



Draft Environmental Assessment

Farm-to-Market Road (FM) 2206
(State Highway (SH) 42 to State
Loop (SL) 281), Gregg County,
Texas, Tyler District CSJs:
2073-01-009 and 2073-01-010

Prepared by: TxDOT Tyler District

Date: July 2016

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.

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Acronyms and Abbreviations

Included below is a list of common acronyms used throughout this document and their definitions:

ACS	American Community Survey
AADT	Annual Average Daily Traffic
ACM	Asbestos Containing Materials
APE	Area of Potential Effects
AOI	Area of Influence
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CWA	Clean Water Act
dB(A)	Decibels (A-weighted)
DHHS	U.S. Department of Health and Human Services
EA	Environmental Assessment
EMST	Ecological Mapping Systems of Texas
EPA	U.S. Environmental Protection Agency
EPIC	Environmental Permits, Issues, and Commitments
EO	Executive Order
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FM	Farm-to-Market Road
FPPA	Farmland Protection Policy Act
GCAD	Gregg County Appraisal District
HEI	Health Effects Institute
IP	Individual Permit
IRIS	Integrated Risk Information System
ISA	Initial Site Assessment
LBP	Lead Based Paints
LEP	Limited English Proficiency
Leq	Equivalent Sound Level
LPST	Leaking Petroleum Storage Tank
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics

Acronyms and Abbreviations (continued)

MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NATA	National Air Toxics Assessment
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreement
PCN	Preconstruction Notification
PM	diesel Particulate Matter
ROW	Right-of-Way
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
SL	State Loop
SW3P	Storm Water Pollution Prevention Plan
TCAP	Texas Conservation Action Plan
TCEQ	Texas Commission on Environmental Quality
TERP	Texas Emissions Reduction Plan
TIP	Transportation Improvement Program
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TSS	Total Suspended Solids
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
URARPA	Uniform Relocation Assistance and Real Properties Acquisition Act
US	U.S. Highway
U.S.	United States of America
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VMT	Vehicle Miles Traveled
vpd	Vehicles per day

1 **1.0 Introduction**

2 The Tyler District of the Texas Department of Transportation (TxDOT) proposes
3 improvements to approximately 3.7 miles of Farm-to-Market (FM) Road 2206, between
4 State Highway (SH) 42 and State Loop (SL) 281 in Gregg County, Texas. Improvements
5 would consist of widening FM 2206 from the existing two-lane facility to a four-lane facility
6 with a center left turn lane and a multi-use path/sidewalk (**Figure 3**) along portions of the
7 road.

8
9 This Environmental Assessment (EA) has been prepared to comply with the requirements of
10 the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Sections
11 4321-4375) and implementing regulations promulgated by the Council on Environmental
12 Quality (CEQ, 40 Code of Federal Regulations [CFR] Part 1500) and the Federal Highway
13 Administration (FHWA) (23 CFR Part 771).

14
15 **Appendix A** includes all project figures. **Figure 1** depicts the project location and **Figure 2**
16 shows the U.S. Geological Survey (USGS) topographic map for the project area. **Appendix B**
17 includes project area photographs. The design schematic for the proposed improvements
18 has been prepared and is available for inspection at the TxDOT Tyler District office at 2709
19 W. Front Street, Tyler, Texas 75702.

20 *1.1 Description of the Existing Facility*

21 The existing typical section consists of two 12-foot-wide travel lanes, with 6-foot shoulders
22 and open vegetated roadside ditches. There are no sidewalks or bicycle accommodations
23 within the project limits. The amount of existing right-of-way (ROW) located within the
24 proposed project limits is approximately 46.03 acres. The existing typical section is shown in
25 **Figure 3**.

26 *1.2 Description of the Proposed Project*

27 The proposed project is a roadway widening and improvement project. Proposed
28 improvements would widen approximately 3.7 miles of FM 2206 from an existing two-lane
29 road to a four-lane divided highway with a continuous left-turn lane/flush median. The
30 alignment would primarily follow the existing FM 2206 corridor. However, the curve located
31 between Cox Road and Jordan Valley Drive would be straightened and the road would be in
32 a new alignment in this section. The existing two-lane bridge over Hawkins Creek would be
33 demolished and a new four-lane bridge over Hawkins Creek would be constructed as part of
34 the new alignment.

35
36 From SH 42 to Fisher Road the roadway would have two 12-foot travel lanes in each
37 direction, a 16-foot center left turn lane, and 10-foot-wide outside shoulders. For the urban
38 section of the roadway (Fisher Road to SL 281), the proposed roadway would have a 10-
39 foot-wide shared-use path on one side of the roadway and a 5-foot-wide sidewalk on the

40 other. The proposed improvements would require approximately 41.34 acres of new right-of-
41 way (ROW) and approximately 1.20 acres of construction easements. The typical sections
42 and the proposed layout are shown in **Figures 3** and **4**, respectively.

43 1.2.1 Right-of-Way Requirements and Utility Relocations

44 The project would require approximately 41.34 acres of new ROW and approximately 1.20
45 acres of additional construction easements. Implementation of the proposed project may
46 require the relocation and adjustment of utilities such as water lines, sewer lines, gas lines,
47 telephone cables, electrical lines, and other subterranean and aerial utilities. The relocation
48 and adjustment of any utilities would be coordinated with the affected utility provider to
49 ensure that no substantial interruption of service would take place.

50 1.2.2 Logical Termini

51 The logical termini for the project are SH 42 (**Photo 1** in **Appendix B**) and SL 281 (**Photo 2** in
52 **Appendix B**). SH 42 is a major thoroughfare and marks a transition between FM 2206
53 (Harrison Road) and FM 2206 (Merrill Lake Road); east of SH 42, Merrill Lake Road is
54 increasingly rural as the roadway extends further from the developed areas around
55 Longview. SL 281 is another major roadway; the existing typical section of SL 281 (two lanes
56 in each direction with a center turn lane) matches that of the proposed project. The
57 proposed project has independent utility and would not preclude other foreseeable
58 transportation improvements within the project area.

59 **2.0 Need and Purpose**

60 *2.1 Project Need*

61 The FM 2206 project is needed to improve mobility in the Longview area to provide safer
62 turning movements through turn lanes that are separated from travel lanes, and to improve
63 safety by straightening the curve between Cox Road and Jordan Valley Drive.
64

65 The project study area is influenced by a number of important traffic generators, including
66 SH 42 and SL 281. The proposed roadway would provide additional capacity for traffic
67 traversing this quickly growing part of the county. In 2012, the roadway from SH 42 to Fisher
68 Road accommodated about 4,800 vehicles per day (vpd); this is expected to increase to
69 about 6,800 vpd by 2032, an increase of 42% (TxDOT 2014d). The traffic volume from
70 Fisher Road to SL 281 is expected to increase from 7,300 to 10,000 vpd during the same
71 time period, an increase of 37% (see **Table 1**).
72

73 The proposed design would also improve safety by separating turning movements from
74 through traffic movements. FHWA studies have shown that the installation of center two-way
75 left-turn lanes can decrease overall crash rates by nearly 30 percent (Persuad, et al., 2007).
76 The proposed project would improve safety for the traveling public by straightening the curve

77 located between Cox Road and Jordan Valley Drive as well as the construction of a new
78 bridge over Hawkins Creek.

79 *Table 1: Traffic Projections*

Road Segment	ADT in Vehicles Per Day	
	2012	2032
FM 2206 from SH 42 to Fisher Road	4,800	6,800
FM 2206 from Fisher Road to SL 281	7,300	10,000

Source: TxDOT TP&P Traffic Projections, March 2014.

80

81 *2.2 Project Purpose*

82 The purpose of the proposed project is to facilitate modal mobility in Gregg County by
83 improving traffic flow and improving safety along FM 2206 in the project area.

84 **3.0 Planning and Programming Status/Project Funding**

85 The estimated construction cost is approximately \$18.5 million, with funding to be provided
86 by state and Federal sources. The proposed action is consistent with the area's financially
87 constrained 2040 Metropolitan Transportation Plan (MTP) developed by the Longview
88 Metropolitan Planning Organization (MPO). The project is included in the 2015-2018
89 Transportation Improvement Program for Development Authority only and will be a part of
90 the 2017-2020 Transportation Improvement Program (TIP, see Appendix C), once it is
91 approved.

92 **4.0 Alternatives**

93 Early in the planning stages of the project three alternative route alignments were analyzed
94 to compare approximate impacts on environmental resources including: land use, proposed
95 ROW, farmlands, residential and commercial areas, pedestrian and bicycle facilities,
96 geometrics, drainage, mobility, safety, approximate cost, air and noise impacts, water
97 quality, wetlands/waters of the U.S., wildlife habitat, floodplains, state or Federally-listed
98 threatened or endangered species, historic and archeological assets, cemeteries, hazardous
99 materials regulatory database review, and aesthetic and scenic quality. These three
100 alternative route alignments were presented during the public involvement meetings to
101 gather public input and identify potential constraints related to each alternative. From this
102 comparative analysis a single build alternative was selected.

103 *4.1 Alternatives Considered but Eliminated from Further* 104 *Consideration*

105 Leading up to the first FM 2206 public meeting, three different geometric alternatives were
106 designed and considered: Alternative A, Alternative B, and Alternative C. All three design
107 alternatives are similar in the fact that they proposed a 4-lane highway with a center, two-

108 way, left turn lane. Each alternative proposed a 60 mile per hour (MPH) design speed from
109 SH 42 to Fisher Rd., and a 50 MPH design speed from Fisher Rd. to Loop 281. The
110 alternatives differed in their alignments and the design standards used to create them. All
111 three roadway geometric alternatives were presented at the first FM 2206 public meeting on
112 October 22, 2014. All who attended were encouraged to review the three alternatives,
113 discuss with project representatives, and provide comments. In addition to voicing their
114 questions and concerns, stakeholders were given the opportunity to weigh in on their
115 preferred alternatives by submitting an official comment. A preferred alternative(s) from a
116 public input perspective was determined by the following method:

- 117 ▪ One point was applied to each alternative when a stakeholder preferred that design
118 over another.
- 119 ▪ One point was subtracted from an alternative when a stakeholder was against that
120 design.
- 121 ▪ Stakeholders who occupy the same address (i.e. spouses, families) were treated as a
122 single entity, and given one vote only.

123

124 After considering all comments received, it was determined that Alternatives A and B were
125 preferred equally with a score of two. Alternative C received a score of zero, due to an equal
126 number of positive and negative votes.

127

128 Following the public meeting, all three alternatives were analyzed in a matrix that compared
129 environmental and socioeconomic impacts, public and stakeholder input, safety, mobility,
130 potential residential and commercial impacts (in the form of displacements), and cost.
131 Through this matrix, Alternative A was determined to be the preferred alternative of the
132 three. Alternative A was then further developed from an engineering perspective into the
133 design that is presented in this EA as the Build Alternative.

134 *4.2 No-Build Alternative*

135 The No-Build Alternative represents the case in which the proposed project would not be
136 constructed. Other transportation improvements may or may not be constructed, depending
137 on project development and funding availability issues for such improvements.

138

139 The No-Build Alternative would not improve mobility and safety in the project area. For these
140 reasons, the No-Build Alternative would not satisfy the purpose and need of the proposed
141 project. The No-Build Alternative is carried forward throughout the document as a baseline
142 comparison to the Build Alternative.

143 **4.3** *Build Alternative*

144 The Build Alternative is described in **Section 1.2**. The typical sections and project layout are
145 shown in **Figures 3** and **4**, respectively. The Build Alternative is the preferred alternative, as
146 it would best fulfill the need and purpose of the project.

147 **5.0** **Existing Environment and Project Impacts**

148 The proposed project is located in Gregg County, Texas. The project area is within the
149 Western Gulf Coastal Plains Ecoregion (TPWD 2012). Vegetation in the project vicinity is
150 primarily characterized as a mix of grassland, wooded, and riparian areas.

151 The existing ROW is dedicated to transportation use. Land surrounding the existing ROW
152 consists of a mixture of undeveloped, agricultural, and residential uses with occasional
153 commercial and light industrial uses.

154 **5.1** *Issues Eliminated from Further Study*

155 **5.1.1** *Airway Highway Clearance*

156 The nearest airport is the East Texas Regional Airport, approximately nine miles southeast of
157 the proposed project limits. Because the distance to the airport is greater than two miles
158 away, airway-highway clearance is not required.

159 **5.1.2** *Farmland Protection Policy Act*

160 The Farmland Protection Policy Act (FPPA), as detailed in Subtitle I of Title XV of the
161 Agricultural and Food Act of 1981, provides protection to the following: (1) prime farmland,
162 (2) unique farmland, and (3) farmland of local or statewide importance. Transportation
163 projects conducted by a Federal agency or with Federal agency assistance that irreversibly
164 convert protected farmland (directly or indirectly) to nonagricultural use are required to
165 coordinate with the Natural Resources Conservation Service (NRCS) under the FPPA. The
166 proposed project was scored using the U.S. Department of Agriculture's Farmland
167 Conversion Impact Rating Form. Although the proposed project would convert some
168 farmland subject to the FPPA to a non-agricultural, transportation use, the resulting score
169 was below that required for coordination with the NRCS; therefore, no coordination with the
170 NRCS is required (Cox|McLain Environmental Consulting, Inc. 2016b).

171 **5.1.3** *General Bridge Act and Rivers and Harbors Act of 1899*

172 Although the proposed project does include replacement of the FM 2206 bridge at Hawkins
173 Creek, Hawkins Creek is not listed as a navigable waterway. Therefore, the proposed project
174 would not require construction or modification of a bridge over a navigable waterway. The
175 General Bridge Act of 1946 and the Rivers and Harbors Act of 1899 do not apply.

176 5.2 *Issues Studied in Detail*

177 5.2.1 Waters of the U.S., Including Wetlands

178 5.2.1.1 *No-Build Alternative*

179 No impacts to waters of the U.S., including wetlands, would occur as a result of the No-Build
180 Alternative.

181 5.2.1.2 *Build Alternative*

182 The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill
183 material into wetlands and other waters of the U.S. under Section 404, subsection
184 330.5(a)(21) of the Clean Water Act (CWA). Authorization is required from the USACE for any
185 activity that would result in the discharge of dredged or fill material into waters of the U.S.
186 Regulated activities may be permitted through the USACE via an Individual Permit (IP),
187 Regional General Permit, or Nationwide Permit (NWP).

188
189 A field assessment to identify and delineate potential waters of the U.S. occurring within the
190 project area was completed in August 2015 and March 2016. The findings are detailed in
191 the Wetland/Waters of the U.S. Delineation Technical Report (submitted under separate
192 cover) and are summarized below.

193
194 In all, 16 aquatic features were identified within the proposed project ROW during field
195 investigations, which are depicted in **Figure 5**. Of these 16 aquatic features, 12 would be
196 considered potential waters of the U.S. These potential waters of the U.S. include three
197 emergent wetlands (Wetland 3, Wetland 4, and Wetland 5), Hawkins Creek (Waters A and
198 **Photo 3 in Appendix B**), Cemetery Lake (Waters B and **Photo 4 in Appendix B**), four unnamed
199 tributaries to Hawkins Creek (Waters C, Waters D, Waters E, and Waters F), and three
200 unnamed tributaries to the Sabine River (Waters G, Waters H, and Waters I). The project
201 would impact approximately 0.20-acre/1,105 linear feet of potential waters of the U.S.,
202 including wetlands, as described in **Table 2**.

203 *Permits and Mitigation*

204 All proposed roadway and drainage improvements should be designed in a manner to avoid
205 or minimize impacts to jurisdictional crossings. No single and complete crossing associated
206 with the proposed project would have the potential to exceed the 0.50-acre impact
207 threshold that would require USACE authorization through an IP, as established by Section
208 404 of the CWA. It is anticipated that impacts to waters of the U.S. would be authorized
209 through NWP 14 (Linear Transportation Projects) with a Pre-construction Notification (PCN)
210 because of impacts to special aquatic sites (Wetland 3, Wetland 4, and Wetland 5) located
211 within the existing and proposed ROW. Since unavoidable impacts to waters of the U.S. are
212 less than 0.10-acre of each single and complete crossing, no compensatory mitigation is
213 required or proposed.

214 *Executive Order 11990, Wetlands*
215 Executive Order (EO) 11990 Protection of Wetlands (42 *Federal Register* 26961, May 24,
216 1977) provides the requirement "to avoid to the extent possible the long and short term
217 adverse impacts associated with the destruction or modification of wetlands and to avoid
218 direct or indirect support of new construction in wetlands wherever there is a practicable
219 alternative."

220 Table 2: Summary of Crossings Evaluated Within the Project Area

Single and Complete Crossing #	Name of Water Body	Type of Aquatic Resource	Average OHWM within Right-of-Way (feet)	Existing Structure	Linear Feet/Acres of Water Body within the Project Area	Linear Feet/Acres of Impacts*	Water of the U.S.? (Yes/No)	Permit Required if PJD Requested?	NWP 14 Permit Potentially Required?	PCN Potentially Required?
1	Wetland 1	Isolated Forested Wetland	N/A	None	N/A 0.09 acre	N/A 0.07 acre	No**	Yes	No	No
2	Wetland 2	Isolated Forested Wetland	N/A	24-inch RCP	N/A 0.01 acre	N/A 0.01 acre	No**	Yes	No	No
3	Wetland 3	Emergent Wetland	N/A	Two 24-inch RCPs	N/A 0.01 acre	N/A 0.01 acre	Yes	Yes	Yes	Yes
3	Waters I (Unnamed Tributary to the Sabine River)	Ephemeral Stream Channel	4 feet	Two 24-inch RCPs	133 linear feet 0.01 acre	10 linear feet 0.01 acre	Yes	Yes	Yes	Yes
4	Wetland 7	Isolated Emergent Wetland	N/A	None	N/A 0.05 acre	N/A 0.01 acre	No**	Yes	No	No
5	Waters A (Hawkins Creek)	Perennial Stream Channel	35 feet	Bridge	374 linear feet 0.28 acre	N/A 0.01 acre Minimal impacts associated with the removal of four existing bridge bents and the installation of four new bridge bents	Yes	Yes	Yes	Yes

Single and Complete Crossing #	Name of Water Body	Type of Aquatic Resource	Average OHWM within Right-of-Way (feet)	Existing Structure	Linear Feet/Acres of Water Body within the Project Area	Linear Feet/Acres of Impacts*	Water of the U.S.? (Yes/No)	Permit Required if PJD Requested?	NWP 14 Permit Potentially Required?	PCN Potentially Required?
5	Wetland 4	Emergent Wetland	N/A	None	N/A 0.48 acre	N/A 0.01 acre Minimal impacts associated with the installation of six new bridge bents	Yes	Yes	Yes	Yes
5	Wetland 5	Emergent Wetland	N/A	None	N/A 0.60 acre	N/A 0.01 acre Minimal impacts associated with the installation of four new bridge bents	Yes	Yes	Yes	Yes
6	Waters B (Cemetery Lake)	Open Water	N/A	None	N/A 0.05 acre	N/A 0.00 acre	Yes	Yes	Yes	No
6	Waters C (Unnamed Tributary to Hawkins Creek)	Intermittent Stream Channel	5 feet	Two 36-inch RCPs	693 linear feet 0.06 acre	567 linear feet 0.05 acre	Yes	Yes	Yes	No
6	Wetland 6	Roadside Ditch	N/A	None	N/A 0.02 acre	N/A 0.00 acre	No	Yes	Yes	No

Single and Complete Crossing #	Name of Water Body	Type of Aquatic Resource	Average OHWM within Right-of-Way (feet)	Existing Structure	Linear Feet/Acres of Water Body within the Project Area	Linear Feet/Acres of Impacts*	Water of the U.S.? (Yes/No)	Permit Required if PJD Requested?	NWP 14 Permit Potentially Required?	PCN Potentially Required?
7	Waters D (Unnamed Tributary to Hawkins Creek)	Intermittent Stream Channel	10 feet	Two 48-inch RCPs	422 linear feet 0.09 acre	85 linear feet 0.04 acre	Yes	Yes	Yes	No
8	Waters E (Unnamed Tributary to Hawkins Creek)	Intermittent Stream channel	9 feet	4-x-6-foot box culvert	214 linear feet 0.04 acre	162 linear feet 0.03 acre	Yes	Yes	Yes	No
9	Waters F (Unnamed Tributary to Hawkins Creek)	Intermittent Stream Channel	9 feet	48-inch RCP	240 linear feet 0.04 acre	76 linear feet 0.01 acre	Yes	Yes	Yes	No
10	Waters G (Unnamed Tributary to the Sabine River)	Ephemeral Stream Channel	4 feet	72-inch RCP	173 linear feet 0.02 acre	95 linear feet 0.01 acre	Yes	Yes	Yes	No
11	Waters H (Unnamed Tributary to the Sabine River)	Intermittent Stream Channel	7 feet	72-inch RCP	169 linear feet 0.02 acre	110 linear feet 0.01 acre	Yes	Yes	Yes	No

*Linear feet/acres of impacts does not include impacts to culverted waterbodies.

