT ACKNOWLEDGED
NO HISTORIC PROPERTIES PRESENT

NAME: _____ DATE: 1-3-06
for F. Lawerence Oaks, State Historic Preservation Officer

Jim R

MEMORANDUM

Texas Department of Transportation

Tx DOT RECEIVED JAN 28 2009 HOUSTON MAIL OPERATIONS

TO: 850 File, CRM Project file

District: HOU
County: Brazoria
CSJ#: 1524-01-047
Highway: SH 332
Project Limits: from FM 521 to SH 288
Project Description:
Stipulation VI, Appx. 4 – two to four lane divided; revised new ROW (58.72 acres); re-coordinate 2004 project with same finding of no historic-age properties in APE

FROM: **Mario L. Sanchez** **DATE: January 26, 2009**

SUBJECT: Internal review under the Programmatic Agreement (PA) among the Federal Highway Administration, Texas State Historic Preservation Officer, Advisory Council on Historic Preservation, and the Texas Department of Transportation; and the Memorandum of Understanding (MOU) between the Texas Historical Commission and the Texas Department of Transportation

---

PROJECT DESCRIPTION:
This project will widen for 5.2 miles a two-lane facility to four lanes divided in a rapidly developing urbanized area of Brazoria County, Texas. From FM 2004 to SH 288, within the city limits of Lake Jackson (eastern project limits), the road section would be urbanized to include six main lanes with a curb and gutter design. 58.72 acres of new right-of-way (ROW) are planned for this project.

PROJECT BACKGROUND:
On August 3, 2004, THC concurred with TxDOT's finding of no historic properties in a 500 ft. area of potential effects (APE). On January 3, 2006, THC concurred with a similar finding when TxDOT coordinated the addition of new ROW for a revised design that included a 1.15-mile long drainage ditch.
Since that time, the project has been revised to delete the drainage ditch and its proposed ROW, but to include new ROW for wider ditches along the side of the road. The originally proposed 60 acres of new ROW are now 58.72 acres. There are no changes in the road section.
TxDOT historians re-evaluated the 2004 survey for standing structures built to 1965 to determine if the newly revised ROW is included within the 500 ft. APE. The attached schematics show that the revised ROW is still well within the original APE, rendering viable the number of identified properties (31) and the findings of the 2004 survey. As such, the project is being re-coordinated in-house under the terms of the above-referenced PA.

SCANNED ON JAN 28 2009 MAIL OPERATIONS HOUSTON

DPD

CONCLUSION:

Pursuant to Stipulation VI, Appendix 4, "Undertakings with Potential to Cause Effects" of the First Amended Statewide Programmatic Agreement for Cultural Resources, TxDOT Historians have determined no historic properties or districts are present within the APE and that the project is excluded from individual coordination with the THC.

Lead Reviewer MLS for TxDOT 1/26/09
Mario L. Sanchez Date

Attachments
Cc w/out attachment: James Roscher, Houston District; Kristen Carney, ENV-PM
Cc w/attachment: ENV/CRM Mario L. Sanchez

Texas Department of Transportation

MEMO

June 29, 2017

TO: Administrative File
From: Renee Benn

District: Houston
County: Brazoria
CSJ#: 1524-01-047
Highway: SH 332
Let Date: 2020

Project Limits: FM 521 to SH 288 (5.3 miles)
Project Description: Stipulation IX, Appendix 6. Widen from two lane to four-six lane with divided median and sidewalks. 70.4 acres of new ROW. No historic, non-archeological properties present.

SUBJECT: Internal review under the Section 106 Programmatic Agreement (Section 106 PA) among the Texas Department of Transportation, Texas State Historic Preservation Officer, Advisory Council on Historic Preservation, and Federal Highway Administration; and the Memorandum of Understanding (MOU) between the Texas Historical Commission and the Texas Department of Transportation

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

**Please note this is a recoordination of a project originally cleared in 2004 with the same limits but with more required new ROW in 2017. See below and HRSR for further details.

Existing Conditions:
Currently, SH 332 is a rural two-lane undivided facility with two 12-foot-wide mainlanes (one in each direction) and 10-foot-wide outside shoulders from approximately 0.87 mile east of FM 521 to 500 feet west of FM 2004. From 500 feet west of FM 2004 to 1,700 feet east of FM 2004, SH 332 consists of a rural facility with two 12-foot-wide mainlanes (one in each direction), a 10-foot-wide center turn lane, and 10-foot-wide outside shoulders. From approximately 1,700 feet east of FM 2004 to SH 288, the existing SH 332 roadway is an urban facility with raised medians, four 12-foot-wide mainlanes (two in each direction), and 10-foot-wide shoulders. All intersections are at-grade, controlled by traffic lights or stop signs.

Proposed Project:
The proposed project includes reconstructing and widening SH 332 from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. The outermost lanes in each direction would function as shared-use lanes, which would accommodate

bicycles. Roadway improvements would include the reconstruction or replacement of non-historic bridges over Buffalo Camp Bayou and Dow Fresh Water Canal. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, TxDOT would improve drainage ditches along the north and south sides of the project. Additionally, TxDOT proposes a new drainage channel on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River for approximately 1.1 miles.

Determination of Eligibility:
TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found no historically significant resources previously documented within the area of potential effects (APE). The TxDOT Section 106 Programmatic Agreement defines the APE for this project as 150' from the ROW.

In April 2004, TxDOT historians completed a reconnaissance-level historic resources survey for the proposed project. TxDOT found 31 historic-age resources (built before 1965) on 29 numbered properties (Site IDs 1 through 29), all of which TxDOT and the Texas State Historic Preservation Office (SHPO) determined not NRHP-eligible (see SHPO concurrence letter dated August 2004 in Appendix E of the HRSR).

Due to the passage of time and project design changes since 2004, TxDOT completed a reconnaissance-level survey to inventory and evaluate historic resources built between 1965 and 1975 (to account for the new 2020 letting date). The 2017 historic resources survey identified seven resources at five properties (Resource Nos. 1a through 5) constructed in or prior to 1976 within the proposed project's APE.