**These features would likely be considered isolated and non-jurisdictional under current USACE guidance.

221

222

223 All proposed roadway and drainage improvements should be designed in a manner to avoid
224 or minimize impacts to jurisdictional crossings. Approximately 0.03-acre of wetlands
225 (Wetland 3 – 0.01-acre, Wetland 4 – 0.01-acre, and Wetland 5 – 0.01-acre) and 1,105
226 linear feet of stream channel (Waters C – 567 linear feet, Waters D – 85 linear feet, Waters
227 E – 162 linear feet, Waters F – 76 linear feet, Waters G – 95 linear feet, Waters H – 110
228 linear feet, Waters I – 10 linear feet) would be impacted by the proposed project.

229 5.2.2 Floodplains

230 5.2.2.1 *No-Build Alternative*

231 No floodplains would be impacted by the No-Build Alternative.

232 5.2.2.2 *Build Alternative*

233 The project area is generally well-drained with flows conveyed within several large drainage
234 basins, including Hawkins Creek and associated unnamed tributaries to the Sabine River.
235 The project crosses a Federal Emergency Management Agency (FEMA) designated floodway
236 for Hawkins Creek and a designated 100-year floodplain for Hawkins Creek (**Figure 5**).

237
238 The project is located entirely within Gregg County, which is a participant in the National
239 Flood Insurance Program. According to FEMA Flood Insurance Rate Maps (Flood Hazard
240 Boundary Map Community Panel Numbers 48183C0155F and 48183C0160F [revised
241 2014]), approximately 987 linear feet of the floodplain associated with Hawkins Creek
242 would be crossed by the proposed project (see **Figure 5** in **Appendix A**).

243 *Executive Order 11988, Floodplain Management*

244 EO 11988 “Floodplain Management” requires Federal agencies to identify and evaluate
245 practicable alternatives to locating in the base floodplain, including alternative sites outside
246 of the floodplain. Due to the extent of the floodplain in the project area, there are no
247 practicable routes that would avoid floodplain encroachments.

248
249 The hydraulic design for this project would be in accordance with current FHWA and TxDOT
250 design policies. The facility would permit the conveyance of the 100-year floodplain,
251 inundation of the roadway being acceptable, without causing significant damage to the
252 facility, stream, or other property. The proposed project would not increase the base flood
253 elevation to a level that would violate applicable floodplain regulations and ordinances. The
254 design of the roadway would maintain floodplain connectivity and would minimize impacts to
255 natural and beneficial floodplain values. Any proposed development actions by others would
256 be subject to the permitting and coordination requirements of local floodplain ordinances.
257 Efforts would be made to minimize the permanent impact to the floodplain to the extent
258 practicable during detailed design. As natural and beneficial floodplain values are not
259 anticipated to be affected, no specific measures to restore and preserve these values are

260 proposed. Therefore, coordination with the local Floodplain Administrator would be required
261 before construction.

262 5.2.3 Water Quality

263 5.2.3.1 No Build Alternative

264 No impacts to water quality would occur as a result of the No-Build Alternative.

265 5.2.3.2 Build Alternative

266 *Section 303(d) of the Clean Water Act*

267 The project area is located within the Sabine River Basin, which drains approximately 9,756
268 square miles (TCEQ 2013). For the purposes of monitoring water quality, the Texas
269 Commission on Environmental Quality (TCEQ) has divided the major water bodies within the
270 Sabine River Basin into 14 classified and 17 unclassified segments (TCEQ 2013). The
271 proposed project is located within the watershed of stream segment 0505C (Hawkins Creek)
272 and within the watershed of stream segment 0505 (Sabine River) of the Sabine River Basin.
273 According to the 2014 Texas Integrated Report 303(d) List, stream segment 0505C is listed
274 as an unimpaired unclassified freshwater stream and is located within the proposed project
275 area. Stream segment 0505 is listed as an unimpaired unclassified freshwater stream and
276 is not located within the project area but is located within five miles of the project area. The
277 project is not located five miles upstream of any waters listed as impaired on the 2014
278 TCEQ 303(d) list.

279 *Section 402 of the Clean Water Act*

280 Portions of the project are located within the city of Longview regulated Municipal Separate
281 Storm Sewer System (MS4) boundaries. All aspects of project design would comply with the
282 applicable MS4 requirements.

283 *Section 402 of the Clean Water Act: Texas Pollutant Discharge Elimination 284 System, Construction General Permit*

285 This project would include five or more acres of earth disturbance. TxDOT would comply with
286 TCEQ's Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit
287 (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be implemented, and a
288 construction site notice would be posted on the construction site. A Notice of Intent (NOI)
289 and a Notice of Termination would be required.

290 *TCEQ Section 401 Water Quality Certification, Best Management Practices*

291 The proposed project would comply with Section 401 requirements. The 401 Certification
292 requirements for NWP 14 would be met by implementing approved erosion control,
293 sedimentation control, and post-construction Total Suspended Solids (TSS) Best
294 Management Practices (BMPs) from the TCEQ's 401 Water Quality Certification Conditions
295 for NWPs (TCEQ 2012).

296 5.2.4 Vegetation and Wildlife Habitat

297 5.2.4.1 No-Build Alternative

298 No impacts to vegetation or wildlife habitat would result from the No-Build Alternative.

299 5.2.4.2 Build Alternative

300 *Natural Region and Vegetation Types*

301 The project area is located within the Western Gulf Coastal Plains Ecoregion (TPWD 2012).
302 The footprint of the project area was overlain on Ecological Mapping Systems of Texas
303 (EMST) vegetation type maps as shown in **Figure 6**. According to EMST the project area is
304 comprised of Pine Plantation, Pineywoods, Open Water, Urban High Intensity, and Urban Low
305 Intensity vegetation types (**Table 3**).

306
307 Vegetation observed within the project area is not accurately represented by the EMST.
308 Observed vegetation generally consists of five vegetation types within the existing and
309 proposed ROW (**Figure 7**). The observed vegetation corresponds with the vegetation types
310 outlined in TxDOT's 2013 Memorandum of Understanding (MOU) with the Texas Parks and
311 Wildlife Department (TPWD) as shown in **Table 3** (TxDOT, 2014a). **Table 3** indicates that
312 thresholds set by the *Threshold Table Programmatic Agreement* would be exceeded for
313 "Mixed Woodlands and Forest" and "Wet Savannah, Swamp, Baygall" habitat types (TxDOT,
314 2014c).

315
316 Observed Vegetation Type 1 (Emergent Wetland) corresponds to the Riparian type in the
317 MOU (**Photo 5** in **Appendix B**) (TxDOT 2014a). This type is dominated by woody canopy
318 species including sweetgum (*Liquidambar styraciflua*), cedar elm (*Ulmus crassifolia*), and
319 hackberry (*Celtis laevigata*). The sapling stratum is dominated by water oak (*Quercus nigra*),
320 mimosa (*Albizia julibrissin*), black willow (*Salix nigra*), redbud (*Cercis canadensis*), Chinese
321 tallow (*Triadica sebifera*), and sweetgum. A thick herbaceous layer is comprised of
322 predominately green flatsedge (*Cyperus virens*), striped knotweed (*Polygonum striatulum*),
323 sand spikerush (*Eleocharis montevidensis*), jointed flatsedge (*Cyperus articulatus*),
324 narrowleaf cattail (*Typha angustifolia*), giant ragweed (*Ambrosia trifida*), tievine (*Ipomoea*
325 *cordatotriloba*), Georgia bulrush (*Scirpus georgianus*), and eastern narrowleaf sedge (*Carex*
326 *amphibola*). Approximately 1.280 acres of Observed Vegetation Type 1 are located within
327 the project area. Approximately 0.072-acre of emergent wetland vegetation would be
328 impacted by the project.

329 *Table 3: Vegetation Types Mapped by EMST and Observed Vegetation Occurring within the Project Area*

EMST Mapped Vegetation Type	Mapped EMST Acres in Limits of Construction	Observed Vegetation Type	Observed Vegetation Acres in Limits of Construction	MOU Habitat Type*	MOU Threshold (acres)*	Threshold Exceeded?
Pineywoods: Disturbance or Tame Grassland	5.230	Previously Cleared Shrub-Scrub	2.213	Disturbed Prairie	3	No
Pine Plantation > 3 meters tall	0.200			Mixed Woodlands and Forest	0.5	
Pineywoods: Northern Mesic Hardwood Forest	1.105			Mixed Woodlands and Forest	0.5	
Pineywoods: Pine – Hardwood Forest or Plantation	1.614	Mixed Pines and Hardwoods	11.998	Mixed Woodlands and Forest	0.5	Yes
Pineywoods: Pine Forest or Plantation	2.019			Mixed Woodlands and Forest	0.5	
Pineywoods: Upland Hardwood Forest	9.305			Mixed Woodlands and Forest	0.5	
Open Water	0.233			Riparian	0.10	
Pineywoods: Small Stream and Riparian Temporarily Flooded Hardwood Forest	1.144	Emergent Wetland	0.072	Riparian	0.10	No
Pineywoods: Small Stream and Riparian Wet Prairie	0.925			Riparian	0.10	
Pineywoods: Hardwood Flatwoods	5.370	Sedge Meadow	0.173	Wet Savanna, Swamp, Baygall	0.10	Yes
Urban High Intensity	6.874	Maintained Herbaceous ROW	28.725	Urban	None	No
Urban Low Intensity	9.162			Urban	None	

*TxDOT 2014a

331 Observed Vegetation Type 2 (Maintained Herbaceous ROW) corresponds to the MOU
332 vegetation type Urban Low Intensity vegetation (**Photo 4 in Appendix B**) and is dominated by
333 bermudagrass (*Cynodon dactylon*), johnsongrass (*Sorghum halepense*), tumble windmill
334 grass (*Chloris verticillata*), and tievine (TxDOT 2014a). There is no existing canopy cover as
335 woody species are likely controlled to maintain sight lines along the ROW. Approximately
336 38.372 acres of Observed Vegetation Type 2 are located within the project area.
337 Approximately 28.725 acres of maintained herbaceous ROW vegetation would be impacted
338 by the project.

339
340 Observed Vegetation Type 3 (Mixed Pines and Hardwoods Vegetation) corresponds to the
341 Mixed Woodlands and Forest vegetation type in the MOU (**Photo 6 in Appendix B**) (TxDOT
342 2014a). It is dominated by shagbark hickory (*Carya ovata*), loblolly pine (*Pinus taeda*), water
343 oak (*Quercus nigra*), red maple (*Acer rubrum*), and mimosa. This vegetation type has a
344 height of 10 to 35 feet and an average diameter at breast height of 18 inches. The
345 sapling/shrub stratum is dominated by Chinese privet (*Ligustrum sinense*), water oak,
346 American elm (*Ulmus americana*), hackberry, and red maple. The herbaceous understory is
347 dominated by giant goldenrod (*Solidago gigantea*), giant ragweed, Johnsongrass, tievine,
348 muscadine (*Vitis rotundifolia*), Indian woodoats (*Chasmanthium latifolium*), and bristly
349 greenbrier (*Smilax hispida*). This observed vegetation type is generally associated with the
350 observed drainages and mapped stream channels within the project area. Approximately
351 19.977 acres of Observed Vegetation Type 3 are located within the project area.
352 Approximately 11.998 acres of mixed pines and hardwoods vegetation would be impacted
353 by the project.

354
355 Observed Vegetation Type 4 (Previously Cleared Shrub-Scrub) corresponds with the
356 disturbed prairie vegetation type in the MOU (**Photo 7 in Appendix B**) (TxDOT 2014a). It is
357 dominated by saplings/shrubs including green ash (*Fraxinus pennsylvanica*), water oak, and
358 box elder (*Acer negundo*). A thick covering of herbaceous vegetation includes southern
359 dewberry (*Rubus trivialis*), tievine, Indian woodoats, poison ivy (*Toxicodendron radicans*),
360 Johnsongrass, and Guadeloupe cucumber (*Melothria pendula*). This observed vegetation
361 type is generally associated with floodplain areas that have been previously cleared and root
362 plowed. Approximately 6.660 acres of Observed Vegetation Type 4 are located within the
363 project area. Approximately 2.213 acres of previously cleared shrub-scrub vegetation would
364 be impacted by the project.

365
366 Observed Vegetation Type 5 (Sedge Meadow Vegetation) corresponds with the Wet
367 Savanna, Swamp, Baygall vegetation type in the MOU (**Photo 8 in Appendix B**) (TxDOT
368 2014a). It is dominated by a thick canopy of American elm, water oak, and Shumard oak
369 (*Quercus shumardii*). Scattered sapling water oak, cedar elm (*Ulmus crassifolia*), and
370 Chinese privet are also present. A thick herbaceous monoculture of eastern narrowleaf
371 sedge dominates the understory. Approximately 0.173-acre of Observed Vegetation Type 5

372 is located within the project area. Approximately 0.173-acre of sedge meadow vegetation
373 would be impacted by the project.

374 *Special Habitat Features*

375 As defined in the *Tier II Site Assessment Programmatic Agreement* between TxDOT and
376 TPWD under the 2013 MOU, special habitat features can include bottomland hardwoods,
377 caves, cliffs and bluffs, native prairies, seeps or springs, snags or groups of snags, existing
378 bridges with known or observed bird or bat colonies, rookeries, and prairie dog towns (TxDOT
379 2014a). No bottomland hardwoods, caves, cliffs and bluffs, native prairies, seeps or springs,
380 or snags or groups of snags are located within the project area. No bird or bat colonies were
381 identified at any of the bridges or culverts within the project area. Grasslands occurring
382 within the project area do not constitute native prairie, as they contain a number of
383 introduced and/or invasive species.

384
385 Unusual vegetation features can include unmaintained vegetation; fencerow vegetation;
386 riparian vegetation; trees that are considered historically significant, ecologically significant,
387 or locally important; and unusual stands or islands of vegetation (TxDOT 2014a). Only 0.072
388 acre of impacts to an unusual vegetation feature (Riparian Vegetation) listed in **Table 3**
389 above are anticipated as a result of the proposed project.

390 *Invasive Species/Beneficial Landscaping*

391 During construction, efforts would be taken to avoid and minimize disturbance of vegetation
392 and soils. All disturbed areas would be restored and reseeded according to TxDOT's
393 Vegetation Management Guidelines and in compliance with the intent of EO 13112 on
394 Invasive Species as soon as practicable. In accordance with EO 13112 on Invasive Species,
395 the Executive Memorandum on Beneficial Landscaping, and the 1999 FHWA guidance on
396 invasive species, all revegetation would, to the extent practicable, use only native species.
397 Further, BMPs would be used to control and prevent the spread of invasive species.

398 *TPWD Coordination*

399 A Tier I site assessment was performed in accordance with the TxDOT-TPWD MOU to
400 determine whether coordination with TPWD would be required for the proposed project
401 (TxDOT 2014a). The Tier I site assessment defines the type and amount of habitat impacted
402 using information from the TCAP (Texas Conservation Action Plan); EMST; the Texas Natural
403 Diversity Database (TXNDD); county lists of Rare and Protected Species of Texas maintained
404 by TPWD; county lists of endangered, threatened, and candidate species maintained by the
405 U.S. Fish and Wildlife Service (USFWS); information collected during field investigations, and
406 the most current aerial photography available. **Table 4** lists the coordination triggers and
407 responses to each.

408 **Table 4: Tier I Site Assessment–TPWD Coordination Triggers**

Trigger	Applies to the Project?	Explanation
The project is within the range of a state threatened or endangered species or Species of Greatest Conservation Need (SGCN), as identified by the TPWD county list, and there is suitable habitat for the species within the project area unless BMPs as defined in the MOU are implemented as provided by a Programmatic Agreement (PA).	Yes	Habitat is present for eight state-threatened species: Louisiana pigtoe, Southern hickorynut, Texas heelsplitter, creek chubsucker, alligator snapping turtle, timber rattlesnake, wood stork, and Rafinesque’s bigeared bat. Additionally, habitat is present for two SGCNs: plains spotted skunk and southeastern myotis bat. BMPs for each of these species are defined in the MOU PA and as listed in Table 6 . The BMP for the creek chubsucker does not eliminate the need for coordination if work occurs in the water.
The project may adversely impact important remnant vegetation based on the judgment of a qualified biologist or as mapped in the TXNDD.	No	No important remnant vegetation was identified within the project area by qualified biologists or by the TXNDD.
The project requires a NWP with pre-construction notification or an individual permit issued by the USACE.	Yes	A PCN for the use of NWP 14 is anticipated as the project includes impacts to a special aquatic site (Wetland 3, Wetland 4, and Wetland 5).
The project’s TxDOT ROW or conservation, construction, or drainage easement includes more than 200 linear feet of stream channel for each single and complete crossing of one or more of the following (if it is not already channelized or otherwise maintained): (a) channel realignment; or (b) stream bed or stream bank excavation, scraping, clearing, or other permanent disturbance.	Yes	Impacts to 567 linear feet of intermittent stream channel are proposed at Crossing Location #6 (Waters C).
The project contains known isolated wetlands outside existing TxDOT ROW that will be directly impacted by the project.	No	No isolated wetlands outside existing ROW are currently known.
The project may impact at least 0.10 acre of riparian vegetation based on the judgment of a qualified biologist or as mapped in the EMST.	No	The project proposes to impact 0.072 acre of riparian habitat, as verified by qualified biologists.
The project disturbs habitat in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA.	Yes	The project exceeds thresholds set by the Threshold Table PA for “Mixed Woodlands and Forest”, and “Wet Savannah, Swamp, Baygall” habitat types (Table 3).

Source: TPWD MOU; Project Team 2016.

409
 410 As described in **Table 4**, the proposed project requires coordination with TPWD in
 411 accordance with the 2013 TxDOT-TPWD MOU (TxDOT 2014a) (Appendix D). Four triggers are
 412 met: the proposed project is within range and habitat for state-listed threatened species, the
 413 project may impact waters of the U.S. including up to 200 linear feet of stream channel at a
 414 single and complete crossing, and the project exceeds thresholds set by the Threshold Table
 415 PA (TxDOT 2014c). The project is also expected to require a NWP with PCN. The project
 416 exceeds thresholds set by the Threshold Table PA for “Mixed Woodlands and Forest” and
 417 “Wet Savannah, Swamp, Baygall” habitat types (TxDOT 2014c). A copy of the Biological
 418 Evaluation Form has been submitted and approved by TxDOT and will be available at the

419 Tyler District office. Early coordination with TPWD was initiated on April 12, 2016 and was
420 concluded on May 16, 2016.

421 *Migratory Bird Treaty Act of 1918*

422 The Migratory Bird Treaty Act (MBTA) of 1918 states that it is unlawful to kill, capture,
423 collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg
424 in part or in whole, without a Federal permit issued in accordance within the Act's policies
425 and regulations.

426
427 The project area was investigated for any structures containing migratory birds or indications
428 of nesting migratory birds. Swallow nests were identified at the Hawkins Creek Bridge but no
429 individuals were seen at the time of the site visit. There is potential for nesting birds to be
430 present in the project area during construction, and other migratory birds may arrive in the
431 project area to breed during construction of the proposed project.

432
433 Between October 1 and February 15, the contractor would remove all old migratory bird
434 nests from any structure that would be affected by the proposed project, and complete any
435 bridge work/demolition. In addition, the contractor would be prepared to prevent migratory
436 birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting
437 and bird-repelling sprays and/or gels, between February 15 and October 1. In the event that
438 migratory birds are encountered on-site during project construction, adverse impacts on
439 protected birds, active nests, eggs, and/or young would be avoided. Measures would be
440 taken to avoid the take of migratory birds, their occupied nests, eggs, or young, in
441 accordance with the MBTA, through phasing of work or preventative measures.

442 *Fish and Wildlife Coordination Act*

443 Any impacts to waters of the U.S. would likely be authorized under the USACE Section 404
444 CWA NWP Program; therefore, no coordination under the Fish and Wildlife Coordination Act
445 would be required.

446 5.2.5 Threatened/Endangered Species

447 5.2.5.1 *No-Build Alternative*

448 No effects or impacts to Federally-listed or state-listed threatened or endangered species, or
449 SGCN would result from the No-Build Alternative.

450 5.2.5.2 *Build Alternative*

451 *Endangered Species Act*

452 The Endangered Species Act affords protection for Federally-listed threatened and
453 endangered species and their habitats. State law prohibits direct harm to state-listed
454 species. SGCNs are designated by TPWD, and may be either Federally-listed or state-listed
455 species, or have no regulatory listing status.

456
457 Lists of threatened and endangered species maintained by the USFWS and TPWD were
458 consulted to determine species of potential occurrence in the vicinity of the proposed
459 project. **Table 5** lists the Federally-listed and state-listed threatened and endangered
460 species and SGCNs of potential occurrence in Gregg County, along with habitat descriptions
461 for each species, a determination of whether appropriate habitat for the species occurs
462 within the project area, and a discussion of potential effects/impacts to the species. Field
463 investigations were performed by qualified biologists in August 2015 and March 2016.

464 Table 5: Threatened, Endangered, and Species of Greatest Conservation Need of Potential Occurrence
 465 in Gregg County, Texas

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Plants						
Earth fruit (Tinytim) <i>Geocarpon minimum</i>	LT+	T	In Texas, found on vegetated edges of slick spots in saline barren complex just above floodplain of Neches River. Soils are claypan, hold late winter rains, and have a spongy feel; they dry quickly into hardened cement. Topography includes pimple mounds with micro highs/lows. Occurs in open, sparingly vegetated glades on shallow soils over sandstone outcrops, sometimes in shallow depressions within such areas and saline prairies. These soils are very thin and high in magnesium or sodium and are mostly found on the cryptogamic lip along slick spot perimeters, flowering late February-March	No	No effect	No slick spots in saline floodplains above the Neches River are located within the project area.
Panicled indigobush <i>Amorpha paniculata</i>	NL	SGCN	A stout shrub, 3 m (9 ft) tall that grows in acid seep forests, peat bogs, wet floodplain forests, and seasonal wetlands on the edge of Saline Prairies in East Texas. It is distinguished from other <i>Amorpha</i> species by its fuzzy leaflets with prominent raised veins underneath, and the flower panicles, which are 8 to 16 inches long and slender, held above the foliage	No	No impact	No acid seep forests or peat bogs on the edge of Saline Prairies are located within the project area.
Mollusks						
Louisiana pigtoe <i>Pleurobema riddellii</i>	NL	T	Streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel. Not generally known from impoundments. Found in the Sabine, Neches, and Trinity (historic) River basins	Yes	May impact	Hawkins Creek is a perennial stream channel with sluggish flows over substrates of gravel and sand.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Sandbank pocketbook <i>Lampsilis satura</i>	NL	T	Small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms. In east Texas: Sulfur south through San Jacinto River basins; Neches River	No	No impact	No small to large rivers are located within the project area.
Southern hickorynut <i>Obovaria jacksoniana</i>	NL	T	Medium sized gravel substrates with low to moderate current. Found in Neches, Sabine, and Cypress River basins	Yes	May impact	Hawkins Creek is a perennial stream channel with sluggish flows over substrates of gravel and sand.
Texas heelsplitter <i>Potamilus amphichaenus</i>	NL	T	Quiet waters in mud or sand and also in reservoirs. Found in Sabine, Neches, and Trinity River basins	Yes	May impact	Hawkins Creek is a perennial stream channel with sluggish flows over substrates of gravel and sand.
Texas pigtoe <i>Fusconaia askewi</i>	NL	T	Rivers with mixed mud, sand, and fine gravel in protected areas associated with fallen trees or other structures. Found in east Texas river basins, Sabine through Trinity Rivers as well as San Jacinto River	No	No impact	No rivers are located within the project area.
Fishes						
Blackside darter <i>Percina maculata</i>	NL	T	Red, Sulfur, and Cypress River basins. Found in clear, gravelly streams; prefers pools with some current, or even quiet pools, to swift riffles	No	No impact	The project area is not located within the Red, Sulfur, or Cypress River basins.
Blue sucker <i>Cycleptus elongatus</i>	NL	T	Larger portions of major rivers in Texas; usually found in channels and flowing pools with a moderate current and a bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel. Adults winter in deep pools and move upstream in spring to spawn on riffles	No	No impact	No rivers are located within the project area.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Creek chubsucker <i>Erimyzon oblongus</i>	NL	T	Found in tributaries of the Red, Sabine, Neches, Trinity, and San Jacinto Rivers, and small rivers and creeks of various types. Seldom found in impoundments; prefers headwaters, but seldom occurs in springs. Young typically found in headwater rivulets or marshes; spawns in river mouths or pools, riffles, lake outlets, and upstream creeks	Yes	May impact	Several intermittent headwater stream channels which flow to the Sabine River are located within the project area.
Ironcolor shiner <i>Notropis chalybaeus</i>	NL	SGCN	Found in the Big Cypress Bayou and Sabine River basins. Spawns April-September, eggs sink to bottom of pool. Found in pools and slow runs of low gradient small acidic streams with sandy substrate and clear well-vegetated water. Feeds mainly on small insects; ingested plant material not digested	No	No impact	No clear well-vegetated waters are located within the project area.
Orangebelly darter <i>Etheostoma radiosum</i>	NL	SGCN	Red through Angelina River basins. Found just in headwaters ranging from high gradient streams to more sluggish lowland streams; gravel and rubble riffles preferred. Eggs buried in gravel and riffle raceways. Post-larvae live in quiet water, move into progressively faster water as they mature. Young feed mostly on copepods and cladocerans, adults on mayfly and fly larvae. They spawn from late February through mid-April in eastern Texas	No	No impact	Gravel and rubble riffles are not located within the project area.
Paddlefish <i>Polyodon spathula</i>	NL	T	Prefers large, free-flowing rivers, but will frequent impoundments with access to spawning sites. Spawns in fast, shallow water over gravel bars; larvae may drift from reservoir to reservoir.	No	No impact	No rivers are located within the project area.
Western sand darter <i>Ammocrypta clara</i>	NL	SGCN	Found in Red and Sabine River basins, in clear to slightly turbid water of medium to large rivers that have moderate to swift currents, primarily over extensive areas of sandy substrate.	No	No impact	No medium to large rivers are located within the project area.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Reptiles						
Alligator snapping turtle <i>Macrochelys temminckii</i>	NL	T	Found in perennial water bodies: deep water of rivers, canals, lakes, and oxbows; swamps; bayous; ponds near deep running water; and brackish coastal waters. Usually in water with mud bottom and abundant aquatic vegetation. Active March-October; breeds April-October.	Yes	May impact	Hawkins Creek is a perennial stream channel located within the project area.
Northern scarlet snake <i>Cemophora coccinea copei</i>	NL	T	Found in mixed hardwood scrub on sandy soils, feeds on reptile eggs, is semi-fossorial, and is active April-September.	No	No impact	No mixed hardwood scrub is located within the project area.
Timber rattlesnake <i>Crotalus horridus</i>	NL	T	Found in swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland, and limestone bluffs in sandy soil or black clay. Prefers dense ground cover (i.e. grapevines or palmetto).	Yes	May impact	The species could occur within the project area. Floodplains, woodlands, and riparian zones are all located within the project area.
Birds						
American peregrine falcon <i>Falco peregrinus anatum</i>	DL	T	Resident of west Texas, migrant across the rest of the state, and winters along coast. Occupies a wide range of habitats during migration, including urban stopovers at leading landscape edges.	No	No impact	The species is a potential migrant.
Arctic peregrine falcon <i>Falco peregrinus tundrius</i>	DL	SGCN	Migrant throughout state from far northern breeding range and winters along the coast. Occupies a wide range of habitats during migration, including urban stopovers at leading landscape edges.	No	No impact	The species is a potential migrant.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Bachman's Sparrow <i>Aimophila aestivalis</i>	NL	T	Found in open pine woods with scattered bushes and grassy understory in Pineywoods region, brushy or overgrown grassy hillsides, overgrown fields with thickets and brambles, grassy orchards, and remnant grasslands in Post Oak Savannah region. Nests on ground against grass tuft or under low shrub.	No	No impact	No open pine woods with scattered bushes and grassy understory are located within the project area.
Bald eagle <i>Haliaeetus leucocephalus</i>	DL	T	Found primarily near rivers and large lakes. Nests in tall trees or on cliffs near water.	No	No impact	Nesting/roosting habitat does not occur within the project area. The species is a potential migrant.
Henslow's sparrow <i>Ammodramus henslowii</i>	NL	SGCN	Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles. A key habitat component is bare ground for running/walking	No	No impact	No weedy fields with vines and bare ground occur within the project area.
Interior least tern <i>Sterna antillarum athalassos</i>	LE	E	Nests along sand and gravel bars within braided streams and rivers. Also known to nest on man-made structures along streams or rivers.	No	No effect	No sand or gravel bars within braided streams occur within the project area.
Peregrine Falcon <i>Falco peregrinus</i>	DL	T	Both subspecies migrate across the state from more northern breeding areas in the U.S. and Canada to winter along the coast and farther south. <i>Subspecies F. p. anatum</i> is also a resident breeder in west Texas. The two subspecies' listing statuses differ: <i>F.p. tundrius</i> is no longer listed in Texas. But because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	No	No impact	The species is a potential migrant.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Piping plover <i>Charadrius melodus</i>	LT	T	Wintering migrant along the Texas Gulf Coast in beaches and bayside mud or salt flats.	No	No effect	No suitable wintering or nesting habitat is located within the project area. The species is a potential migrant.
Red Knot <i>Calidris canutus</i>	LT	NL	Forages along the Texas coast on beaches, estuaries, oyster reefs, and intertidal rocky shore. Nests in sparsely vegetated areas of rock or tundra characterized by strong winds; lives in close proximity to shoreline.	No	No effect	No suitable wintering or nesting habitat is located within the project area. The species is a potential migrant.
Sprague's pipit <i>Anthus spragueii</i>	C†	SGCN	Only in Texas from mid-September to early April. Strongly tied to native upland prairie; sensitive to patch size and avoids edges.	No	No effect	No native upland prairie occurs within the project area.
Wood stork <i>Mycteria Americana</i>	NL	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow water, including saltwater. Roosts communally in tall snags in active heronries; breeds in Mexico.	Yes	May impact	A single pond and several emergent wetlands with shallow surface water occur within the project area. No communal roosts were observed within the project area.
Mammals						
Black bear <i>Ursus americanus</i>	NL	T	Found in bottomland hardwoods and large tracts of inaccessible forested areas. Due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as Federal and state-listed Threatened species.	No	No impact	No large tracts of inaccessible forested areas are located within the project area.
Louisiana black bear <i>Ursus americanus luteolus</i>	DL	T	Possibly present as a transient. Found in bottomland hardwoods and large tracts of inaccessible forested areas.	No	No impact	No large tracts of inaccessible forested areas are located within the project area.

Species	Federal Status*	State Status*	Species/Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Plains spotted skunk <i>Spilogale putorius interrupta</i>	NL	SGCN	Catholic, found in open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	Yes	May impact	The species could occur within forest edges, wooded areas, and farmland within the project area.
Rafinesque's big-eared bat <i>Corynorhinus rafinesquii</i>	NL	T	Roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures.	Yes	May impact	Concrete culverts exist within the project area. The species could occur within the project area.
Red wolf <i>Canis rufus</i>	LE†	E	Extirpated; formerly known throughout the eastern half of Texas.	No	No effect	The species is extirpated and is not expected to occur within the project area.
Southeastern myotis bat <i>Myotis austroriparius</i>	NL	SGCN	Roosts in cavities of bottomland hardwood trees, concrete culverts, and abandoned man-made structures.	Yes	May impact	Concrete culverts exist within the project area. The species could occur within the project area.

Sources: TPWD. *Annotated County Lists of Rare Species: Gregg County* (last revision 2/16/2016). <http://tpwd.texas.gov/gis/rtest/>, accessed February 17, 2016.

TPWD. *Texas Conservation Action Plan: Species of Greatest Conservation Need – Western Gulf Coastal Plains*.

<http://www.tpwd.state.tx.us/landwater/land/tcap/sgcn.phtml>, accessed January 21, 2015. USFWS. *Information for Planning and Conservation*.

<https://ecos.fws.gov/ipac/>, Official Species List, accessed February 17, 2016.

*Status Codes:

DL= Delisted

NL = Not Listed

E = State-Listed Endangered

SGCN = Species of Greatest Conservation Need

LE = Federally-Listed Endangered

T = State-Listed Threatened

LT = Federally-Listed Threatened

T/SA= Threatened by Similarity of Appearance

†Species not recognized by the USFWS as occurring within the project area but designated by TPWD as potentially occurring within the county.

467 *Texas Natural Diversity Database*

468 TPWD maintains the TXNDD (TPWD 2014), which provides information regarding recorded
469 occurrences of rare species and habitats. The TXNDD was consulted on February 29, 2016,
470 using data obtained from TPWD. Numerous USGS 7.5-minute topographic quadrangle maps
471 for the project area and surrounding vicinity were reviewed for the known locations of
472 species; maps reviewed include: *Ashland, Big Sandy, Easton, Elderville, Gilmer, Gladewater,*
473 *Glenwood, Hallsville, Harleton, Kilgore NE, Kilgore NW, Kilgore SE, Kilgore SW, Lakeport,*
474 *Longview Heights, Pritchett, Starrville, Tatum, and White Oak.* There are no Elements of
475 Occurrence records for any state-listed or Federally-listed threatened or endangered species
476 within 1.5 miles of the proposed project area.

477 *Effects to Federally-Listed Threatened and Endangered Species*

478 The project would have no effect on Federally-listed threatened or endangered species.

479 *Bald and Golden Eagle Protection Act*

480 No bald or golden eagles or their habitats were identified within the project area during field
481 investigations as verified by a qualified biologist. The project does not have the potential to
482 impact Bald or Golden Eagles.

483

484 *Impacts to State-Listed Species*

485 Habitat is present for eight state-threatened species: Louisiana pigtoe (*Pleurobema riddellii*),
486 Southern hickorynut (*Obovaria jacksoniana*), Texas heelsplitter (*Potamilus amphichaenus*),
487 creek chubsucker (*Erimyzon oblongus*), alligator snapping turtle (*Macrochelys temminckii*),
488 timber rattlesnake (*Crotalus horridus*), wood stork (*Mycteria americana*), and Rafinesque's
489 bigeared bat (*Corynorhinus rafinesquii*). No individuals of these species were identified
490 during field investigations. Although individuals of these species may be impacted through
491 removal of suitable habitat or disturbance due to construction activities, the species as a
492 whole are not likely to be adversely impacted.

493 *Impacts to SGCNs*

494 Habitat is present for two SGCNs: Plains spotted skunk (*Spilogale putorius interrupta*) and
495 Southeastern myotis bat (*Myotis austroriparius*). No individuals of these species were
496 identified during field investigations. Although individuals of these species may be impacted,
497 the species as a whole are not likely to be adversely impacted.

498 *BMPs for State-Listed Species and SGCNs*

499 In accordance with the *Best Management Practices Programmatic Agreement between*
500 *TxDOT and TPWD Under the 2013 MOU*, BMPs have been defined for implementation by
501 TxDOT in order to minimize impacts to Federally-listed and state-listed species and SGCNs
502 (TxDOT 2014a). **Table 6** lists the BMPs related to species that may be impacted by the
503 proposed project.