The five properties constructed between 1965-1975 consist of recreational (former golf course) and single residential types. TxDOT historians determined that the properties are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons, and are therefore not eligible for NRHP listing under Criterion A, B, or C.

Therefore, pursuant to Stipulation IX, Appendix 6 "Undertakings with the Potential to Cause Effects per 36 CFR 800.16(i)" of the Section 106 PA and the MOU, TxDOT historians determined that there are no historic, non-archeological properties in the APE. In compliance with the Antiquities Code of Texas and the MOU, TxDOT historians determined project activities have no potential for adverse effects. Individual project coordination with SHPO is not required.

Lead Reviewer RMDobrasko for TxDOT 6/29/2017
Rebekah Dobrasko Date

Approved by [signature] for TxDOT 7-05-17
Bruce Jensen Date

James Roscher

From: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Sent: Friday, June 23, 2017 4:49 PM
To: James Roscher
Cc: Deborah Lively; Michele Wilkins; Colleen Roco
Subject: RE: SH 332, Brazoria County 1524-01-047

James,

I want to reiterate my request that TxDOT consider mitigation for indirect impacts to these wetlands, which may be damaged by the change to their hydrology. I also urge TxDOT to engage resource agencies in the Corps permitting process prior to issuing a public notice, whether with a field visit or a JEM or other pre-permit meeting. Based on previous controversy over this particular wetland I think TxDOT will benefit from engaging state and federal agencies early in the process.

Thank you for submitting the following project for early coordination: SH 332 widening and drainage channel (CSJ 1524-01-047). TPWD appreciates TxDOT's commitment to implement the practices listed in the Biological Evaluation Form submitted on March 27, 2017 and in subsequent emails. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife.
According to §2.204(g) of the 2013 TxDOT-TPWD MOU, TxDOT agreed to provide TXNDD reporting forms for observations of tracked SGCN (which includes federal- and state-listed species) occurrences within TxDOT project areas. Please keep this mind when completing project due diligence tasks. For TXNDD submission guidelines, please visit the following link: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/submit.phtml

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Wednesday, June 07, 2017 5:06 PM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Cc: Deborah Lively <Deborah.Lively@txdot.gov>; Michele Wilkins <Michele.Wilkins@txdot.gov>; Colleen Roco <Colleen.Roco@tpwd.texas.gov>
Subject: RE: SH 332, Brazoria County 1524-01-047

Sue,
The drainage channel would not be concrete lined. I believe a hydrologic study has already been done on this project. TxDOT has looked at drainage along the roadway and detention ponds.

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Wednesday, June 07, 2017 4:53 PM
To: James Roscher
Cc: Deborah Lively; Michele Wilkins; Colleen Roco
Subject: RE: SH 332, Brazoria County 1524-01-047

Jim,

Is the drainage channel proposed to be concrete-lined?

I want to request that TxDOT perform a hydrologic study before going forward with a Corps permit, so that indirect impacts may be estimated. TxDOT should mitigate for estimated indirect impacts to these wetlands. Columbia Bottomlands are a rare and valuable resource. They have multiple functions including wildlife habitat, nutrient cycling, flood abatement, and water quality functions. Draining water from the wetland will impair or impede many of those functions. Additionally, the location of the drainage channel will fragment the continuous riparian corridor. Large pieces of contiguous habitat are valuable and necessary for some species. Fragmentation creates edge effects that penetrate into the remaining pieces of habitat and reduce their value to those species.

I request that TxDOT consider options such as detention or aligning drainage channels with existing roadways or other previously disturbed areas to prevent impacts to this riparian area.

Thank you,

Sue

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Wednesday, June 07, 2017 7:27 AM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Cc: Deborah Lively <Deborah.Lively@txdot.gov>; Michele Wilkins <Michele.Wilkins@txdot.gov>
Subject: RE: SH 332, Brazoria County 1524-01-047

Hey Sue,
Here is what I have. See attached diagram. The design engineer wrote this, "The hydrology of the wetlands would be maintained by the passing of the surface runoff from one side of the drainage channel to the other through the natural ground elevation crossings above the culverts. Since the permeability of the underlying soils is low, the flow of excess surface water across the channel should be sufficient to offset any subsurface loss."
The reason for the drainage channel is to remove water from SH 332 and move it on to the Brazos River. The channel diagrams show the berms about 1.5 feet above natural ground which would, for the most part, keep water from draining into the channel from overland flow. The Geocell material would be put over the natural ground openings at the culverts to allow water flow underneath and allow service vehicles to traverse the 10 foot wide berm for inspection and repairs as needed.

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Wednesday, May 31, 2017 11:24 AM
To: James Roscher
Cc: Michele Wilkins; Colleen Roco
Subject: RE: SH 332, Brazoria County 1524-01-047

James,

Can you please send a cross-section of these structures? I'm not sure I understand how they work. In general if a ditch is dug across a wetland, it will drain the wetland. How will that consequence be avoided here? How will the hydrology of the wetland be preserved?

Thank you,

Sue

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Wednesday, May 31, 2017 7:42 AM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Cc: Michele Wilkins <Michele.Wilkins@txdot.gov>
Subject: RE: SH 332, Brazoria County 1524-01-047

Sue,
If you will open the attached pdf you will see that there are light blue sections in the main wetland area. These light blue sections indicate box culverts to be placed under ground to allow water to flow through the wetland near the surface.

From: James Roscher
Sent: Tuesday, May 30, 2017 10:27 AM
To: 'Sue Reilly'
Cc: Michele Wilkins
Subject: RE: SH 332, Brazoria County 1524-01-047

Sue,
The portion of the Brazos in the area of the project is considered tidal, but the EFH mapper did not mention any EFH to be located at the project site. The tidal portion actually ends just south of the SH 332 bridge.

Checking on the other part of your question.