504

	Species Name	BMP
State-Listed Species	Louisiana pigtoe	When work is in the water, survey project footprints for state-listed species where appropriate habitat exists.
	Southern hickorynut	When work is in the water and mussels are discovered during surveys, relocate mussels under TPWD permit and implement Water Quality BMPs.
	Texas heelsplitter	When work is adjacent to the water, Water Quality BMPs implemented as part of the SW3P for a CGP or any conditions of the 401 water quality certification for the project will be implemented.
	Creek chubsucker	For projects within the range of a SGCN or state-listed fish, for which project work is adjacent to water: Water Quality BMPs for SW3P and 401 water quality only. No TPWD coordination required. For projects within the range of a SGCN or state-listed fish, for which project work is in the water: TPWD coordination required.
	Alligator snapping turtle	Minimize impacts to wetland and riverine habitats. Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
	Timber rattlesnake	Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered
Species of Greatest Conservation Need	Wood stork	No disturbance, destruction, or removal of active nests, including ground nesting birds, during the nesting season. Avoid the removal of unoccupied, inactive nests, as practicable. Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair. No collection, capture, relocation, or transport of birds, eggs, young, or active nests without a permit.
	Rafinesque's big-eared bat	Large hollow trees should be surveyed for maternity colonies and, if found, should not be disturbed until after the pups fledge.
	Plains spotted skunk	Contractors will be advised of potential occurrence in the project area, to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.
	Southeastern myotis bat	A qualified biologist will conduct a habitat assessment to determine if bats are present. If bats are present, take appropriate measures, such as exclusion or timing activities, as practicable to ensure that bats are not harmed. For maternity colonies, exclusion activities should be timed to avoid separating lactating females from nursing pups. If structures 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.

Source: Best Management Practices Programmatic Agreement between TxDOT and TPWD Under the 2013 MOU.

507 5.2.6 Air Quality

508 5.2.6.1 *No-Build Alternative*

509 Implementation of the No-Build Alternative would lead to increased traffic congestion and
510 decreased mobility along FM 2206, resulting in decreased vehicular speed and increased
511 stop-and-go traffic. However, EPA's new fuel and vehicle standards are projected to reduce
512 emissions of air pollutants and MSAT and to contribute to continued maintenance and
513 improvement of air quality regardless of the alternative chosen.

514 5.2.6.2 *Build Alternative*

515 The proposed project is located in Gregg County, which is an area in attainment or
516 unclassifiable for all national ambient air quality standards (NAAQS); therefore,
517 transportation conformity rules do not apply.

518 *Traffic Air Quality Analysis*

519 Traffic data for the design year (2032) ranges from 6,800 vpd between SH 42 and Fisher
520 Road to 10,000 vpd between Fisher Road and SL 281. A prior TxDOT modeling study and
521 previous analyses of similar projects demonstrated that it is unlikely that a carbon monoxide
522 standard would ever be exceeded as a result of any project with an Annual Average Daily
523 Traffic (AADT) below 140,000 (TxDOT 2014d). The AADT projections for the project do not
524 exceed 140,000 vpd; therefore, a Traffic Air Quality Analysis is not required.

525 *Congestion Management Process*

526 This project is located in an area that is in attainment or unclassifiable for all NAAQS;
527 therefore, a Congestion Management Process analysis is not required.

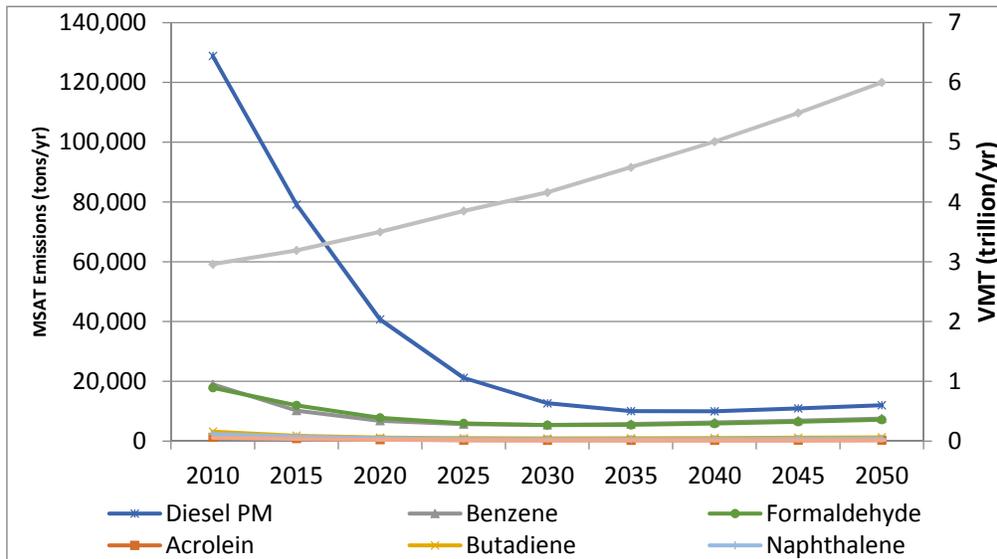
528 *Mobile Source Air Toxics Background*

529 Controlling air toxic emissions became a national priority with the passage of the Clean Air
530 Act Amendments of 1990, whereby Congress mandated that the U.S. Environmental
531 Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The
532 EPA assessed this expansive list in their latest rule, *Control of Hazardous Air Pollutants from*
533 *Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007)*, and
534 identified a group of 93 compounds emitted from mobile sources that are listed in their
535 Integrated Risk Information System (IRIS) (EPA 2016). In addition, EPA identified seven
536 compounds with significant contributions from mobile sources that are among the national-
537 and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment
538 (NATA) (TCEQ 1999). These are acrolein; benzene; 1,3-butadiene; diesel particulate matter
539 plus diesel exhaust organic gases (diesel PM); formaldehyde; naphthalene; and polycyclic
540 organic matter. While FHWA considers these the priority mobile source air toxics, the list is
541 subject to change and may be adjusted in consideration of future EPA rules.

542
543 The 2007 EPA Mobile Source Air Toxics (MSAT) rule mentioned above requires controls that
544 will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines.

545 Based on an FHWA analysis using EPA’s MOVES2010b model, as shown in **Exhibit 1** and
 546 **Table 7**, even if vehicle miles traveled (VMT) increases by 102% as assumed from 2010 to
 547 2050, a combined reduction of 83% in the total annual emissions for the priority MSAT is
 548 projected for the same time period.

549 *Exhibit 1: Projected National MSAT Emission Trends 2010–2050 For Vehicles*
 550 *Operating on Roadways Using EPA’s MOVES2010b Model*
 551



552
 553 Source: **Table 7** below.

554 Note: Trends for specific locations may be different, depending on locally derived information representing VMT, vehicle
 555 speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

556
 557 Air toxics analysis is a continuing area of research. While much work has been done to
 558 assess the overall health risk of air toxics, many questions remain unanswered. In particular,
 559 the tools and techniques for assessing project-specific health outcomes as a result of
 560 lifetime MSAT exposure remain limited. These limitations impede evaluation of how the
 561 potential health risks posed by MSAT exposure should be factored into project-level
 562 decision-making within the context of the NEPA. The FHWA, EPA, Health Effects Institute
 563 (HEI), and others have funded and conducted research studies to try to more clearly define
 564 potential risks from MSAT emissions associated with highway projects. The FHWA will
 565 continue to monitor the developing research in this emerging field.

566

567 *Table 7: Projected National MSAT Emission Trends 2010–2050 for*
 568 *Vehicles Operating on Roadways Using EPA’s MOVES2010b*
 569 *Model*

Pollutant / VMT	Pollutant Emissions (tons) and Vehicle-Miles Traveled (VMT) by Calendar Year									% Change 2010 to 2050
	2010	2015	2020	2025	2030	2035	2040	2045	2050	
Acrolein	1,244	805	476	318	258	247	264	292	322	-74
Benzene	18,995	10,195	6,765	5,669	5,386	5,696	6,216	6,840	7,525	-60
Butadiene	3,157	1,783	1,163	951	890	934	1,017	1,119	1,231	-61
Diesel PM	128,847	79,158	40,694	21,155	12,667	10,027	9,978	10,942	11,992	-91
Formaldehyde	17,848	11,943	7,778	5,938	5,329	5,407	5,847	6,463	7,141	-60
Naphthalene	2,366	1,502	939	693	607	611	659	727	802	-66
Polycyclics	1,102	705	414	274	218	207	219	240	262	-76
Trillions VMT	2.96	3.19	3.5	3.85	4.16	4.58	5.01	5.49	6.0	102

Source: EPA MOVES2010b model runs conducted during May–June 2012 by FHWA.

570
 571 A qualitative analysis provides a basis for identifying and comparing the potential
 572 differences between MSAT emissions, if any, from the No-Build and Build alternatives. The
 573 qualitative assessment presented below is derived in part from a study conducted by the
 574 FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among*
 575 *Transportation Project Alternatives* (Clagett 2006).

576 *Project Specific Mobile Source Air Toxics Information*

577 For the Build Alternatives, the amount of MSAT emitted would be proportional to the VMT,
 578 assuming that other variables such as fleet mix are the same for each alternative. The VMT
 579 estimated for the Build Alternative is slightly higher than that for the No-Build Alternative,
 580 because the additional capacity increases the efficiency of the roadway and attracts
 581 rerouted trips from elsewhere in the transportation network. This increase in VMT would lead
 582 to higher MSAT emissions for the preferred action alternative along the roadway corridor,
 583 along with a corresponding decrease in MSAT emissions along the parallel routes. The
 584 emissions increase is offset somewhat by lower MSAT emission rates due to increased
 585 speeds; according to EPA's MOVES2010b model, emissions of all of the priority MSATs
 586 decrease as speed increases. Also, regardless of the alternative chosen, emissions will likely
 587 be lower than present levels in the design year as a result of EPA's national control programs
 588 that are projected to reduce annual MSAT emissions by over 80% between 2010 and 2050.
 589 Local conditions may differ from these national projections in terms of fleet mix and
 590 turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-
 591 projected reductions is so great (even after accounting for VMT growth) that MSAT emissions
 592 in the study area are likely to be lower in the future in nearly all cases.

593

594 The additional travel lanes contemplated as part of the Build Alternative will have the effect
595 of moving some traffic closer to nearby homes, schools, and businesses; therefore, there
596 may be localized areas where ambient concentrations of MSAT could be higher under the
597 Build Alternative than the No-Build Alternative. It is likely that the urbanized eastern portion
598 of the project area would have the biggest impact on localized emissions due to likely higher
599 traffic volumes and idling times. However, the magnitude and the duration of these potential
600 increases compared to the No-Build Alternative cannot be reliably quantified due to
601 incomplete or unavailable information in forecasting project-specific MSAT health impacts.
602 In sum, when a highway is widened, the localized level of MSAT emissions for the Build
603 Alternative could be higher relative to the No-Build Alternative, but this could be offset due
604 to increases in speeds and reductions in congestion (which are associated with lower MSAT
605 emissions). Also, MSAT will be lower in other locations when traffic shifts away from them.
606 However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover,
607 will over time cause substantial reductions that, in almost all cases, will cause region-wide
608 MSAT levels to be significantly lower than today.

609 *Incomplete or Unavailable Information for the Project*

610 In FHWA's view, information is incomplete or unavailable to credibly predict the project-
611 specific health impacts due to changes in MSAT emissions associated with a proposed set
612 of highway alternatives. The outcome of such an assessment, adverse or not, would be
613 influenced more by the uncertainty introduced into the process through assumption and
614 speculation rather than any genuine insight into the actual health impacts directly
615 attributable to MSAT exposure associated with a proposed action.

616
617 The EPA is responsible for protecting the public health and welfare from any known or
618 anticipated effect of an air pollutant. They are the lead authority for administering the Clean
619 Air Act (CAA) and its amendments and have specific statutory obligations with respect to
620 hazardous air pollutants and MSAT. The EPA is continually assessing human health effects,
621 exposures, and risks posed by air pollutants. They maintain the IRIS, which is "a compilation
622 of electronic reports on specific substances found in the environment and their potential to
623 cause human health effects" (EPA, 2016). Each report contains assessments of non-
624 cancerous and cancerous effects for individual compounds and quantitative estimates of
625 risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an
626 order of magnitude.

627
628 Other organizations are also active in the research and analyses of the human health effects
629 of MSAT, including the HEI. Two HEI studies are summarized in Appendix D of FHWA's
630 *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (FHWA
631 2012). Among the adverse health effects linked to MSAT compounds at high exposures are
632 cancer in humans in occupational settings, cancer in animals, and irritation to the
633 respiratory tract, including the exacerbation of asthma. Less obvious are the adverse human

634 health effects of MSAT compounds at current environmental concentrations (HEI, 2007) or
635 in the future as vehicle emissions substantially decrease (HEI, 2009).

636
637 The methodologies for forecasting health impacts include emissions modeling, dispersion
638 modeling, exposure modeling, and then final determination of health impacts – each step in
639 the process building on the model predictions obtained in the previous step. All are
640 encumbered by technical shortcomings or uncertain science that prevents a more complete
641 differentiation of the MSAT health impacts among a set of project alternatives. These
642 difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because
643 unsupportable assumptions would have to be made regarding changes in travel patterns
644 and vehicle technology (which affects emissions rates) over that time frame, and such
645 information is unavailable.

646
647 It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and
648 exposure near roadways, to determine the portion of time that people are actually exposed
649 at a specific location, and to establish the extent attributable to a proposed action,
650 especially given that some of the information needed is unavailable.

651
652 There are considerable uncertainties associated with the existing estimates of toxicity of the
653 various MSAT because of factors such as low-dose extrapolation and translation of
654 occupational exposure data to the general population, a concern expressed by HEI (2007).
655 As a result, there is no national consensus on air dose-response values assumed to protect
656 the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA
657 (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI
658 (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for
659 quantitative risk assessment of diesel PM in ambient settings.

660
661 There is also no national consensus on an acceptable level of risk. The current decision
662 framework is the process used by the EPA as directed by the CAA to determine whether
663 more stringent controls are required in order to provide an ample margin of safety to protect
664 public health or to prevent an adverse environmental effect from industrial sources subject
665 to the maximum achievable control technology standards, such as benzene emissions from
666 refineries. The decision framework is a two-step process. The first step requires EPA to
667 determine an “acceptable” level of risk due to emissions from a source, which is generally
668 no greater than approximately 100 in a million. Additional factors are considered in the
669 second step, the goal of which is to maximize the number of people with risks less than 1 in
670 a million due to emissions from a source. The results of this statutory two-step process do
671 not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in
672 some cases, the residual risk determination could result in maximum individual cancer risks
673 that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of

674 Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its
675 two-step decision framework (FHWA 2015a).

676
677 The information needed to establish that even the largest of highway projects would result in
678 levels of risk greater than deemed acceptable is incomplete or unavailable. Because of the
679 limitations in the methodologies for forecasting health impacts, any predicted difference in
680 health impacts between alternatives is likely to be much smaller than the uncertainties
681 associated with predicting the impacts. Consequently, the results of such assessments
682 would not be useful to decision makers, who would need to weigh this information against
683 project benefits, such as reducing traffic congestion, accident rates, and fatalities plus
684 improving access for emergency response, that are better suited for quantitative analysis.

685 *Conclusion*

686 In conclusion, a qualitative MSAT assessment has been provided relative to the Build and
687 No-Build Alternatives of MSAT emissions. This assessment acknowledges that both the Build
688 and No-Build Alternatives may result in increased exposure to MSAT emissions in certain
689 locations, although the concentrations and duration of exposures are uncertain, and
690 because of this uncertainty, the health effects from these emissions cannot be
691 quantitatively estimated.

692 *Air Quality Construction Emissions Reduction Strategies*

693 During the construction phase of this project, temporary increases in PM and MSAT
694 emissions may occur from construction activities. The primary construction-related
695 emissions of PM are fugitive dust from site preparation, and the primary construction-related
696 emissions of MSAT are diesel particulate matter from diesel powered construction
697 equipment and vehicles.

698
699 The potential impacts of particulate matter emissions will be minimized by using fugitive
700 dust control measures contained in standard specifications, as appropriate. The Texas
701 Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from
702 vehicles and equipment. TxDOT encourages construction contractors to use this and other
703 local and federal incentive programs to the fullest extent possible to minimize diesel
704 emissions. Information about the TERP program can be found at:
705 <http://www.tceq.state.tx.us/implementation/air/terp/>.

706
707 However, considering the temporary and transient nature of construction-related emissions,
708 the use of fugitive dust control measures, the encouragement of the use of TERP, and
709 compliance with applicable regulatory requirements; it is not anticipated that emissions
710 from construction of this project will have any significant impact on air quality in the area.

711 5.2.7 Traffic Noise

712 5.2.7.1 *No-Build Alternative*

713 Highway traffic is the dominant source of noise in developed areas adjacent to the proposed
714 project. Under the No-Build Alternative, additional noise impacts as a result of construction
715 activities or increased traffic volumes would not occur because no facility would be
716 constructed.

717 5.2.7.2 *Build Alternative*

718 This analysis was accomplished in accordance with TxDOT's FHWA-approved *Guidelines for*
719 *Analysis and Abatement of Roadway Traffic Noise* (TxDOT 2011).

720

721 Sound from highway traffic is generated primarily from a vehicle's tires, engine, and exhaust.
722 It is commonly measured in decibels and is expressed as "dB."

723

724 Sound occurs over a wide range of frequencies. However, not all frequencies are detectable
725 by the human ear; therefore, an adjustment is made to the high and low frequencies to
726 approximate the way an average person hears traffic sounds. This adjustment is called A-
727 weighting and is expressed as "dB(A)."

728

729 Also, because traffic sound levels are never constant due to the changing number, type and
730 speed of vehicles, a single value is used to represent the average or equivalent sound level
731 and is expressed as "Leq."

732

733 The traffic noise analysis includes the following elements:

- 734
- 735 ▪ Identification of land use activity areas that might be impacted by traffic noise
 - 736 ▪ Determination of existing noise levels
 - 737 ▪ Prediction of future noise levels
 - 738 ▪ Identification of possible noise impacts
 - 739 ▪ Consideration and evaluation of measures to reduce noise impacts

740

741 The FHWA has established the following Noise Abatement Criteria (NAC) for various land use
742 activity areas that are used as one of two means to determine when a traffic noise impact
would occur (**Table 8**).

743 **Table 8: Noise Abatement Criteria**

Activity Category	dB(A) Leq	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential.
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

744

745 A noise impact occurs when either the absolute or relative criterion is met:

- 746 ▪ Absolute criterion: the predicted noise level at a receiver approaches, equals, or
747 exceeds the NAC. "Approach" is defined as one dB(A) below the NAC. For example: a
748 noise impact would occur at a Category B residence if the noise level is predicted to
749 be 66 dB(A) or above.
- 750 ▪ Relative criterion: the predicted noise level substantially exceeds the existing noise
751 level at a receiver even though the predicted noise level does not approach, equal, or
752 exceed the NAC. "Substantially exceeds" is defined as more than 10 dB(A). For
753 example: a noise impact would occur at a Category B residence if the existing level is
754 54 dB(A) and the predicted level is 65 dB(A).

755

756 When a traffic noise impact occurs, noise abatement measures must be considered. A noise
757 abatement measure is any positive action taken to reduce the impact of traffic noise on an
758 activity area.

759

760 The FHWA traffic noise modeling software was used to calculate existing and predicted
 761 traffic noise levels. The model primarily considers the number, type, and speed of vehicles;
 762 highway alignment and grade; cuts, fills, and natural berms; surrounding terrain features;
 763 and the locations of activity areas likely to be impacted by the associated traffic noise.

764

765 Existing and predicted traffic noise levels were modeled at receiver locations (**Table 9** and
 766 **Figure 8**) that (1) represent the land use activity areas adjacent to the proposed project, (2)
 767 might be impacted by traffic noise, and (3) might potentially benefit from feasible and
 768 reasonable noise abatement.

769 *Table 9: Traffic Noise Levels*

Representative Receiver		NAC Category	FHWA NAC Level dB(A) Leq Interior/ Exterior	Existing dB(A) Leq (2012)	Predicted dB(A) Leq (2032)	Change (+/-)	Noise Impact
R1	Single-family Residence	B (Residence)	67 Exterior	59	64	+5	No
R2	Single-family Residence	B (Residence)	67 Exterior	56	60	+4	No
R3	Single-family Residence	B (Residence)	67 Exterior	53	60	+7	No
R4	Single-family Residence	B (Residence)	67 Exterior	53	58	+5	No
R5	Single-family Residence	B (Residence)	67 Exterior	53	60	+7	No
R6	Single-family Residence	B (Residence)	67 Exterior	56	64	+8	No
R7	Single-family Residence	B (Residence)	67 Exterior	62	56	-6	No
R8	Lakeview Cemetery	C (Cemetery)	67 Exterior	58	61	+3	No
R9	Lakeview Funeral Home	C (Funeral Home)	52 Interior	36	40	+4	No
R10	Single-family Residence	B (Residence)	67 Exterior	52	56	+4	No
R11	Single-family Residence	B (Residence)	67 Exterior	50	56	+6	No
R12	Single-family Residence	B (Residence)	67 Exterior	48	54	+6	No

Representative Receiver		NAC Category	FHWA NAC Level dB(A) Leq Interior/ Exterior	Existing dB(A) Leq (2012)	Predicted dB(A) Leq (2032)	Change (+/-)	Noise Impact
R13	Single-family Residence	B (Residence)	67 Exterior	52	58	+6	No
R14	Single-family Residence	B (Residence)	67 Exterior	53	57	+4	No
R15	Single-family Residence	B (Residence)	67 Exterior	52	56	+4	No
R16	Single-family Residence	B (Residence)	67 Exterior	55	59	+4	No
R17	Single-family Residence	B (Residence)	67 Exterior	52	56	+4	No
R18	Palabra Miel Iglesia de Jesucristo	C (Church)	67 Exterior	59	59	0	No
R19	Single-family Residence	B (Residence)	67 Exterior	53	53	0	No
R20	Single-family Residence	B (Residence)	67 Exterior	59	59	0	No
R21	Single-family Residence	B (Residence)	67 Exterior	59	59	0	No
R22	Single-family Residence	B (Residence)	67 Exterior	58	58	0	No
R23	Single-family Residence	B (Residence)	67 Exterior	53	54	+1	No
R24	Single-family Residence	B (Residence)	67 Exterior	50	50	0	No
R25	Single-family Residence	B (Residence)	67 Exterior	56	59	+3	No
R26	Single-family Residence	B (Residence)	67 Exterior	60	60	0	No
R27	Single-family Residence	B (Residence)	67 Exterior	51	53	+2	No
R28	Single-family Residence	B (Residence)	67 Exterior	62	63	+1	No
R29	Single-family Residence	B (Residence)	67 Exterior	56	59	+3	No

	Representative Receiver	NAC Category	FHWA NAC Level dB(A) Leq Interior/ Exterior	Existing dB(A) Leq (2012)	Predicted dB(A) Leq (2032)	Change (+/-)	Noise Impact
	R30	Single-family Residence	B (Residence) 67 Exterior	57	57	0	No
	R31	Single-family Residence	B (Residence) 67 Exterior	53	57	+4	No
	R32	Single-family Residence	B (Residence) 67 Exterior	58	59	+1	No
	R33	Single-family Residence	B (Residence) 67 Exterior	54	57	+3	No
	R34	Single-family Residence	B (Residence) 67 Exterior	60	61	+1	No
	R35	Single-family Residence	B (Residence) 67 Exterior	52	55	+3	No
	R36	Single-family Residence	B (Residence) 67 Exterior	52	53	+1	No
	R37	Single-family Residence	B (Residence) 67 Exterior	60	62	+2	No
	R38	Single-family Residence	B (Residence) 67 Exterior	59	60	+1	No
	R39	Single-family Residence	B (Residence) 67 Exterior	61	63	+2	No
	R40	Single-family Residence	B (Residence) 67 Exterior	59	62	+3	No
	R41	Single-family Residence	B (Residence) 67 Exterior	51	54	+3	No
	R42	Single-family Residence	B (Residence) 67 Exterior	57	59	+2	No
	R43	Single-family Residence	B (Residence) 67 Exterior	58	59	+1	No
	R44	Single-family Residence	B (Residence) 67 Exterior	60	60	0	No
	R45	Single-family Residence	B (Residence) 67 Exterior	55	59	+4	No
	R46	Single-family Residence	B (Residence) 67 Exterior	53	56	+3	No

770

771 As indicated in **Table 9**, the proposed project would not result in a traffic noise impact.

772

773 To avoid noise impacts that may result from future development of properties adjacent to
774 the project, local officials responsible for land use control programs must ensure, to the
775 maximum extent possible, no new activities are planned or constructed along or within the
776 following predicted (2032) noise impact contours (**Table 10**).

777 *Table 10: Impact Contour for Undeveloped Land*

Land Use NAC Category	Land Use Contour	Distance from Right-of-Way
NAC Category B & C	66 dB(A)	30 feet
NAC Category E	71 dB(A)	Within the Right-of-Way

778

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

787

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

791 5.2.8 Community Impact Assessment

792 The following assessment is an evaluation of the potential impacts of the proposed project
793 on the community and its quality of life in relation to such issues as regional and community
794 growth, land use, economic impacts, relocations and displacements, access and travel
795 patterns, and community cohesion. Limited English Proficiency (LEP) populations,
796 environmental justice, public facilities and services, and aesthetics, are also evaluated.

797 5.2.8.1 Community Profile

798 The existing FM 2206 roadway is functionally classified as a minor arterial by the Longview
799 MPO in the 2040 MTP. FM 2206 is also called Harrison Road. Approximately half of the
800 project area is within the Longview city limits. North of the western terminus is the White
801 Oak city limit (MTP 2014). For the purposes of this analysis, the community profile study
802 area is defined as parcels adjacent to the FM 2206 roadway within the project limits. The
803 adjacent parcels that surround the limits of the proposed project are considered the most
804 likely to experience the direct impacts (i.e. physical footprint and potential changes in
805 access) resulting from the proposed project. Along FM 2206, the land use is a mix of light

806 commercial, residential, and undeveloped parcels. The project area has historically been
807 rural with a dominant presence of oil and gas production.

808
809 Gregg County and this region experienced a large increase in population during the East
810 Texas oil boom. From 1930 to 1940, Gregg County's population increased by 268% (MTP
811 2014). The substantial influx of people was also accompanied by a proportional increase in
812 freight transported by train. Remnants of this industrialization are still evident to this day.
813 Trinity Rail and Eastman Chemical Company are the two largest employers in the city of
814 Longview, with a combined total of 3,300 employees. Gregg County has grown at a steady
815 rate since 1980. The city of Longview remains one of the most populous cities in the region
816 despite lower growth rates since 1990 (MTP 2014).

817
818 A field visit was conducted in August 2015, during which time land uses and businesses
819 were recorded and mapped (**Figure 9**). The western portion of the project area is largely
820 undeveloped land with some rural housing and oil production. Many commercial and
821 industrial businesses are concentrated toward the center of the project area near Fisher
822 Road and Prowler Street. The eastern portion of the project area has residential
823 neighborhoods. There are two places of worship within the project corridor: Iglesia de
824 Jesucristo Palabra Miel and Willow Springs Baptist Church. There is also a cemetery,
825 Lakeview Memorial Gardens, near Jordan Valley Road (County Road 2128). One place of
826 worship (Iglesia de Jesucristo Palabra Miel) appears to offer a unique service to the local
827 Hispanic/Spanish speaking community. No indications of vulnerable populations were
828 identified, such as daycares, nursing homes, or hospitals.

829
830 There are no sidewalks in the project area and no bicycle accommodations exist along FM
831 2206 within the project limits. Longview Transit provides bus service to the area; one route
832 serves a portion of the project area. Route 5 (SL 281/Silver Falls) extends along Marshall
833 Avenue, down Premier Road on to Harrison Road (FM 2206) and up Fisher Road (MTP 2014).

834 *Population Growth*

835 According to the decennial Census, the population of Longview in 2010 was 80,455, up
836 9.7% from 73,344 in 2000. The Longview MPO develops a Regional Growth Forecast,
837 including population, employment, and land use for all of Gregg County and small portions of
838 Harrison and Upshur Counties. According to the Longview MPO projections, the project area
839 within the planning area is anticipated to see growth between 2007 and 2040 (**Table 11**).

840 *Table 11: Population Projections*

Place	2007 Population	Projected 2040 Population	Numerical Change, 2007-2040	Percent Growth, 2007-2040	Average Annual Percent Growth, 2007-2040
Long View MPO*	127,535	164,728	37,193	29%	0.78%

Source: Longview Metropolitan Planning Organization Metropolitan Transportation Plan 2040.

*The Longview planning model area represents all of Gregg County and small portions of Harrison and Upshur Counties.

841 *Race and Ethnicity*

842 U.S. Census data and American Community Survey (ACS) data were used to identify areas
 843 with high concentrations of minority and low-income populations. For purposes of this
 844 demographic analysis, the census tracts, block groups, and blocks located adjacent to the
 845 proposed project were assessed. The study areas for the minority and low-income
 846 population analyses differ due to the availability of census data. The area traversed by the
 847 proposed project lies within four census block groups associated with the 2010-2014
 848 American Community Survey 5-Year Estimates and 19 populated census blocks associated
 849 with the 2010 Census (U.S. Census Bureau 2010 and 2014).

850
 851 For purposes of the analysis, an environmental justice population is present when the total
 852 minority population percentage within individual census blocks equals or exceeds 50%. Data
 853 from the 2010 Census for the 19 populated census blocks that are traversed or are
 854 immediately adjacent to the proposed project have been used in this analysis. **Table 12**
 855 contains the percent minority population for each populated census block in the minority
 856 population study area, and the geographies are depicted on **Figure 10**. Blocks with 50% or
 857 greater minority populations are bolded.

858
 859 Minority populations in project area blocks ranged from 0 to 100%. The parent census block
 860 groups reported minority populations ranging from 9.2 to 46.9%. Four of the 19 populated
 861 census blocks within the study area contain minority populations equal to or greater than
 862 50%. Based on these statistics, a minority environmental justice population exists within the
 863 study area.

864 *Income Characteristics*

865 Due to the lack of income data at the census block level available from the *2010-2014 ACS*
 866 *5-Year Estimates* (U.S. Census Bureau 2014), the census block groups intersected by the
 867 proposed project were used for this part of the analysis. **Table 13** shows the median
 868 household income characteristics of the census block groups in the study area. The median
 869 household income in the past 12 months within the block groups traversed by the proposed
 870 project ranges from \$29,792 to \$73,554. The 2016 U.S. Department of Health and Human
 871 Services (DHHS) poverty guideline of a family of four is \$24,300 per year. There are no block

872 groups reported to have a median household income below the poverty guideline set by the
873 DHHS.

874 Table 12: Project Area Racial and Ethnic Distribution (Census 2010)

Geography		Race and Ethnicity									
Census Tract/ Block Group	Block	Total Population	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic or Latino of Any Race	Total Minority
9		3,143	51.4% (1,616)	18.8% (592)	0.8% (25)	0.3% (8)	0% (0)	0% (0)	1.4% (45)	27.3% (857)	48.6% (1,527)
9/1		764	55.9% (427)	8.9% (68)	0.4% (3)	0.1% (1)	0	0	1.4% (11)	33.2% (254)	44.1% (337)
9/1	1008	161	66.5% (107)	6.8% (11)	0.6% (1)	0	0	0	5% (8)	21.1% (34)	33.5% (54)
	1011	34	35.3% (12)	64.7% (22)	0	0	0	0	0	0	64.7% (22)
	1014	17	52.9% (9)	17.6% (3)	0	0	0	0	0	29.4% (5)	47.1% (8)
	1015	110	68.2% (75)	4.5% (5)	0	0	0	0	0.9% (1)	26.4% (29)	31.8% (35)
9/2		1,159	56.9% (659)	10.9% (126)	1.5% (17)	0.4% (5)	0	0	0.9% (10)	29.5% (342)	43.1% (500)
9/2	2044	1	100% (1)	0	0	0	0	0	0	0	0
	2064	67	68.7% (46)	19.4% (13)	0	1.5% (1)	0	0	1.5% (1)	9% (6)	31.3% (21)
	2065	26	69.2% (18)	0	0	0	0	0	0	30.8% (8)	30.8% (8)
102*		7,841	78.1% (6123)	12.8% (1,002)	0.6% (48)	0.5% (40)	0% (1)	0.1% (9)	2% (153)	5.9% (465)	21.9% (1,718)
102/7*		1,731	90.8% (1,571)	3.8% (65)	0.8% (14)	0.8% (13)	0	0	1.4% (24)	2.5% (44)	9.2% (160)

Geography		Race and Ethnicity									
Census Tract/ Block Group	Block	Total Population	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic or Latino of Any Race	Total Minority
103.02		5,525	81.7% (4,512)	2.4% (130)	0.4% (24)	0.3% (18)	0.1% (6)	0% (2)	1.1% (62)	14% (771)	18.3% (1,013)
103.02/3		1442	53.1% (766)	3.7% (53)	0.3% (5)	0.1% (1)	0.3% (5)	0	1.1% (16)	41.3% (596)	46.9% (676)
103.02/3	3047	96	79.2% (76)	13.5% (13)	0	0	0	0	0	7.3% (7)	20.8% (20)
	3066	26	100% (26)	0	0	0	0	0	0	0	0
	3078	1	100% (1)	0	0	0	0	0	0	0	0
	3083	3	100% (3)	0	0	0	0	0	0	0	0
	3088	3	0	0	0	0	0	0	0	100% (3)	100% (3)
	3089	18	11.1% (2)	0	0	0	0	0	0	88.9% (16)	88.9% (16)
	3091	22	68.2% (15)	0	0	0	0	0	4.5% (1)	27.3% (6)	31.8% (7)
	3094	3	100% (3)	0	0	0	0	0	0	0	0
	3102	31	45.2% (14)	45.2% (14)	0	0	0	0	3.2% (1)	6.5% (2)	54.8% (17)
	3107	11	100% (11)	0	0	0	0	0	0	0	0

Geography		Race and Ethnicity									
Census Tract/ Block Group	Block	Total Population	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic or Latino of Any Race	Total Minority
	3126	43	76.7% (33)	0	0	0	0	0	0	23.3% (10)	23.3% (10)
	3138	16	68.8% (11)	0	0	0	0	0	0	31.2% (5)	31.3% (5)
Places											
City of Longview		80,455	56.2% (45,230)	22.6% (18,190)	0.4% (292)	1.3% (1,063)	0% (21)	0.1% (87)	1.4% (1,112)	18% (14,460)	43.8% (35,225)
Counties											
Gregg County		12,1730	60.8% (74,005)	19.8% (24,068)	0.4% (497)	1.1% (1,316)	0% (35)	0.1% (119)	1.4% (1,672)	16.4% (20,018)	39.2% (47,725)

Source: 2010 Census Summary File 1—Texas [machine-readable data files] prepared by the U.S. Census Bureau, 2011. Table P9.

Note: The complete Census race descriptions are as follows: White alone; Black or African American alone; American Indian and Alaska Native alone; Asian alone; Native Hawaiian and Other Pacific Islander alone; Some Other Race alone; and Two or More Races. See the 2010 Census Summary File 1 Technical Documentation for additional information about race and origin here: <http://www.census.gov/prod/cen2010/doc/sf1.pdf>.

Note: Census blocks that contain minority populations equal to or higher than 50 percent are bolded.

*The census blocks adjacent to the project area from this block group are not populated.

876 **Table 13: Median Household Income (ACS 2010-2014)**

Geography	Total Households ¹	Median Household Income in the Past 12 Months ²
Census Tracts		
9	1,070	\$34,130
102	2,762	\$43,278
103.02	1,834	\$54,235
Block Groups		
9/1	315	\$53,051
9/2	294	\$29,792
102/7	571	\$73,554
103.02/3	368	\$40,395
Places		
Longview City	30,535	\$43,767
Counties		
Gregg County	45,511	\$46,391

¹Source: U.S. Census Bureau, 2010-2014 American Community Survey, Table B11001.

²Source: U.S. Census Bureau, 2010-2014 American Community Survey, Table B19013.

Note: ACS data are estimates; they are not counts. Income data is provided in 2014 inflation adjusted dollars.

877 **5.2.8.2 Land Use**

878 Land uses were described in **Section 5.2.8.1** and are illustrated in **Figure 9**.

879 **No-Build Alternative**

880 Under the No-Build Alternative, land use would not be directly affected by the acquisition of land for
881 transportation use.

882 **Build Alternative**

883 **Table 14** presents the land use by acres to be acquired for the proposed project, based on the
884 zoning categories for each parcel according to the Gregg County Appraisal District (GCAD), as well
885 as field verification. Property to be acquired for the proposed project is primarily categorized as
886 agricultural, residential, and undeveloped.

887
888 Based on projections prepared by Longview MPO, land use in the project area along FM 2206 is
889 predicted to be increasingly industrial and commercial in nature by 2040 (MTP 2014). This
890 additional growth is anticipated to be concentrated primarily in the western half of the project area.
891 The additional capacity provided by the proposed project would support this growth and provide
892 improved safety to serve additional commerce.

893

894 **Table 14: Proposed Land Use Conversions by the Build Alternative**

Land Use	Acres to be Acquired
Agricultural	15.69
Commercial	4.60
Government	0.99
Industrial	2.52
Mobile Homes	0.06
Oil/Gas	1.72
Residential	4.74
Residential and Commercial	0.17
Residential/Agricultural	5.64
Undeveloped	5.20
Total Proposed ROW	41.34

Source: Design schematic 2016, GCAD 2015, and CMEC 2016

895

896 **5.2.8.3 Economic Impacts**

897 *No-Build Alternative*

898 Implementation of the No-Build Alternative would not improve safety, operability, or mobility to
 899 support traffic associated with the projected population and employment growth in the project area
 900 including Gregg County and the surrounding area.

901 *Build Alternative*

902 This section presents information regarding employment trends in the Longview MPO planning
 903 area. Employment forecasts reported in this section were prepared by the Longview MPO. As
 904 summarized in **Table 15**, the Longview MPO employment forecast data indicate that employment in
 905 the region is anticipated to grow through 2040.