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Friday, May 26, 2017 5:48 PM
To: James Roscher
Cc: Michele Wilkins
Subject: RE: SH 332, Brazoria County 1524-01-047

Hello,

Can you verify that this is a non-tidal portion of the Brazos where EFH would not be found? It looks like the tidal portion of the river extends up this way.

Can you please address concerns that the drainage ditch would drain wetlands in the area by changing hydrology?

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Tuesday, April 18, 2017 11:01 AM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Cc: Michele Wilkins <Michele.Wilkins@txdot.gov>
Subject: RE: SH 332, Brazoria County 1524-01-047

Yes, detention was looked at, but TxDOT did not want to buy land for detention ponds. Also, again the drainage of any detention ponds would be problematic just as the ditches were. I was not quite aware of the golf course as mitigation for a project. The info you sent of the history of the wilderness seems to indicate wetlands evident away, south, from SH 332.

See attachment for details on outfall channel. The channel may work as a drain for rain up to the point where the Brazos river comes out of its banks during very heavy storm events..

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Tuesday, April 18, 2017 10:25 AM
To: James Roscher
Cc: Mark Fisher
Subject: RE: SH 332, Brazoria County 1524-01-047

Jim,

Thank you for sending the plans.
Was detention examined as an alternative?
Also, there is quite a history with that Wilderness Park and the 404 permit for the golf course. Has TxDOT confirmed that that tract is not mitigation for another project? I'm copying Mark Fisher because he may remember more about the project, since USFWS had elevated the golf course project to DC and it had gone to the 5th Circuit. This portion of the park may not be mitigation, but it is worth double checking. I just glanced at the 5th Circuit ruling and it does mention preservation of the rest of the tract. Here's a link to the history of the land, posted on the golf course site: http://www.thewildernessgc.com/-history-of-the-wilderness – it includes some information, like, "City announces plans to create 1,000 acre Lake Jackson Wilderness Park combining land owned by the City, Dow Chemical and Dr. Frank Grady (if golf course issue is approved by voters)." Again, I don't know what is in that commitment.

How deep is the outfall channel? What effect will it have on the wetlands that it crosses? Is it really going to function as drainage as it crosses the floodplain of the Brazos?

Thanks,
Sue

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Tuesday, April 18, 2017 8:07 AM
To: Sue Reilly
Subject: RE: SH 332, Brazoria County 1524-01-047

Hey Sue,
The Drainage facility was thought up after looking at ditches and detention ponds all along the roadway. If you look at the topo maps for the area, Lake Jackson and Brazoria, you will see that there isn't much topographic relief in the area. Also most of the area surrounding SH 332 is in the 100 year flood plain (FEMA maps 48039C0595H and

615H). TxDOT looked at ditches and to move the water away from the road the ditches would have to be very deep. There is no real discharge location close by to get water from the center of the project out to local streams or rivers. So TxDOT looked at doing the ditch out to the Brazos; the next avenue reviewed. At first they wanted the ditch to handle the 100 year flood. Since everything in the area would be under water the 100 year ditch would not really work. We then went to the 10-year drainage ditch and that is what we plan to use at the present time. The design will be open ditch with a service road on the side. Some of the ditch would be enclosed in box culverts to allow for some water movement past the ditch, flow is from west by northwest to east by southeast. It would also allow animal movement across the ditch as well as people movement at the Wilderness Park area by the Brazos River.

All impacts to wetlands are going to be offset by credits from the Brazoria mitigation bank (Stringfellow Tract).
See attached schematics in pdf form.

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Monday, April 17, 2017 4:22 PM
To: James Roscher
Subject: RE: SH 332, Brazoria County 1524-01-047

Hi Jim,

Yes, I do have some questions. Can you please tell me more about the drainage facility? For example, the necessity for it, the alternatives examined, and the design for it? Do you have a mitigation plan yet?

I would also like more information about the road project, preferably a KMZ or a schematic.

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Wednesday, April 12, 2017 2:30 PM
To: Sue Reilly
Subject: RE: SH 332, Brazoria County 1524-01-047

Hey Sue,
If you have any questions on this project let me know.

From: WHAB_TxDOT [mailto:WHAB_TxDOT@tpwd.texas.gov]
Sent: Tuesday, March 28, 2017 2:11 PM
To: James Roscher
Cc: Sue Reilly
Subject: RE: SH 332, Brazoria County 1524-01-047

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 37775. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

John Ney
Administrative Assistant
Texas Parks & Wildlife Department
Wildlife Diversity Program – Habitat Assessment Program
4200 Smith School Road
Austin, TX 78744
Office: (512) 389-4571

From: James Roscher [mailto:James.Roscher@txdot.gov]
Sent: Monday, March 27, 2017 9:36 AM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Subject: SH 332, Brazoria County 1524-01-047

Folks,
This project goes from east of the Brazos River to SH 288 in Lake Jackson. This is a request for habitat review. The EMST maps and Output tables are included with this Biological Evaluation Form for the project.
Included are:
An aerial map
USFWS T&E List
TPWD T&E List
NDD EOID List
USFWS CBRA Mapper Printout
EMST Project MOU Summary Table
TPWD SGCN List
FPPA Documentation
And some photos

If there is anything else you need for coordination, please let me know, 713-802-5246.

Texas Department of Transportation
125 EAST 11TH STREET | AUSTIN, TEXAS 78701-2483 | (512) 463-8588 | WWW.TXDOT.GOV

August 28, 2016

Section 106/Antiquities Code of Texas: Archeological Review (Permit #8057)
State Highway (SH) 332: Farm-to-Market Road (FM) 521 to SH 288
Houston District; Brazoria County (**1524-01-047**)

Ms. Patricia A. Mercado-Allinger
Division Director/State Archeologist
Archeology Division
Texas Historical Commission
PO Box 12276
Austin, TX 78711-2276

Dear Ms. Mercado-Allinger:

The proposed project will be undertaken with Federal funding. In accordance with Section 106 (and the First Amended Programmatic Agreement among the Texas Department of Transportation [TxDOT], the Texas State Historical Preservation Officer [TSHPO], the Federal Highway Administration [FHWA], and the Advisory Council on Historic Preservation) and the Antiquities Code of Texas (and the Memorandum of Understanding between the Texas Historical Commission [THC] and TxDOT), this letter continues consultation for the proposed undertaking.

TxDOT's Houston District is proposing to improve SH 332 from FM 521 to SH 288, in Brazoria County, Texas. The proposed 5.3 mile long project would improve SH 332 in Brazoria County. This project proposes to reconstruct and widen SH 332 from two to four lanes (two lanes in each direction) from FM 521 to FM 2004.The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River, a distance of approximately 1.1 miles. The SH 332 ROW is approximately 200 feet in width and would be widened to between 240 and 300 feet in width. The project would require approximately 70.4 acres of additional right-of-way (ROW). *Approximately 29.58 acres of new ROW has been added to the design of this proposed project since the 2005 coordination for this undertaking, thus necessitating additional coordination.* The area of potential effect (APE) is

defined as the proposed project length, the existing and proposed ROW width, and the depth of construction impacts (3 - 15 feet in depth).

For this project, an archeological subcontractor, Blanton and Associates, Inc. (Blanton), conducted an intensive archeological survey on behalf of TxDOT. The proposed project APE is located entirely within an area of alluvial soils. The recent soils are derived from predominately loamy and clayey ancient and recent alluviums dating to both the Pleistocene and Holocene. These soils are located on stable landforms that generally predate human occupation. These soils have a reasonable potential for Native American archeological materials. However, most of the soils within the APE have been disturbed throughout most the proposed project area from previous developmental activities related to road construction and drainage. Only the recent addition of 29.58 acres has not been assessed. A review of the Texas Historic Sites Atlas on 1/23/2017 revealed that there are no previously recorded archeological sites, archeological historic properties (36 CFR 800.16(l)) or State Antiquities Landmarks (13 TAC 26.8) located within the APE for this proposed project. There are numerous recorded archeological sites located within 2,000 meters (6,600 feet) at the westernmost end of the APE in the area of Lake Jackson and south of the APE along the Brazos River. The nearest recorded archeological site is 41BO172, the Jackson Plantation. There are two archeological surveys of the APE that were performed in 2004 and 2005, respectively. A TxDOT survey for SH 332 and an outfall channel survey extending to the Brazos River performed for the Federal Housing Administration. There are several other surveys adjacent to the APE or within 1,000 meters (3,300 feet) of the APE. None of these surveys encountered and recorded any archeological materials within the APE, within the vicinity of the APE, or north of the Brazos River. Review of available historic maps has revealed that there were no structures of more than 50 years in age within this APE. No cemeteries are located within or adjacent to the APE.

The SH 332 project extends a total of approximately 5.3 miles from FM 521 to SH 288 in Brazoria County, Texas. Archeological survey of portions of the APE that coincide with proposed new ROW and where ROE was granted at the time of survey was completed June 22, 2017. Survey of these portions of the APE included 100 percent systematic inspection of the ground surface supplemented by shovel testing. Survey resulted in the identification of no archeological sites within the APE. Blanton recommended that no further archeological investigation of portions of the APE that coincide with proposed new ROW and where ROE was granted at the time of survey is warranted and that construction be allowed to proceed as planned in these areas. Also, approximately 4.87 remaining acres of the APE were inaccessible at the time of survey due to lack of ROE. Investigators assessed these portions of the APE from the existing ROW and determined that past and present subsurface investigations in the vicinity of these parcels (including 15 trenches and approximately 62 shovel tests and nine auger tests), as well as lack of indications of previous historic-aged structures at these locations based on maps and aerial photo research, provide adequate data to conclude that all of these inaccessible parcels possess low probability for the presence of intact archeological deposits. Based on this information, Blanton archeologists recommended no further work for these locations and construction should be allowed to proceed as planned. TxDOT agreed with these recommendations. In the event that previously unidentified cultural materials are discovered during construction, work in the immediate area of discovery should cease and TxDOT should be contacted.

Please find attached for your review and comments the Blanton draft survey report; *Intensive Archeological Surve, SH 332 from FM 521 to SH 288, Brazoria County, TxDOT Houston District, CSJ: 1524-01-047.* If you have no objections to the recommendations and request made or any comments on this report and find it acceptable, please sign below to indicate your concurrence and stamp the draft cover as acceptable.

Thank you for your consideration in this matter. If you have any questions or further need of assistance, please contact Allen Bettis of the TxDOT Archeological Studies Program at (512) 416-2747.

Sincerely,

Allen C. Bettis Jr.
Archeological Studies Program
Environmental Affairs Division

Attachment
cc w/o attachments: Andrea Burden, Blanton and Associates, Inc.
James Roscher, Houston District Office
ACB JVL PA File

Concurrence by: 9-1-17
Date:
for Mark S. Wolfe, State Historic Preservation Officer

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

DRAFT
Intensive Archeological Survey

SH 332 from FM 521 to SH 288, Brazoria County, Texas
TxDOT Houston District
CSJ: 1524-01-047

DRAFT REPORT ACCEPTABLE
by
for Mark Wolfe
Executive Director, THC
Date 9-1-17
Track#

Prepared by Blanton & Associates, Inc.
Texas Antiquities Permit No. 8057
Principal Investigator: Andrea Stahman Burden, M.A., RPA

July 2017

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

From: Farmer, Kristy L CIV USARMY CESWG (USA)
To: Carrington Wright
Cc: Sue Theiss
Subject: RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)
Date: Monday, June 15, 2020 9:19:49 AM

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

CLASSIFICATION: UNCLASSIFIED

Thanks Carrington-

I will get back with you if I have any questions after I review the revised information.

Thanks again,
Kristy

-----Original Message-----
From: Carrington Wright [mailto:Carrington.Wright@txdot.gov]
Sent: Friday, June 12, 2020 2:32 PM
To: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: [Non-DoD Source] RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

Hey Kristy, I compiled and responded to all of the comments I received from Kenny Jaynes and yourself (SWG-2020-00273 IP Review Comment Response 06.12.2020). Also attached:

- Completed and signed PJD form
- Stand alone impact table (let me know if this is the correct format)
- Revised exhibit that only shows one outfall alternative and revised documents that explain the other alternatives.