906 **Table 15: Employment Trends for Longview MPO Area**

Place	2007 Employment	Projected 2040 Employment	Numerical Change, 2007-2040	Percent Growth, 2007-2040	Average Annual Percent Growth, 2007-2040
Long View MPO*	85,015	97,674	12,659	15.00%	0.42%

Source: Longview Metropolitan Planning Organization Metropolitan Transportation Plan 2040

*The Longview planning model area represents all of Gregg County and small portions of Harrison and Upshur Counties.

907

908 Employment growth within the vicinity of the project is expected to be low to moderate. The Build
909 Alternative would provide increased mobility to support the increasing traffic associated with the
910 projected employment growth in the region.

911 *5.2.8.4 Relocations and Displacements*

912 *No-Build Alternative*

913 Implementation of the No-Build Alternative would not require ROW acquisition, relocations, or
914 displacements.

915 *Build Alternative*

916 The Build Alternative would require the acquisition of approximately 41.34 acres of ROW. The
917 proposed project is anticipated to require eight residential relocations, four commercial relocations,
918 and one shed relocation. **Table 16** summarizes the types of potential displacements.

919 *Table 16: Summary of Potential Displacements*

Type of Displacement	Number of Displacements
Single-Family Residential	8
Commercial	4
Shed/Out-Building	1
Total	13

Source: Design schematic (January 2016) and field observations (August 2015)

920

921 For the purpose of this assessment, a structure that was anticipated to be intersected or clipped by
922 the proposed ROW was determined to be displaced. The displacement information presented is
923 based on the proposed ROW line as depicted in **Figure 9** in **Appendix A**.

924

925 Detailed information about the residential properties proposed to be relocated are presented below
926 in **Table 17**, based on data obtained from the GCAD.

927

928 The current market value of the homes was used to identify the number of similar available homes
929 within the same ZIP code (75604), which covers the whole project area. The results of the search
930 conducted on Realtor.com in April 2016 are presented in **Table 18**.

931

932 Based on this current available market data, comparable housing appears to be available for the
933 potential residential displacements. Further coordination between TxDOT ROW agents and
934 displaced residents would be required to identify suitable housing.

935

936

937
938

Table 17: Potential Residential Displacements

Fig. 9 Map ID No.	Address	GCAD Property ID #	Type	Approximate value*	Size (SF)
1	3529 State Highway 42	17953	Single-Family Residence	\$168,820	1,008
			Commercial Addition		1,024
3	6038 Farm-to-Market 2206	26343	Single-Family Residence	\$125,790	1,200
4	605 W Harrison Rd.	60895	Single-Family Residence	\$51,780	788
5	707 W Harrison Rd.	60897	Single-Family Residence	\$138,610	2,115
6	701 W Harrison Rd.	60896	Single-Family Residence	\$119,470	1,927
7	917 Lawrence Dr.	1026162	Single-Family Residence	\$142,700	1,299
8	914 Lawrence Dr.	51972	Single-Family Residence	\$209,140	2,051
10	309 W Harrison Rd.	17107	Single-Family Residence	\$75,010	1,242
11	W Harrison Rd	17109	Shed/Out-Building	\$13,250	no data available

Source: GCAD 2016 (accessed April 26, 2016) and field observations (August 2015)

*Value includes land and all buildings on parcel, not just displaced structure.

939 **Table 18: Summary of Available Residential Properties**

Price Range	Number of Homes in Zip Code 75604
Less than \$50,000	2
\$50,000 - \$99,999	13
\$100,000 - \$199,999	85
\$200,000 - \$299,999	33

Source: Realtor.com, accessed April 26, 2016

940
941
942
943
944

A total of four commercial properties are anticipated to be displaced by the proposed project (Figure 9). Table 19 lists the potential commercial displacements and provides information related to business type, occupancy status, estimated number of employees, approximate value of the property, and existing zoning and land use descriptions.

945 **Table 19: Potential Commercial Displacements**

Fig. 9 Map ID No.	Business Name and Address	Business Type	Occupancy Status	Estimated Number of Employees	Approx. Value of Property*	Existing Zoning/ Land Use
1	Yummy Donuts Shop 3529 SH 42 Longview, TX 75604	Restaurant	Occupied	1-4	\$168,820	Commercial
2	Riverside RV Park and Recreation Hall 3711 SH 42 Longview, TX 75604-7813	Event Center	Occupied	1-4	\$1,648,330	Commercial
9	Self Storage 319 W Harrison Rd. Longview, TX 75604-5314	Storage Facility	Occupied	1-4	\$418,400	Commercial
12	Thriftree Food Store and Laundromat 100-104 W Harrison Rd. Longview, TX, 75604-5309	Convenience Store and Laundromat	Occupied	1-4	\$107,180	Commercial

Sources: Field observations (August 2015), www.manta.com (accessed April 2016 for estimated number of employees), GCAD (accessed April 2016 for address confirmation and approximate 2016 property values).

*Value includes land and all buildings on parcel, not just displaced structure.

946

947 Based on an April 2016 Loopnet.com search, there appear to be a sufficient number of commercial
 948 properties available for sale or lease—approximately 59—to accommodate businesses displaced by
 949 the proposed project within the project area zip code (75604). Several businesses may be able to
 950 relocate on the same parcel of land. There are also many tracts of vacant land along the FM 2206
 951 roadway that may be available as sites for business relocations.

952

953 As shown in **Table 19**, up to 16 employees could be impacted by business (commercial)
 954 displacements. If the businesses are able to relocate within the immediate vicinity or community
 955 and remain viable, any potential employment effects would be temporary. A higher degree of
 956 impact could occur if the businesses cannot relocate or must do so outside of the general vicinity of
 957 their current location. It is possible that some commercial entities may not be able to relocate
 958 within the immediate vicinity of their present location or current service areas due to the availability
 959 of suitable real estate. However, the available commercial real estate in the area indicates
 960 relocation of the commercial displacements should be achievable. Additionally, 16 employees
 961 make up only a small portion of local area employment. If local employment area is defined as the
 962 Planning Area for the Longview MPO, 16 jobs represent less than 1% of the employees within this
 963 area.

964

965 TxDOT would be responsible for the ROW acquisitions. Acquisition and relocation assistance would
 966 be in accordance with the TxDOT Right-of-Way Acquisition and Relocation Assistance Program.
 967 Consistent with the USDOT policy, as mandated by the URARPAA, as amended in 1987, TxDOT
 968 would provide relocation resources (including any applicable special provisions or programs) to all
 969 displaced persons without discrimination. The available structures must also be open to persons

970 regardless of race, color, religion, or nationality and be within the financial means of those
971 individuals affected. All property owners from whom property is needed are entitled to receive just
972 compensation for their land and property. Just compensation is based upon the fair market value of
973 the property. Through its Relocation Assistance Program, TxDOT also provides payment and
974 services to aid in movement to a new location.

975
976 Relocation assistance is available to all individuals, families, businesses, farmers, and non-profit
977 organizations displaced as a result of the state highway project or other transportation project.
978 Thus, assistance applies to tenants as well as owners occupying the real property needed for the
979 project. As stated previously, assistance would be provided should the local existing housing market
980 be insufficient for relocation. TxDOT would complete a survey of the housing market and provide
981 housing supplements to displaced residents, if necessary. The TxDOT Relocation Office would also
982 provide assistance to displaced businesses to aid in their satisfactory relocation with a minimum
983 delay and loss in earnings. The proposed project would proceed to construction only when all
984 displaced residents have been provided the opportunity to be relocated to adequate replacement
985 sites. No special relocation considerations or measures to resolve relocation concerns have been
986 identified to date.

987 5.2.8.5 *Access and Travel Patterns*

988 *No-Build Alternative*

989 Under the No-Build Alternative, no impacts to access or travel patterns would be anticipated.

990 *Build Alternative*

991 Under the Build Alternative, access to adjacent industrial, commercial, and residential areas would
992 be preserved. The additional lanes and flush median would enhance the safety of those entering
993 and exiting the roadway. The proposed additional lanes would also provide congestion relief. The
994 proposed project would not create a new bypass/reliever route.

995
996 Some changes are expected for the travel patterns of drivers accessing FM 2206 via Jordan Valley
997 Drive. The FM 2206 alignment would be shifted south in this location, removing direct access to FM
998 2206 from Jordan Valley Drive. Under the Build Alternative, in order to access FM 2206 from
999 Jordan Valley Drive, travelers would turn left and travel a short distance (about 400 feet) to access
1000 the realigned FM 2206. The proposed project is not anticipated to affect the Longview Transit stops
1001 between Premier and Fisher Road or affect the route 5 (SL 281/Silver Falls) bus route. The
1002 proposed project would not permanently increase response time to emergencies by first
1003 responders, and would be expected to reduce travel times on FM 2206.

1004 5.2.8.6 *Public Facilities and Services*

1005 *No-Build Alternative*

1006 Under the No-Build Alternative, no impacts to public facilities or services would be anticipated.

1007 *Build Alternative*
1008 As shown in **Figure 9**, public facilities within the project limits include Gregg County – Precinct 3 and
1009 a municipal utility facility (**Photos 12 and 18** in **Appendix B**). The Gregg County – Precinct 3 property
1010 is anticipated to be impacted by proposed ROW; however, coordination between the County and
1011 TxDOT has occurred to minimize impacts to the property. Refer to **Section 5.2.10.2** for additional
1012 details.

1013 *5.2.8.7 Visual/Aesthetic Considerations*

1014 The visual quality assessment is used to determine whether the proposed project would be
1015 compatible with the visual character of the setting into which it would be introduced. The impact
1016 assessment also takes into consideration the fact that FM 2206 is an existing transportation
1017 corridor. Visual impacts are discussed in terms of the effect that the new physical elements
1018 associated with the proposed project would have on landform quality (i.e., the existing natural or
1019 man-made landform) and visual resources (i.e., the physical resources, including native vegetation,
1020 introduced landscaping, and the built environment that make up the character of the area).

1021
1022 Federal and state regulations require that visual impacts be addressed for Section 106 and Section
1023 4(f) properties. There are no specific Federal or state visual regulatory requirements that apply to
1024 properties that are not designated historic, and/or eligible for listing in the NRHP (National Register
1025 of Historic Places), or parkland. Generally, the existing visual and aesthetic qualities of the study
1026 area include undeveloped land and residential housing and no substantial adverse impacts are
1027 expected to occur for local occupants or motorists; no elevated overpasses are proposed.

1028 *No-Build Alternative*

1029 Aesthetic impacts are not anticipated under the No-Build Alternative.

1030 *Build Alternative*

1031 The visual landscape near the project area is characterized by a combination of land uses,
1032 including existing roadways, dispersed residential parcels, commercial uses, and some vacant land.
1033 The proposed project consists of improvements to an existing facility; for this reason, the aesthetic
1034 character of the project area is not anticipated to noticeably change. Stakeholder input would be
1035 considered during the public involvement process so as to minimize the potential for aesthetic
1036 impacts.

1037 *5.2.8.8 Community Cohesion*

1038 Community cohesion is a term that refers to an aggregate quality of a residential area. Cohesion is
1039 a social attribute that indicates a sense of community, common responsibility, and social
1040 interaction within a limited geographic area. It is the degree to which residents have a sense of
1041 belonging to their neighborhood or community or a strong attachment to neighbors, groups, and
1042 institutions as a continual association over time.

1043 *No-Build Alternative*

1044 Under the No-Build Alternative, a decline in community cohesion is not anticipated.

1045 *Build Alternative*

1046 The existing community in the area traversed by the Build Alternative is characterized by a mix of
1047 commercial, residential and industrial land uses, as well as vacant land. Most of the residences are
1048 located in the eastern portion of the project area with rural single-family residences sparsely
1049 located in the western half of the project area. Minor changes in travel patterns and access are
1050 anticipated as a result of the addition of two main lanes and a flush median, but the proposed
1051 project would not substantially change the way local area residents access other parts of the
1052 community and participate in local activities. The proposed improvements would not affect,
1053 separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups as FM 2206
1054 is an existing major thoroughfare. The displacements do not represent a substantial percentage of
1055 the community, and other businesses exist nearby that would be able to provide similar services to
1056 the community, should some of the displaced businesses choose to relocate outside of the area.
1057 The nearest laundromat, South Green Laundromat, is approximately five miles away from the
1058 Thriftee Laundromat. The Maude Cobb Convention and Activity Complex, an event center, is a little
1059 over two miles away. There is a donut shop on W. Marshall Avenue called Donut Box less than one
1060 mile from the project area. JMB Industrial Warehouse is about the same distance. No adverse
1061 impacts to community cohesion are anticipated. TxDOT has and would continue to facilitate
1062 communication with the general public, adjacent property owners, business owners, residents,
1063 neighborhood groups, and public officials with interests along FM 2206.

1064 *5.2.8.9 Environmental Justice*

1065 EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-*
1066 *Income Populations* requires each Federal agency to “make achieving environmental justice part of
1067 its mission by identifying and addressing, as appropriate, disproportionately high and adverse
1068 human health or environmental effects of its programs, policies and activities on minority
1069 populations and low-income populations.” FHWA has identified three fundamental principles of
1070 environmental justice:

- 1071 ▪ To avoid, minimize, or mitigate disproportionately high and adverse human health or
1072 environmental effects, including social and economic effects, on minority populations and
1073 low-income populations;
- 1074 ▪ To ensure full and fair participation by all potentially affected communities in the
1075 transportation decision-making process; and
- 1076 ▪ To prevent the denial of, reduction in, or significant delay in the receipt of benefits by
1077 minority populations and low-income populations.

1078
1079 FHWA Order 6640.23A defines a minority as a person who is:

- 1080 ▪ Black: a person having origins in any of the black racial groups of Africa;
- 1081 ▪ Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or
1082 other Spanish culture or origin, regardless of race;

- 1083 ▪ Asian American: a person having origins in any of the original peoples of the Far East,
1084 Southeast Asia, or the Indian subcontinent;
- 1085 ▪ American Indian and Alaska Native: a person having origins in any of the original people of
1086 North America, South America (including Central America), and who maintains cultural
1087 identification through tribal affiliation or community recognition; or
- 1088 ▪ Native Hawaiian and Other Pacific Islander: people having origins in any of the original
1089 peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

1090
1091 EO 12898 further defines a minority population as any readily identifiable groups of minority
1092 persons who live in geographic proximity, and if circumstances warrant, geographically
1093 dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly
1094 affected by a proposed FHWA program, policy, or activity.

1095
1096 Low-income is defined as a household income at or below the Department of Health and Human
1097 Services (DHHS) poverty guidelines. In 2016, the DHHS poverty guideline for a four-person family
1098 was \$24,300.

1099
1100 Adverse effects are defined in the FHWA Order 6640.23A as the totality of significant individual or
1101 cumulative human health or environmental effects. This includes interrelated social and economic
1102 effects, which may include, but are not limited to: bodily impairment, infirmity, illness, or death; air,
1103 noise, and water pollution and soil contamination; destruction or disruption of man-made or natural
1104 resources; destruction or diminution of aesthetic values; destruction or disruption of community
1105 cohesion or a community's economic vitality; destruction or disruption of the availability of public
1106 and private facilities and services; vibration; adverse employment effects; displacement of persons,
1107 businesses, farms, or nonprofit organizations; increased traffic congestion; isolation, exclusion, or
1108 separation of minority or low-income individuals within a given community from the broader
1109 community; and the denial of, reduction in, or significant delay in the receipt of benefits of FHWA
1110 programs, policies, or activities.

1111
1112 Disproportionately high and adverse human health or environmental effects are defined by FHWA
1113 as adverse effects that: (1) are predominately borne by a minority population and/or a low-income
1114 population, or (2) would be suffered by the minority population and/or low-income population and
1115 are appreciably more severe or greater in magnitude than the adverse effects that would be
1116 suffered by the non-minority population and/or non-low-income population.

1117 *No-Build Alternative*

1118 Implementation of the No-Build Alternative would not have disproportionately high or adverse
1119 human health or environmental effects on minority and/or low-income populations.

1120 *Build Alternative*
1121 Environmental justice populations (greater than 50% minority blocks) identified in **Table 12** and all
1122 of the users of the FM 2206 facility would benefit from the proposed improvements. The benefits
1123 associated with the proposed project would include increased capacity, improved traffic operations,
1124 and enhanced safety. Access to adjacent properties would be maintained at all times, and no
1125 detours are anticipated. The proposed project would not isolate any persons, groups or
1126 neighborhoods and would not cause any change in community cohesion. The proposed project
1127 would not directly affect major employers, and the regional economic effects associated with the
1128 proposed Build Alternative would be beneficial for the overall community. The proposed project
1129 would require the displacement of eight residences, four businesses, and one shed. None of the
1130 anticipated displaced businesses specifically serve minority populations. Although four minority
1131 blocks exist along the project limits, none of the displacements would occur within minority blocks.
1132 The Build Alternative would not cause disproportionately high or adverse effects on any minority
1133 populations or low-income populations consistent with EO 12898 regarding environmental justice.

1134 *5.2.8.10 Limited English Proficiency*

1135 *No-Build Alternative*
1136 Under both the No-Build and Build Alternatives, LEP individuals would be afforded the opportunity
1137 to participate in the decision-making process as discussed below.

1138 *Build Alternative*
1139 EO 13166, *Improving Access to Services for Persons with LEP*, requires agencies to examine the
1140 services they provide, identify any need for services to those with LEP, and develop and implement
1141 a system to provide those services so that LEP persons can have meaningful access to them. This
1142 EO requires Federal agencies to work to ensure that recipients of Federal financial assistance
1143 provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP
1144 persons can effectively participate in or benefit from Federally assisted programs and activities may
1145 violate the prohibition under Title VI of the Civil Rights Restoration Act of 1987 and Title VI
1146 regulations.

1147
1148 An analysis was conducted to identify LEP populations in the project area in order to appropriately
1149 plan for public involvement. LEP populations were identified using block group level data (2010-
1150 2014 ACS) gathered by the U.S. Census Bureau. Census block groups adjacent to the proposed
1151 project limits were assessed. Within the population that is five years of age and older, persons who
1152 speak English less than “very well” are considered to have LEP. The populations that speak English
1153 less than “very well,” according to the U.S. Census Bureau’s 2010-2014 ACS, are presented in
1154 **Table 20**.

1155

1156
1157

**Table 20: Percent of the Population that Speaks English Less than “Very Well”
(ACS 2010-2014)**

Census Tract / Block Group	Total Population 5 Years of Age and Over	Percent LEP (No. of persons)	Languages Spoken by LEP Population			
			Spanish % (No. of persons)	Indo-European % (No. of persons)	Asian/ Pacific Island % (No. of persons)	Other % (No. of persons)
Census Tracts						
9	2,668	7.8% (209)	7.8% (209)	0% (0)	0% (0)	0% (0)
102	6,457	1.9% (122)	1.9% (122)	0% (0)	0% (0)	0% (0)
103.2	5,091	7.2% (365)	7.2% (365)	0% (0)	0% (0)	0% (0)
Block Groups						
9/1	937	10.7% (100)	10.7% (100)	0% (0)	0% (0)	0% (0)
9/2	874	5.3% (46)	5.3% (46)	0% (0)	0% (0)	0% (0)
102/7	1,478	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
103.02/3	1,071	19.3% (207)	19.3% (207)	0% (0)	0% (0)	0% (0)
Total	4,360	8.1% (353)	8.1% (353)	0% (0)	0% (0)	0% (0)
Places						
City of Longview	75,621	7.6% (5,738)	6.9% (5,184)	0.3% (239)	0.3% (200)	0.2% (115)
Counties						
Gregg County	113,444	7% (7,963)	6.4% (7,254)	0.2% (257)	0.3% (332)	0.1% (120)

Source: U.S. Census Bureau, 2010-2014 American Community Survey Table B16004

Note: ACS data are estimates; they are not counts.