Thanks

Carrington Wright, P.G. | Environmental Specialist Texas Department of Transportation
7600 Washington Avenue, Houston, TX 77007 P (713) 802-5408

-----Original Message-----
From: Carrington Wright
Sent: Thursday, June 04, 2020 7:44 AM
To: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

Hey Kristy, I met with my project team and we are in the process of providing you additional support documentation. I will try to get you something next week.

Thanks

Carrington Wright, P.G. | Environmental Specialist Texas Department of Transportation
7600 Washington Avenue, Houston, TX 77007 P (713) 802-5408

-----Original Message-----
From: Farmer, Kristy L CIV USARMY CESWG (USA) [mailto:Kristy.L.Farmer@usace.army.mil]
Sent: Tuesday, June 02, 2020 1:59 PM
To: Carrington Wright <Carrington.Wright@txdot.gov>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>; Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>
Subject: RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

CLASSIFICATION: UNCLASSIFIED

HI Carrington-

I requested that mitigation be revised as it was indicated there were PCN crossings. That has to be updated before the PN.

In response to Kenny's questions: 1). Are you doing a PJD on this project? My adobe crashed but as far as I was able to tell it did not appear there was a form for a PJD in the request.

2). If you feel the project area will drastically change and additional impacts will be probable in addressing his questions and concerns, then yes we should wait. Were these non-jurisdictional ditches not listed as an impact? That is one example.

You have already labeled the Brazos River as a Section 10 water. Some of his questions are not necessary to address with him. I am the project manager. Part of putting it out on PN is that all questions and concerns can be addressed at the same time. When anyone requests an AJD there are more stringent requirements. If you utilize a PJD it is always going to err on the side of the aquatic resource, but it is less rigorous in review.

Thanks,
Kristy

-----Original Message-----
From: Carrington Wright [mailto:Carrington.Wright@txdot.gov]
Sent: Tuesday, June 2, 2020 1:47 PM
To: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: [Non-DoD Source] RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

Hey Kristy, my (responses) are below:

The attachment is the information including text about each crossing. I requested the table alone and not imbedded in text so that I can use it for the public notice. (Could you let me know exactly which table you need as a standalone, maybe which page(s). Also attached is the Tier II Questionnaire. Are you sure you attached the correct file? (Yes, the only difference between these pages and the document you have are that in the new document we included wetlands that were less than .10 ac for mitigation). If this information tends to replace the original submission, please let me know that as well (Yes, please replace with the current sheets and I will work on getting you a standalone table, when I have a better understanding of which table you need).

A sent you an email last week after I had spoken to Kenny. He had a lot of comments on the delineation and we will need some time to try to address them, did you want to continue with the public notice.

Carrington

-----Original Message-----
From: Farmer, Kristy L CIV USARMY CESWG (USA) [mailto:Kristy.L.Farmer@usace.army.mil]
Sent: Tuesday, June 02, 2020 12:32 PM
To: Carrington Wright <Carrington.Wright@txdot.gov>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

CLASSIFICATION: UNCLASSIFIED

Hi Carrington-

The attachment is the information including text about each crossing. I requested the table alone and not imbedded in text so that I can use it for the public notice. Also attached is the Tier II Questionnaire. Are you sure you attached the correct file? If this information tends to replace the original submission, please let me know that as well.

Thanks,
Kristy

-----Original Message-----
From: Carrington Wright [mailto:Carrington.Wright@txdot.gov]
Sent: Tuesday, May 12, 2020 8:08 AM
To: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: [Non-DoD Source] RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

Hey Kristy, attached are the updated tables.

I sent Kenny the wetland delineation docs via drop box yesterday, but something went wrong. I will send them again this morning and we are supposed to talk today at 1:30.

Carrington Wright, P.G. | Environmental Specialist Texas Department of Transportation
7600 Washington Avenue, Houston, TX 77007 P (713) 802-5408

-----Original Message-----
From: Farmer, Kristy L CIV USARMY CESWG (USA) [mailto:Kristy.L.Farmer@usace.army.mil]
Sent: Monday, May 11, 2020 12:21 PM
To: Carrington Wright <Carrington.Wright@txdot.gov>
Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

HI Carrington-

Please send as a stand-alone table. I will be separating it and using it in the plans.

Please call Kenny to discuss with him and send him anything he needs to clarify his comments. I do not want to wait too long to go to PN unless he has clear comments that state: 1) project impacts are not accounted for, or 2) there is something majorly off on the plans with regard to the project area and delineation you submitted. He was not privy to the delineation you provided so he may have comments that just need to be clarified.

Both of the aforementioned scenarios may require additional coordination. If it does not, and we are waiting for a long time to resolve his comments, we could be on PN awaiting the clarification.

Thanks,

-----Original Message-----
From: Carrington Wright [mailto:Carrington.Wright@txdot.gov]
Sent: Monday, May 11, 2020 12:03 PM
To: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>

Cc: Sue Theiss <Sue.Theiss@txdot.gov>
Subject: [Non-DoD Source] RE: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

Hey Kristy, we will revised the tables and mitigation to be more cumulative. Once competed I will resend to you, I would like to get this revised and approved by Kenny before we go to public notice.

Thanks and let me know if this works for you.

Carrington Wright, P.G. | Environmental Specialist Texas Department of Transportation
7600 Washington Avenue, Houston, TX 77007 P (713) 802-5408

-----Original Message-----
From: Farmer, Kristy L CIV USARMY CESWG (USA) [mailto:Kristy.L.Farmer@usace.army.mil]
Sent: Monday, May 11, 2020 11:01 AM
To: Carrington Wright <Carrington.Wright@txdot.gov>
Cc: Farmer, Kristy L CIV USARMY CESWG (USA) <Kristy.L.Farmer@usace.army.mil>; Sue Theiss <Sue.Theiss@txdot.gov>
Subject: Buffalo Camp Bayou – Brazoria, Texas – SWG-2020-00273 - CSJ 1524-01-047- Additional Information Request (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

HI Carrington-

I received the attached e-mail from Kenny Jaynes in our Compliance and Enforcement Branch.

At this time, TxDOT proposes to utilize the Coastal Bottomlands Mitigation bank. There may be additional concerns with resource agencies regarding those impacts to offset Columbia bottomlands hardwoods, such as... "are they indeed unavoidable?" This is more of an FYI for public notice comments. I looked up the MBI for this bank and it can be used to offset the impacts.

The mitigation plan section also states that one crossing for a 0.02 acre impact doesn't require mitigation because it is below the threshold of a PCN requiring mitigation. This project will be reviewed under an individual permit, where all impacts to wetlands are cumulative for the project. That point is moot. Please revise the mitigation statements. The public notice (PN) is prepared. I just wanted to point this out and see what you would like to do. We can go to PN as is. You can revise some language and the tables and resend. This may require additional coordination if all impacts are not accounted for within the project area and/or mitigation is not sufficient. Please let me know how you want to proceed.

I'm still reviewing for completeness. I just wanted to relay these comments asap since I received them regarding the delineated area and project impacts from Kenny Jaynes.

Thanks,
Kristy Farmer
CLASSIFICATION: UNCLASSIFIED

[A Texas Department of Transportation (TxDOT) message]<BlockedBlockedBlockedhttps://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.txdot.gov%2Finside-txdot%2Fmedia-center%2Ffeatured.html&data=02%7C01%7CCarrington.Wright%40txdot.gov%7C941df5f69db641c4e01708d8113728c0%7C39dba4765c094c6391dace7a3ab5224d%7C0%7C0%7C637278275890101416&sdata=ERtgA89KIEY4MWx01GLgKmB8OgYCa9mS1GMPFlw0jIg%3D&reserved=0>

CLASSIFICATION: UNCLASSIFIED

[A Texas Department of Transportation (TxDOT) message]<BlockedBlockedBlockedhttps://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.txdot.gov%2Finside-txdot%2Fmedia-center%2Ffeatured.html&data=02%7C01%7CCarrington.Wright%40txdot.gov%7C941df5f69db641c4e01708d8113728c0%7C39dba4765c094c6391dace7a3ab5224d%7C0%7C0%7C637278275890111373&sdata=3KtuuuJkIP37zFOIerykjeu05vPTxh%2Fb13NIBe0oRk4%3D&reserved=0>
CLASSIFICATION: UNCLASSIFIED

[A Texas Department of Transportation (TxDOT) message]<BlockedBlockedhttps://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.txdot.gov%2Finside-txdot%2Fmedia-center%2Ffeatured.html&data=02%7C01%7CCarrington.Wright%40txdot.gov%7C941df5f69db641c4e01708d8113728c0%7C39dba4765c094c6391dace7a3ab5224d%7C0%7C0%7C637278275890111373&sdata=3KtuuuJkIP37zFOIerykjeu05vPTxh%2Fb13NIBe0oRk4%3D&reserved=0>

CLASSIFICATION: UNCLASSIFIED

[A Texas Department of Transportation (TxDOT) message]<BlockedHttps://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.txdot.gov%2Finside-txdot%2Fmedia-center%2Ffeatured.html&data=02%7C01%7CCarrington.Wright%40txdot.gov%7C941df5f69db641c4e01708d8113728c0%7C39dba4765c094c6391dace7a3ab5224d%7C0%7C0%7C637278275890111373&sdata=3KtuuuJkIP37zFOIerykjeu05vPTxh%2Fb13NIBe0oRk4%3D&reserved=0>
CLASSIFICATION: UNCLASSIFIED

Appendix H

Section 4(f) Documentation

Section 4(f) Technical Report

SH 332 from FM 521 to SH 288
CSJ: 1524-01-047

Date: June 2016

Project Description

The Texas Department of Transportation (TxDOT) proposes to reconstruct and widen State Highway (SH) 332 in Brazoria County, Texas from Farm-to-Market (FM) 521 to SH 288. SH 332 would be reconstructed and widened from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (CR 680A), south to the Brazos River, a distance of approximately 1.1 miles. The project would require additional Right-of-Way (ROW). The proposed construction area would be approximately 5.4 miles in length. FM 521 was selected as the western project limit and SH 288 was selected as the eastern project limit for logical termini purposes. Although FM 521 is listed as the western limit, the actual western limit of construction would be approximately 3,000 feet east of FM 521. A project location map can be found on **Exhibit A**.

Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966 states that the Federal Highway Administration may not approve the use of land from a significant publically owned park, recreation area, wildlife and waterfowl refuge, or historic site. However, if a determination is made that there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from such use, then the taking may be approved. A Section 4(f) can be processed as a de minimis, programmatic or individual evaluation.

Two section 4(f) resources have been identified within the SH 332 project limits: Wilderness Golf Course and Wilderness Park. The resources are described in more detail in the following sections and shown on **Exhibits A and B**.

<u>Wilderness Golf Course</u>

Wilderness Golf Course is owned and operated by the City of Lake Jackson and is located on the south side of SH 332 west of Buffalo Camp Bayou.

<u>Wilderness Park</u>

Wilderness Park is also owned and operated by the City of Lake Jackson and is located on the south side of SH 332 west of Buffalo Camp Bayou. Facilities for picnicking, boating (boat ramp), parking lot and a two mile long hiking trail are available. The park property extends south of SH 332 along the west side of Buffalo Camp Bayou for approximately 1.1 miles.

The park property then extends west along the north side of the Brazos River for approximately 2.2 miles; however there is no maintained public access in this area.