1158
1159
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1165

As shown in **Table 20**, the LEP populations in the individual census block groups within the project area range from approximately zero to 19.3 percent of the total population. Of the 4,360 people within the four census block groups, approximately eight percent speak English less than “very well,” all of whom speak Spanish. One block group (CT 103.02/BG 3) is comprised of an above average percentage of LEP population (approximately 19.3%). This block groups represents the westernmost portion of the project limits and contains four of the anticipated 13 displacements.

1166 Windshield surveys during field visits indicated signage adjacent FM 2206 is presented
1167 predominantly in English, with the exception of one place of worship (Iglesia de Jesucristo Palabra
1168 Miel). Reasonable steps would be taken to ensure that all persons have meaningful access to the
1169 programs, services, and information TxDOT provides. Public involvement activities completed for
1170 the project are discussed in **Section 9.0**. Future public involvement information and/or materials
1171 would be made available in English (and Spanish as necessary), and a translator (for language or
1172 other special communication needs) would be provided upon request. Therefore, the requirements
1173 of EO 13166 appear to be satisfied.

1174 **5.2.9 Cultural Resources**

1175 Cultural resources are structures, buildings, sites, districts (a collection of related structures,
1176 buildings, and/or archeological sites), cemeteries, and objects. Both Federal and state laws require
1177 consideration of cultural resources during project planning. At the Federal level, regulations such as
1178 NEPA and the National Historic Preservation Act of 1966, among others, apply to transportation
1179 projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to this
1180 project. Compliance with these laws often requires consultation with the Texas Historical
1181 Commission/State Historic Preservation Officer (SHPO) and/or Federally recognized tribes to
1182 determine the project's effects on cultural resources. Review and coordination of this project
1183 followed approved procedures for compliance with Federal and state laws.

1184 **5.2.9.1 Non-Archeological Historic Resources**

1185 *No-Build Alternative*

1186 Under the No-Build Alternative, additional ROW would not be acquired; therefore, no impacts to
1187 historic resources are anticipated.

1188 *Build Alternative*

1189 It has been determined through consultation with the SHPO that the APE for the proposed project
1190 includes the existing and proposed ROW plus a 150-foot-wide area extending out from the
1191 outermost edge of the existing and proposed ROW. A review of the NRHP, the list of State
1192 Antiquities Landmarks, and the list of Recorded Texas Historic Landmarks indicated that no
1193 historically significant resources were previously documented within the area of potential effects
1194 (APE).

1195
1196 TxDOT performed a non-archeological historic resources reconnaissance survey of the project's APE
1197 to identify any resources that may be eligible for listing in the NRHP. The survey documented 80
1198 historic-age (built prior to 1975) resources on 66 parcels. TxDOT historians determined that none of
1199 the 80 resources are eligible for listing in the NRHP due to lack of significance and/or integrity, as
1200 detailed in the *Report for Historical Studies Survey, Farm to Market Road 2206: From State*
1201 *Highway 42 to State Loop 281, Gregg County, Tyler District, CSJ 2073-01-009 and 2073-01-010*
1202 *(Cox|McLain Environmental Consulting, Inc. 2016a).*
1203

1204
1205 The proposed project was cleared for non-archeological historic properties on May 17, 2016. TxDOT
1206 historians determined that there are no NRHP eligible non-archeological historic properties in the
1207 APE and that therefore the project would cause no effects thereto. The APE for the project is 150
1208 feet from the proposed project ROW. In compliance with the Section 106 PA, a TxDOT historian
1209 determined project activities will have no effects to non-archeological historic properties. Individual
1210 project coordination with SHPO is not required.

1211 *5.2.9.2 Archeological Resources*

1212 *No-Build Alternative*

1213 Under the No-Build Alternative, no impacts to archeological sites are anticipated.

1214 *Build Alternative*

1215 A combined reconnaissance and intensive archeological survey was completed to inventory and
1216 evaluate archeological resources within the APE. Visual examination and shovel testing indicate
1217 that the majority of the APE has been extensively disturbed by previous activities (e.g., oil and gas
1218 pipelines and other activities, utility installations, natural erosion) in the distant and recent past.
1219 Backhoe trenches indicated that the Holocene-age soils adjacent to Hawkins Creek yielded a fairly
1220 uniform profile that showed no evidence of buried soil horizons or archeological deposits or
1221 materials. All shovel tests and surface exposures were sterile of archeological materials and no
1222 evidence of preserved deposits were encountered. No new archeological sites or archeological
1223 materials were identified.

1224
1225 After the survey was completed, TxDOT sent the survey report to the Texas SHPO on March 24,
1226 2016. Texas SHPO concurred with TxDOT on March 24, 2016 that the archeological inventory of
1227 the undertaking was complete, for a finding of “no historic properties affected”, no State Antiquities
1228 Landmarks affected, and no further work or Texas SHPO consultation required. In addition, Texas
1229 SHPO concurred that the report was adequate and that the stipulations set forth in the Antiquities
1230 Code of Texas were fulfilled.

1231
1232 No public controversy exists regarding the project’s potential impacts on archeological sites or
1233 cemeteries. If any unanticipated cultural materials or deposits are found at any stage of clearing,
1234 preparation, or construction, the work should cease in that area and TxDOT personnel would be
1235 notified immediately to initiate post-review discovery procedures.

1236
1237 Tribal Coordination for the project began on May 1, 2014 and ended on September 8, 2014.

1238 *5.2.10 Section 4(f) and Section 6(f)*

1239 *5.2.10.1 No-Build Alternative*

1240 Under the No-Build Alternative, there would be no impacts to properties protected by Section 4(f) or
1241 Section 6(f).

1242 **5.2.10.2 Build Alternative**
 1243 The proposed project would not require the use of nor substantially impair the purposes of any
 1244 publicly owned land from an official public park or recreational area. Approximately 0.9 acre of
 1245 proposed ROW would be required from the Gregg County – Pct. 3 property; however, the county
 1246 does not recognize the playground equipment that is present on the property as an official park.
 1247 Coordination between Gregg County and TxDOT has determined that Section 4(f) is not applicable
 1248 to this county property. **Figure 9a** illustrates the location of the county property and a photograph is
 1249 provided in **Appendix B (Photo 18)**. No impacts to wildlife or waterfowl refuge, or historic site of
 1250 national, state, or local significance protected by Section 4(f) of the U.S. Department of
 1251 Transportation Act of 1966 are anticipated. The proposed project would not require the acquisition
 1252 of any land within park areas subject to Section 6(f).

1253 **5.2.11 Hazardous Materials**

1254 **5.2.11.1 No-Build Alternative**

1255 Under the No-Build Alternative, no impacts from hazardous materials are anticipated.

1256 **5.2.11.2 Build Alternative**

1257 Construction of the proposed project would include drilling of bridge piers, excavation, and other
 1258 earth moving activities. Project planning includes the risk that such activities pose in terms of
 1259 encountering hazardous materials and substances within the project area from past human
 1260 activities. Therefore, a hazardous materials site visit was conducted on May 7, 2014, and a
 1261 hazardous materials Initial Site Assessment (ISA) was completed on March 16, 2016, to identify
 1262 possible hazardous materials within the proposed project limits. A review of a regulatory database
 1263 list was conducted as part of the ISA technical report in accordance with TxDOT guidelines. A brief
 1264 summary of regulated sites of concern within the proposed project limits is provided in **Table 21**.
 1265 These sites are shown on **Figure 11**.

1266 **Table 21: Hazardous Materials Database Search Results**

Database Abbreviation	Database	Recommended Distance Searched	# of Sites Found	Environmental Concerns (Yes/No)
NPL ¹	National Priorities List	One mile	0	NA ²
DNPL ¹	Delisted National Priorities List	One-half mile	0	NA
CERCLIS ¹	Comprehensive Environmental Response, Compensation, and Liability Information System	One-half mile	4	No
NFRAP ¹	CERCLIS No Further Remedial Action Planned	One-half mile	3	No
RCRAC ¹	Resource Conservation and Recovery Information System – Corrective Action	One mile	0	NA
RCRAT ¹	RCRA – Treatment Storage or Disposal	One-half mile	0	NA

Database Abbreviation	Database	Recommended Distance Searched	# of Sites Found	Environmental Concerns (Yes/No)
EC ¹	Federal Engineering Institutional Control Sites	One-half mile	0	NA
RCRAGr06 ¹	RCRA – Generators	Property and adjoining properties	1	No
ERNSTX ¹	Emergency Response Notification System	Property only	2	No
IHWCA ¹	Industrial and Hazardous Waste Corrective Action Sites	One mile	9	No
SF ¹	State Superfund Sites	One mile	0	NA
CALF ¹	Closed and Abandoned Landfill Inventory	One-half mile	0	NA
LPST ¹	Leaking Petroleum Storage Tanks	One-half mile	9	No
PST ¹	Petroleum Storage Tanks	Property and adjoining properties	15	Yes
VCP ¹	Voluntary Cleanup Program Sites	One-half mile	1	No
IOP ¹	Innocent Owner/Operator Database	One-half mile	0	NA
DCRPS ¹	Dry Cleaner Remediation Program Sites	One-half mile	0	NA
BSA ¹	Brownfields Site Assessments	One-half mile	0	NA
RRCVCP ¹	Railroad Commission VCP and Brownfields Sites	One-half mile	0	NA
Public GIS Map Viewer for Wells / Pipelines ³	TCEQ On-line Viewer	One-half mile	See well and pipeline section	Yes
FRSTX ³	Facility Registration System	Property and adjoining properties	3	No
TRI ³	Toxics Release Inventory	Property and adjoining properties	1	No
TIERII ³	Tier II Chemical Reporting Program Facilities	Property and adjoining properties	1	No
WMRF ³	Recycling Facilities	One-half mile	1	No

Source: GeoSearch Radius Report, May 27, 2014

¹Standard database reviewed

²NA—Not Applicable

³Supplemental record reviewed

1267

1268

The sites of environmental concern, by database type, are discussed as follows.

1269 *Petroleum Storage Tanks (PST)*

1270 Fifteen PST sites were identified within the search radius. One adjacent site (Map ID#6) is
1271 considered an environmental concern and is discussed below. The remaining 14 sites have been
1272 determined to present no environmental concern for the proposed project.

1273 ▪ Thriftee Food Store (Map ID#6), 100 W. Harrison Road (FM 2206). This site has three single-
1274 wall, composite, underground storage tanks (USTs) consisting of one 8,000-gallon diesel
1275 tank, one 8,000-gallon gasoline tank, and one 7,829-gallon gasoline tank. The USTs were
1276 installed on February 1, 1986. The piping systems consist of fiberglass-reinforced plastic
1277 with cathodic protection. Compartment release detection consists of vapor monitoring. Spill
1278 containment and overfill prevention are unreported. The proposed project would require
1279 ROW from this site. The facility and tank hold are located within the proposed ROW. Based
1280 on the age of the tanks (30 years) and the tank design (single wall), this site is considered a
1281 high risk to ROW acquisition and construction of the proposed project. There is the potential
1282 that undiscovered contamination from this site has/could adversely affect the subsurface
1283 conditions of the proposed project and ROW.

1284 Tank removal and disposition of any associated contaminated soil or liquids would be
1285 addressed during the ROW acquisition/negotiation phase of the project.

1286 *Wells and Pipelines*

1287 The proposed project crosses a portion of the East Texas Oil Field. The TCEQ Public Geographical
1288 Information System (GIS) Map Viewer for Wells/Pipelines shows a number of wells and pipelines
1289 within the vicinity of the proposed project. They are considered environmental concerns and are
1290 discussed as follows:

1291 ▪ There are four active oil wells within the existing and proposed project ROW and two
1292 adjacent active oil wells. These wells pose a high risk to ROW acquisition and construction of
1293 the proposed project. There is the potential that contamination from these wells has
1294 adversely affected the subsurface conditions of the proposed project.

1295 ▪ There are four plugged oil wells within the existing and proposed project ROW and one
1296 adjacent plugged oil well. These wells pose a high risk to ROW acquisition and construction
1297 of the proposed project. There is the potential that contamination from these wells has
1298 adversely affected the subsurface conditions of the proposed project.

1299 ▪ The proposed project crosses 37 crude oil pipelines, 12 natural gas pipelines, one
1300 ethane/propane mix pipeline, and one natural gas full well steam pipeline. These pipelines
1301 pose a high risk to ROW acquisition and construction of the proposed project. There is the
1302 potential that contamination from these pipelines has adversely affected the subsurface
1303 conditions of the proposed project. There is also the potential that contamination could
1304 occur during the adjustment or relocation of these pipelines.

1305 The oil field discussed above has been in production since the 1930s. In addition to the previously
1306 discussed wells and pipelines, it is likely that unmapped wells and pipelines exist in the area along

1307 with subsurface contamination from associated drilling such as crude oil, drilling fluids, hydraulic
1308 fluids and lubricants, tar pits, and slush pits.

1309 No visual evidence of surficial oilfield contamination was noted within the project limits during the
1310 site reconnaissance. Identification and removal of oil wells or pipelines, and the need for any
1311 additional assessment would be addressed during the ROW acquisition and utility adjustment
1312 phase of the project.

1313 *Potential Environmental Concerns Observed During Site Reconnaissance*

1314 The following potential environmental concerns were observed during the site reconnaissance
1315 conducted on May 7, 2014:

1316 ▪ Yummy Donut Shop, 3529 SH 42, southeast corner of FM 2206 at SH 42. Based on the
1317 presence of a canopy and a former pump island, this facility appears to be a former
1318 unregistered gasoline service station. The regulatory database and TCEQ PST/LPST website
1319 searches did not identify the property. The site reconnaissance could not identify if the USTs
1320 from previous facility operation had been removed or remained in place. The presence of
1321 potential USTs or previous release cannot be documented. Because additional ROW would
1322 be required from this location, this facility has been determined to present an environmental
1323 concern for the proposed project.

1324 The location and disposition of underground storage tanks, if present, would be addressed
1325 further during the ROW acquisition/negotiation phase of the project.

1326 ▪ Petroleum tank farm, southwest corner of FM 2206 at SH 42. No signage identifying the
1327 name of this facility was observed during site reconnaissance; however, based on the
1328 regulatory database search results, it appears to be the Plains Pipeline Sabine River site
1329 (Map ID#2).

1330 *Potential Asbestos- Containing Materials (ACMs) and Lead-Based Paints (LBPs)*

1331 The proposed project includes the demolition of building and bridge structures within the proposed
1332 ROW during construction. These structures have the potential for the release of ACM and LBP.
1333 Asbestos and LBP inspections, specification, license, accreditation, abatement and disposal, as
1334 applicable, would comply with Federal and state regulations. Asbestos and lead-based paint issues
1335 would be addressed during the ROW process prior to construction.

1336 *Utility and Pipeline Adjustments and Relocations*

1337 At this time, utility and pipeline adjustment requirements have not been determined. There is a
1338 potential for contamination to be encountered during utility adjustments. Coordination with utility
1339 and oil/gas companies concerning this contamination would be addressed during the ROW stage of
1340 project development. It is anticipated that all utility and pipeline adjustments or relocation would be
1341 completed prior to construction.

1342 *Project Construction*

1343 The contractor would take appropriate measures to prevent, minimize, and control the spill of
1344 hazardous materials in the construction staging areas. The use of construction equipment within
1345 sensitive areas would be minimized or eliminated entirely. All construction materials used for this
1346 project would be removed as soon as work schedules permit.

1347
1348 If contaminated groundwater or soils is encountered during construction, appropriate safety
1349 measures would be followed in accordance with Federal and state regulations.

1350 *5.2.11.3 Build Alternative: Encroachment-Alteration Indirect Impacts*

1351 The discussion of hazardous materials is unlike any of the other issues discussed in this EA
1352 because it focuses on potential impacts that might result if earth-moving activity encounters pre-
1353 existing contaminants in soils or groundwater. As construction activity would be restricted to the
1354 project footprint, it is unlikely that the proposed project would mobilize contaminants in the soil or
1355 groundwater beyond construction areas.

1356 *5.2.12 Construction Impacts*

1357 *5.2.12.1 No-Build Alternative*

1358 The No-Build Alternative would not result in any construction impacts.

1359 *5.2.12.2 Build Alternative*

1360 Although temporary congestion may occur as a result of project construction, access to parcels in
1361 the project vicinity would be maintained during all phases of construction. All practicable steps
1362 would be taken to minimize the inconvenience to drivers using the intersecting roadways during the
1363 construction phase. People living and working in the immediate area of the proposed project may
1364 experience noise and dust due to the construction activities.

1365 *5.2.13 Encroachment-Alteration Effects*

1366 Encroachment-alteration effects are those that affect the functions of the natural and socio-
1367 economic environments due to proposed project features but are removed in time or distance from
1368 the direct effects.

1369 *5.2.13.1 Ecological Encroachment-Alteration Impacts*

1370 Potential encroachment-alteration impacts on waters of the U.S. (including wetlands) from roadway
1371 projects include the fill and degradation of waters of the U.S. from induced development. Potential
1372 encroachment-alteration impacts on floodplains from roadway projects include increases in storm
1373 water runoff due to changes in land use and increased development that may be accelerated by
1374 improved mobility to the transportation system in the surrounding area. Anticipated fill impacts to
1375 waters and floodplain impacts would generally be limited to the project footprint. With regard to
1376 erosion of soil from construction sites, erosion and sedimentation would be minor and temporary
1377 (BMPs would be in place), and would cease upon establishing permanent vegetation cover after
1378 construction.

1379

1380 Potential encroachment-alteration impacts could occur with respect to vegetation removal for any
1381 induced development. As described in **Section 5.2.5**, the project has the potential to impact eight
1382 state-listed threatened species and two SGCNs. The conversion of vegetation to transportation use
1383 would contribute to habitat fragmentation, alteration, or loss. The proposed project would not alter
1384 the hydric regime or reduce diversity within the ecosystem. Indirect effects to vegetation and
1385 wildlife habitat are discussed further in **Section 6.0**.