Potential Use of Section 4(f) Resources

The proposed project would require approximately 1.2 acres of ROW from the Wilderness Golf Course entrance on the south side of SH 332 (see **Exhibits A and B**). No ROW would be required from the main parking lot or the actual golf course. On the ROW to be acquired there is currently the driveway for the golf course. The driveway for the golf course would be replaced if the proposed project is constructed. Access to and from the golf course would be maintained throughout construction of the proposed project. The ROW required for the road has been minimized so as to not disrupt the activities of the golf course or access to the golf course.

The proposed project would also require approximately 1.8 acres of ROW for the proposed new drainage channel from Wilderness Park property (see **Exhibits A and B**). The ROW acquired for the drainage channel would not impact the public park facility picnic tables, parking lot or boat ramp located in the southwest corner of SH 332 and Buffalo Camp Bayou. Additionally, the drainage channel would not impact the two mile hiking trail maintained by the City of Lake Jackson. Access to and from Wilderness Park would be maintained throughout construction of the proposed project.

Conclusion

The proposed project would not substantially impair the purposes of any publicly owned land from a public park, recreational area, wildlife and waterfowl refuge lands or historic sites of national, state, or local significance; therefore, no additional Section 4(f) evaluation would be required.

This report was written on behalf of the Texas Department of Transportation by

1160 Dairy Ashford, Suite 500,
Houston, TX 77079
www.rpsgroup.com | www.klotz.com
www.klotz.com

Texas Department of Transportation

P.O. Box 1386, HOUSTON, TEXAS 77251-1386 | 713.802.5000 | WWW.TXDOT.GOV

RECEIVED
OCT 16 2017
City of Lake Jackson

October 12, 2017

Mr. William P. Yenne
25 Oak Drive
Lake Jackson, Texas 77566

RE: Notification of Intent to Pursue De Minimis to Section 4(f) (23 CRF 774.3(b))
Wilderness Golf Course and Wilderness Park
Brazoria County
SH 332: From FM 521 to SH 288
Control 1524-01-047

Dear Mr. Yenne:

In accordance with 23 CRF 774.3(b), we are seeking concurrence for the above referenced project, which will be carried out with Federal funds. This letter requests review and consultation concerning the determinations of significance and findings of no adverse effects within the project's area of potential effects (APE). TxDOT also intends to pursue a Section 4(f) *de minimis*.

Introduction

The Texas Department of Transportation (TxDOT) proposes to reconstruct and widen State Highway (SH) 332 in Brazoria County, Texas from Farm-to-Market (FM) 521 to SH 288. SH 332 would be reconstructed and widened from two to four lanes (two lanes in each direction) from FM 521 to FM 2004. The proposed project would also reconstruct and widen SH 332 from four to six lanes (three lanes in each direction) from FM 2004 to SH 288. Roadway improvements would include the reconstruction or replacement of bridges over Buffalo Camp Bayou and a diversion channel just east of Buffalo Camp Bayou. The project would include sidewalks on both sides of the roadway for the entire length of the project. In addition to roadway improvements, improved drainage ditches would be constructed along the north and south sides of the project. Additionally, a new drainage channel is proposed on new location from SH 332, approximately 800 feet west of Division Street (County Road (CR) 680A), south to the Brazos River, a distance of approximately 1.1 miles. The project would require approximately 4 acres of additional Right-of-Way (ROW). The proposed project is approximately 5.4 miles in length. A project location map can be found on **Exhibit A.**

The proposed project would require approximately 1.2 acres of ROW from the Wilderness Golf Course entrance on the south side of SH 332 (see **Exhibits A and B**). No ROW would be acquired from the main parking lot or the actual golf course. The driveway for the golf course is currently located on ROW proposed to be acquired. The driveway for the golf course would be replaced, at TxDOT expense, if the proposed project is constructed. Access to and from the golf course would be maintained throughout construction of the proposed project. The ROW required for the road has been minimized so as to not disrupt the activities of the golf course or access to the golf course.

The proposed project would also require approximately 1.8 acres of ROW from Wilderness Park property for a proposed new drainage channel. The ROW acquired for the drainage channel would

not impact the public park facility picnic tables, parking lot, boat ramp, or hiking trail. Access to and from Wilderness Park would be maintained throughout construction of the proposed project.

Determination of No Adverse Effects and Certification of Section 4(f) *De Minimis*

Survey determined that the Wilderness Park and Wilderness Golf Course on which the use will take place has significance under the requirements of 23 CRF 774.3(b). In order to qualify for a Section 4(f) de minimis, it was established that the project activities will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection.

The function of Wilderness Park and Wilderness Golf Course will not be impaired and its function will not cease. Nor will the project impair the function of the property as a whole. Therefore, these minor changes would have no adverse effect. The property would still possess its significance after the project is complete.

If you feel that TxDOT has met the above requirements and have no additional comments about the project, then please endorse this letter and return it to us within 30 days from date at the top of the letter. This endorsement will signify your concurrence that there is no adverse effect to the above property. Additional information about Section 4(f) requirements can be found at the following or you may request additional information from TxDOT:
http://environment.fhwa.dot.gov/(S(1vyep545s3wmhuubnvexkmm2))/4f/index.asp

Conclusion

In accordance with 23 CRF 774.3(b), I hereby request your signed concurrence with the finding of no adverse effects. Furthermore, TxDOT determined that the proposed project activities meet the requirements of a *de minimis* finding under Section 4(f).

Thank you for your assistance with the federal review process. If you need further information, please call James Roscher, at (713) 802-5246.

Sincerely,

Pat Henry, P.E.
Director of Project Development
Houston District

cc: James Roscher

CONCUR: NO ADVERSE EFFECT

DETERMINATION OF *DE MINIMIS* IMPACT UNDER SECTION 4(f) GUIDELINES

NAME: _____ DATE: 11/6/17

William P. Yenne, City Manager

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT

Checklist for Section 4(f) *De Minimis* for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

Main CSJ: 1524-01-047
District(s): Houston
County(ies): Brazoria
Property ID: 149210
Property Name: Wilderness Golf Course

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

The following checklist was developed as a tool to assist in streamlining the Section 4(f) *De Minimis* process and to ensure that all necessary information is documented in the File of Record (ECOS).

What Type of Property is Being Evaluated?

- [x] A park, recreation land, or wildlife/waterfowl refuge
- [ ] A historic property

Section 4(f) Defining Criteria for Parks, Recreation, and Refuge Properties

1. Yes — Is the property publicly owned?
2. Yes — Is the property open to the public (except in certain cases for refuges)?
3. Yes — Is the property's major purpose for park, recreation, or refuge activities?
4. Yes — Is the property significant?

Defining the Property's Significance

Note: Significance is presumed in the absence of a determination with the official with jurisdiction.

1. Yes — Does the property play an important role in meeting the park, recreation, or refuge objectives for the official with jurisdiction?
2. Yes — Is the property's major purpose for park, recreation, or refuge activities?

Establishing Section 4(f) Use of the Property

1. Yes — Does the project require a use (i.e., new right of way, new easement(s), etc.)?

Establishing Section 4(f) *De Minimis* Eligibility

1. Yes — Was it determined that the project will not adversely affect the activities features, or attributes that make the property eligible for Section 4(f) protection?

2. Yes — Was a public notice and an opportunity for public review and comment provided? *(This requirement can be satisfied in conjunction with other public involvement procedures, such as those for NEPA process)*

3. Yes — Did the Official with Jurisdiction concur that the property was significant and that the proposed project meets ALL conditions of items above?

Documentation

The following **MUST** be attached to this checklist to ensure proper documentation of the Section 4(f) *De Minimis*:

1. Brief project description
2. Explanation of how the property will be used.
3. A detailed map of the Section 4(f) property including:
   a. Current and proposed ROW
   b. Property boundaries
   c. Existing and planned facilities
4. Concurrence letter with the Official with Jurisdiction

TxDOT Approval Signatures

District Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

James A. Roscher — Digitally signed by James A. Roscher DN: cn=James A. Roscher, o=HOU, ou=TxDOT, email=james.roscher@txdot.gov, c=US Date: 2017.06.19 14:22:59 -05'00'

District Personnel Name

November 9, 2017

Date

ENV Technical Expert Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

ENV Personnel Name

12/12/17

Date

TxDOT-ENV Section 4(f) *De Minimis* Final Approval

Based upon the above considerations, this Section 4(f) *De Minimis* satisfies the requirements of 23 CFR 774.

TxDOT-ENV, CRM Director or designee	12.18.17 Date
TxDOT-ENV, PD Director or designee	Date

Checklist for Section 4(f) *De Minimis* for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

Main CSJ: 1524-01-047
District(s): Houston
County(ies): Brazoria
Property ID: 149212
Property Name: Wilderness Park

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

The following checklist was developed as a tool to assist in streamlining the Section 4(f) *De Minimis* process and to ensure that all necessary information is documented in the File of Record (ECOS).

What Type of Property is Being Evaluated?

- ☒ A park, recreation land, or wildlife/waterfowl refuge
- ☐ A historic property

Section 4(f) Defining Criteria for Parks, Recreation, and Refuge Properties

1. Yes — Is the property publicly owned?
2. Yes — Is the property open to the public (except in certain cases for refuges)?
3. Yes — Is the property's major purpose for park, recreation, or refuge activities?
4. Yes — Is the property significant?

Defining the Property's Significance

Note: Significance is presumed in the absence of a determination with the official with jurisdiction.

1. Yes — Does the property play an important role in meeting the park, recreation, or refuge objectives for the official with jurisdiction?
2. Yes — Is the property's major purpose for park, recreation, or refuge activities?

Establishing Section 4(f) Use of the Property

1. Yes — Does the project require a use (i.e., new right of way, new easement(s), etc.)?

Establishing Section 4(f) *De Minimis* Eligibility

Checklist for Section 4(f) De Minimis for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

1. Yes — Was it determined that the project will not adversely affect the activities features, or attributes that make the property eligible for Section 4(f) protection?

2. Yes — Was a public notice and an opportunity for public review and comment provided? *(This requirement can be satisfied in conjunction with other public involvement procedures, such as those for NEPA process)*

3. Yes — Did the Official with Jurisdiction concur that the property was significant and that the proposed project meets ALL conditions of items above?

Documentation

The following **MUST** be attached to this checklist to ensure proper documentation of the Section 4(f) *De Minimis*:

1. Brief project description
2. Explanation of how the property will be used.
3. A detailed map of the Section 4(f) property including:
   a. Current and proposed ROW
   b. Property boundaries
   c. Existing and planned facilities
4. Concurrence letter with the Official with Jurisdiction

TxDOT Approval Signatures

District Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

James A. Roscher — Digitally signed by James A. Roscher DN: cn=James A. Roscher, o=HOU, ou=TxDOT, email=james.roscher@txdot.gov, c=US Date: 2017.06.19 14:15:08 -05'00'

District Personnel Name

November 9, 2017

Date

ENV Technical Expert Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

ENV Personnel Name

12/12/17

Date

TxDOT-ENV Section 4(f) *De Minimis* Final Approval

Based upon the above considerations, this Section 4(f) *De Minimis* satisfies the requirements of 23 CFR 774.

TxDOT-ENV, CRM Director or designee	12.18.17 Date
TxDOT-ENV, PD Director or designee	Date

Appendix I

NRCS-CPA-106

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of _____
1. Name of Project **SH 332 from FM 521 to SH 288**	5. Federal Agency Involved **TxDOT**	
2. Type of Project **Road Improvement**	6. County and State **Brazoria County, Texas**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated | Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction **Acres:** %	7. Amount of Farmland As Defined in FPPA **Acres:** %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Corridor A	**Corridor B**	**Corridor C**	**Corridor D**
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0			
C. Total Acres In Corridor				
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	6			
2. Perimeter in Nonurban Use	10	4			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	8			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	3			
8. On-Farm Investments	20	7			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
TOTAL CORRIDOR ASSESSMENT POINTS	160	28	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	28	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	28	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form