1386 *5.2.13.2 Socioeconomic Encroachment-Alteration Impacts*

1387 Encroachment-alteration effects to socioeconomic resources are anticipated due to the improved
1388 mobility that would occur as a direct result of the proposed project. Two broad forms of socio-
1389 economic impacts include: 1) changes in travel patterns and access, and 2) direct relocation of
1390 homes and businesses. These direct impacts may lead to indirect effects on neighborhood
1391 cohesion, neighborhood stability (maintained residential and commercial ownership rates, safety,
1392 etc.), travel patterns, changes in the local economy, changes in access to specific services,
1393 recreation patterns at public facilities (public use of facilities such as parks and school yards),
1394 pedestrian dependency and mobility, and perceived quality of the natural environment, among
1395 others. Changes in access can include driveway changes, relocations of ramps, alterations of
1396 intersections that restrict or increase access to local streets, or the introduction of bicycle and
1397 pedestrian facilities. These may result in changes in travel patterns and the economics of travel
1398 patterns and corresponding land uses. Changes in access could result in beneficial impacts to
1399 public services and facilities; encroachment impacts to the socio-economic environment are
1400 discussed in further detail below.

1401 *Changes in Traffic Patterns and Access*

1402 In terms of traffic operations, the improvements are expected to increase mobility by improving
1403 traffic flow along FM 2206 and providing multi-modal travel options in the form of sidewalks and a
1404 shared-use lane. The roadway mobility improvements are expected to have a positive impact on
1405 emergency vehicles and other public services. Improved access to these services is a benefit to all
1406 populations.

1407 *Other Socioeconomic Impacts*

1408 With respect to encroachment-alteration effects to socio-economic resources, indirect impacts
1409 would be driven by changes in travel patterns and access associated with the proposed project. The
1410 potential indirect impacts would include improved vehicular access to employment opportunities,
1411 markets, goods, services, residential uses, and public facilities due to increased vehicular mobility.
1412 Other factors, such as real estate market conditions, local government development codes and
1413 plans, city financing opportunities (for various public facility improvements), anticipated growth,
1414 public facility and amenities siting (schools, health care facilities, greenspace, etc.), changes in
1415 energy costs, and other local and regional roadway improvements play a role in nearby land
1416 development investment decisions. However, real estate investment decisions are typically made
1417 with regard to factors such as transportation access and mobility. Although not the sole factor in

1418 inducing these development projects, the proposed project may introduce a potential acceleration
1419 in these land development decisions. In summary, it is anticipated that the proposed improvements
1420 would have a beneficial effect on overall socioeconomic conditions in the project area.

1421 **6.0 Indirect Impacts**

1422 **6.1 Guidance**

1423 The preceding sections of this document have described the proposed project and its direct effects
1424 on the environment. The CEQ defines direct effects as those effects that are “*caused by the action*
1425 *and occur at the same time and place*” (40 CFR 1508.8, emphasis added). Direct effects are
1426 predictable and are a direct result of the project.

1427
1428 In addition to direct effects, major transportation projects may also have indirect effects on land
1429 use and the environment. As defined by the CEQ, indirect effects are “caused by an action and
1430 occur later in time or farther removed in distance, but are still reasonably foreseeable. Indirect
1431 effects may include growth-inducing effects and other effects related to induced changes in the
1432 pattern of land use, population density or growth rate, and related effects on air and water and
1433 other natural systems, including ecosystems” (40 CFR 1508.8). This section describes the potential
1434 indirect induced growth caused by the proposed project, utilizing guidance from TxDOT’s
1435 *Environmental Handbook: Indirect Impacts Analysis* (TxDOT Environmental Affairs Division 2015).

1436
1437 The risk assessment checklist for indirect impacts provided in TxDOT’s Environmental Compliance
1438 Toolkit was used to determine if indirect induced growth impacts analysis is required for the
1439 proposed project. **Table 22** summarizes the risk assessment checklist and confirms the need to
1440 conduct the induced development analysis.
1441

1442 *Table 22: Risk Assessment Screening Tool – Induced Development*

Risk Variable	Assessment
Does the Purpose and Need include economic development, or is the project proposed to serve a specific development?	No
Are economic development or new opportunities for growth/development cited as benefits of the project?	No
Is land in the project area available for development and/or redevelopment?	Yes
Does the project add capacity?	Yes
Is the project located in a rural area outside of the MPO boundary?	No
Does the project substantially increase access or mobility in the project area?	Yes
Is the project area experiencing population and/or economic growth?	Yes

Source: TxDOT, April 2014

1443 **6.2 Step 1: Define the Methodology**

1444 A collaborative judgment approach, supported by the planning assumptions and land use
 1445 predictions made by the Longview MPO, was utilized to identify anticipated development trends and
 1446 the probability of the proposed project to influence local land use decisions within the area of
 1447 influence (AOI). An essential aspect of scoping the proposed project for potential indirect induced
 1448 growth is coordination with local government staff who are intimately acquainted with the
 1449 characteristics of the community and plans for addressing socio-economic issues. Accordingly, to
 1450 obtain input relevant to defining the AOI, as well as current planning documents, proposed
 1451 development projects, and other data relevant to the analysis of the proposed project's indirect and
 1452 cumulative impacts, representatives from the Longview MPO and the City of Longview's
 1453 Development Services Department were consulted during January 2016.

1454
 1455 Information from the interviews with the Longview MPO and City of Longview staff, planning
 1456 documents, and various maps made publicly available on the local governments websites are
 1457 provided in the discussion of indirect induced growth impacts. Information from the Longview MPO
 1458 and the City staff also guided the exercise of planning judgment that necessarily extends
 1459 throughout the analysis of indirect impacts.

1460
 1461 This analysis provides quantified acreages of land uses within the AOI when appropriate; however,
 1462 given the uncertainty inherent in predicting induced growth, some qualitative assumptions and
 1463 assessments are necessary.

1464 **6.3 Step 2: Define the AOI and Study Timeframe**

1465 The first objective is to define the scope of the analysis by considering the potential indirect induced
 1466 growth impacts and the possible geographic range of those impacts. This is done by considering the
 1467 attributes and context of the proposed project, and leads to a general assessment of the level of
 1468 impacts anticipated. In addition, the assessment considers the distance from the project construction

1469 footprint necessary for those impacts to attenuate to a negligible level. This approach helps determine
1470 the level of effort and approach needed to complete the analysis, and is also vital in achieving the
1471 second objective of determining the geographic extent of the indirect impacts study area or AOI.

1472 **6.3.1 Project Attributes and Context**

1473 FM 2206 is a primary east-west transportation corridor in the central part of Gregg County, just
1474 west of Longview. Approximately half of the project area falls within the city limits of Longview and
1475 its extraterritorial jurisdiction. This roadway is a minor arterial that links the unincorporated western
1476 portion of Gregg County with SL 281 and the city of Longview. Along FM 2206 west of Fisher Road
1477 in the project area, the community can be characterized as rural residential and undeveloped land.
1478 The area between Fisher and Premier Road is industrial, and west of Premier Road toward
1479 Longview it is mostly residential. The project area has been historically rural with the exception of
1480 the above mentioned industrial land use. The proposed project has been planned to add capacity
1481 and to improve safety along FM 2206.

1482 **6.3.2 Geographic Boundary of the AOI**

1483 The basic objective in creating an AOI is to delineate a study area within which all substantial
1484 project-related impacts are expected to occur. As the assessment of direct project impacts
1485 generally stops at the limits of the construction area within existing and proposed ROW/easements
1486 (i.e. the 'project footprint'), establishing an AOI extends the area of consideration to the point where
1487 all impacts are expected to attenuate to a negligible level or where other infrastructure constituted
1488 a greater impact on development compared to the proposed project.

1490 The AOI encompasses an area of approximately 1,223 acres. It is generally defined as parcels
1491 adjacent to the proposed project area, bounded on the west by SH 42 and on the east by SL 281.
1492 The adjacent parcels that surround the limits of the proposed project are considered the most likely
1493 to experience potential induced growth resulting from the proposed project. The AOI boundary is
1494 illustrated in **Figure 12** in **Appendix A**.

1495 **6.3.3 Time Frame for Assessing Indirect Impacts**

1496 A temporal frame of reference is necessary when addressing the range of impacts that may be
1497 caused by the proposed project in the future. The discussion below considers indirect induced
1498 growth impacts that may occur between the time of project construction (2019) and 2040, the
1499 planning horizon for the Longview MPO's 2040 MTP.

1500 **6.4 Step 3: Identify Areas Subject to Induced Growth in the AOI**

1501 Scattered areas of undeveloped land and potential sites for redevelopment are present within the AOI. A
1502 categorization of land uses within the AOI by parcel was developed using aerial imagery, parcel data, and
1503 information collected during field survey, and is presented below in Table 23. Based on this information,
1504 approximately 334 acres are considered developable (e.g. land located outside of the 100-year
1505 floodplain, not including future ROW, etc.), representing approximately 27% of the land within the AOI.
1506

1507 **Table 23: Current Land Uses within the Area of Influence**

Land Use Category	Acres	Percent of AOI
Agricultural/Undeveloped	334.2	27.3
Cemetery	42.8	3.5
Church	3.1	0.3
Commercial	262.5	21.5
Floodplain	211.1	17.3
Government	5.9	0.5
Industrial	83.9	6.9
Mobil Homes	37.6	3.1
Oil/Gas	54.6	4.5
Residential	90.7	7.4
Residential and Commercial	1.5	0.1
Residential and Agricultural	27.6	2.3
Utility	3.4	0.3
Right-of-Way	63.7	5.2
Total	1,222.6	100%

Source: CMEC 2016.

1508 In **Table 23** above, agricultural and undeveloped land represent the land use categories that could
 1509 be developed. These types of tracts are evenly dispersed throughout the AOI (see **Appendix A:**
 1510 **Figure 12**).

1511 **6.5 Step 4: Determine if Growth is Likely to Occur in the Induced**
 1512 **Growth Areas**

1513 This step presents information on development trends and community goals within the AOI.
 1514 Following this discussion, areas of potential future development are identified and quantitatively
 1515 evaluated. As the National Cooperative Highway Research Program (NCHRP) noted in *Report 466:*
 1516 *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*, “[i]ndirect
 1517 effects can be linked to direct effects in a causal chain” (NCHRP 2002, Page 2). Reasonably
 1518 foreseeable effects are “sufficiently likely to occur that a person of ordinary prudence would take
 1519 them into account in making a decision” (NCHRP 2002, Page 3). Reasonably foreseeable events
 1520 must be probable, not just possible. Probability also helps distinguish indirect effects from direct
 1521 effects: direct effects are often inevitable, while indirect effects are simply probable. The NCHRP
 1522 Report 466 states “[e]ffects that can be classified as possible but not probable may be excluded
 1523 from consideration” (Page 3). Therefore, this section seeks to determine whether development in
 1524 the AOI induced by the project is probable.

1525 6.5.1 Regional and Local Trend Data

1526 Gregg County and this region experienced a large increase in population during the East Texas oil
1527 boom. From 1930 to 1940, Gregg County’s population increased by 268% (MTP 2014). The
1528 substantial influx of people was also accompanied by a proportional increase in freight transported
1529 by train. Remnants of this industrialization are still evident to this day. Trinity Rail and Eastman
1530 Chemical Company are the two largest employers in the city of Longview, with a combined total of
1531 3,300 employees. Gregg County has grown at a steady rate since 1980. The city of Longview
1532 remains one of the most populous cities in the region despite lower growth rates since 1990 (MTP
1533 2014).

1534
1535 The western portion of the project area is largely undeveloped land with rural housing as well as oil
1536 production. Many commercial and industrial business are concentrated toward the center of the
1537 project area near Fisher Road and Prowler Street. The eastern portion of the project area is
1538 characterized by residential neighborhoods.

1539
1540 According to the decennial Census, the population of Longview in 2010 was 80,455, up 9.7% from
1541 73,344 in 2000. The Longview MPO develops a Regional Growth Forecast, including population,
1542 employment, and land use for all of Gregg County and small portions of Harrison and Upshur
1543 Counties. According to the Longview MPO projections, the project area within the planning area is
1544 anticipated to see low to moderate growth between 2007 and 2040 (Table 24).

1545
1546 Based on these demographic and land use trends, it can be concluded that there is a potential for
1547 continued future growth in the AOI.

1548 *Table 24: Population Projections*

Place	2007 Population	Projected 2040 Population	Numerical Change, 2007-2040	Percent Growth, 2007-2040	Average Annual Percent Growth, 2007-2040
Longview MPO*	127,535	164,728	37,193	29%	0.78%

Source: MTP 2014.

*The Longview planning model area represents all of Gregg County and small portions of Harrison and Upshur counties.

1549 6.5.2 Local Plans

1550 A variety of plans exist to promote, guide, and monitor various development activities in the city of
1551 Longview and the surrounding area. The proposed project area is within the jurisdiction of the
1552 Longview MPO. A brief description of the most influential aspects of local plans in relation to the
1553 proposed project and surrounding AOI is presented below.

1554
1555 The Longview MPO MTP 2040 (adopted November 10, 2014) is a response to the transportation
1556 needs of the community for the next 25 years in a three-county region. The document includes the

1557 proposed project. The plan also states that area is at risk of becoming a nonattainment zone if it
1558 does not achieve the new ozone NAAQS. Included in the MTP is a future land use section; it shows
1559 the majority of the area in the AOI is slated to be commercial and industrial, with some residential
1560 areas on the east side, near Longview.

1561
1562 The Longview Comprehensive Plan (adopted March 12, 2015) is a detailed analysis of growth
1563 patterns in the area, present and future land use, and transportation needs. The document does
1564 not designate the AOI as an area expected to grow, although it does include a proposed fire station
1565 that would serve the AOI. The document repeatedly cites the Longview Zoning Map, which
1566 designates the majority of the AOI within the city limits as industrial on the western end of FM 2206
1567 and residential on the eastern end.

1568
1569 The Longview MPO Regional Thoroughfare Plan (adopted November 10, 2014) was created to
1570 provide consistency of roadway standards among the member cities, counties, and agencies. The
1571 document designates FM 2206 as a minor arterial. It also analyses several build-out scenarios, and
1572 makes recommendation for the design of roads to include multimodal facilities and aesthetic
1573 features.

1574 6.5.3 Potential for Induced Development

1575 The preceding sections have demonstrated a low to moderate potential for growth in the AOI during
1576 the analysis period of 2019–2040. This section will evaluate the nature of this growth and attempt
1577 to determine whether it can be causally linked to the proposed project. The evaluation of whether
1578 the proposed project is likely to result in project-induced land use change is patterned after the
1579 procedures in the NCHRP Project 25-25, Task 22. Project-induced land use change can include
1580 project-induced development, the redevelopment of previously developed land, or a change in the
1581 rate of development/redevelopment. Of the six land use forecasting tools introduced in the report,
1582 the “collaborative judgment” forecasting tool was used as the framework for the analysis. The
1583 planning judgment method seeks to make reasonable judgments about potential project-induced
1584 impacts based on information gleaned from the opinions and experience of professionals, through
1585 literature review and through an assessment of existing and forecasted local conditions. To this
1586 end, input from the Development Coordinator from the Longview MPO and a City of Longview
1587 planner was obtained to assess the potential for project-induced land use impacts.

1588
1589 The proposed improvements would add capacity and improve safety. Because the project is not a
1590 new-location roadway, it would not open up new areas for development or substantially change
1591 access. Literature reviewed for this project, including NCHRP Report 466 (NCHRP 2002), NCHRP
1592 Project 25-25 Task 22, *Forecasting Indirect Land Use Effects of Transportation Projects* (NCHRP
1593 2007), and a Center for Transportation Research study by Kockelman et al. (2001), suggest that
1594 transportation improvements are a factor in land development decisions, but usually not the most
1595 important factor. Specifically, the Kockelman et al. report states that “[c]hanges in the
1596 transportation network only serve to redirect and redistribute growth rather than attract entirely
1597 new growth to a region that would not otherwise have occurred.” (Kockelman et al. 2001)

1598 Staff from the Longview MPO and City of Longview’s Development Services Department were asked
1599 where development is expected to occur and whether the proposed improvements would induce
1600 growth. Specifically, they were asked the following questions:

- 1601 ▪ Are there new developments within this area that are planned or platted? Platted but not yet
1602 developed?
- 1603 ▪ Which areas do you think would likely be developed between the present and 2040 as a
1604 result of the proposed construction of the FM 2206 project?
- 1605 ▪ In your opinion, will transportation improvements induce land use development in your
1606 jurisdiction, alone or in conjunction with other factors?
- 1607 ▪ How would the proposed mobility improvements affect existing development and future
1608 growth in the project study area?
- 1609 ▪ Would the proposed construction of these improvements affect the rate of land use
1610 development in your jurisdiction?
- 1611 ▪ If development does occur, would it be consistent with your city’s plans?
1612

1613 Karen Owen (Longview MPO) and Angela Choy (City of Longview planner) provided information on
1614 development history within the AOI and also commented on growth trends. Both agreed that there
1615 is not much potential for this project to induce growth within the AOI. They added that future growth
1616 in the AOI is more likely to be influenced by changes in the industrial economy rather than the
1617 proposed transportation improvements. They also stated that the planned development within this
1618 portion of the city is located outside of the AOI. They concluded by saying that any development that
1619 would occur in the portion of the AOI that falls within the jurisdiction of City of Longview would have
1620 to comply with the city’s ordinances.

1621 **6.6 Steps 5 and 6: Identify Resources Subject to Induced Growth**
1622 **Impacts and Identify Mitigation, if Applicable**

1623 In consideration of the above factors, the proposed improvements would not likely result in induced
1624 growth within the AOI. While the proposed project would add capacity and improve safety along FM
1625 2206, these transportation improvements would not result in changes considered substantial
1626 enough to cause shifts in current development rates and patterns within the AOI. Considering the
1627 nature of the proposed improvements, coupled with the absence in demand for land use changes
1628 along the FM 2206 corridor or within the AOI, the proposed improvements would not result in
1629 induced growth or related effects. This approximate 4-mile stretch of FM 2206 would be expected
1630 to continue to function primarily as a minor east-west transportation corridor, connecting eastern
1631 Gregg County to SL 281 and the City of Longview.

1632
1633 No induced growth is anticipated; therefore, no resources are anticipated to be impacted and no
1634 mitigation is proposed.

7.0 Cumulative Impacts

The following discussion summarizes the questions and answers from TxDOT's *Cumulative Impacts Risk Assessment* (TxDOT 2014).

Question 1: Will the project have substantial direct or indirect impacts on any resource? No substantial direct or indirect impacts are anticipated. Technical analyses have been conducted for the following environmental resources/issues: biological resources, water resources, air quality, traffic noise, community impacts, cultural resources, hazardous materials, and indirect impacts. Based on the outcome of the indirect impacts analysis, potential induced development is not anticipated as a result of the proposed project.

Question 2: Are any resources in the project area in poor or declining health? Yes. State-listed threatened species and SGCN may occur within the project area due to the existence of potentially suitable habitat. No effects to Federally-listed species are anticipated. Refer to the Biological Evaluation Form (under separate cover) and **Section 5.2.5** for detailed information regarding state-listed species and habitat.

Question 3: Will the project have any impact on a resource that is in poor or declining health? Yes; however, any impact to a state-listed threatened species or SGCNs would be a result of incidental occurrence of individuals within the project area. No significant impacts to these resources are anticipated. Although no individuals were observed during site visits of areas directly impacted by the proposed roadway improvements, the project area contains potentially suitable habitat at the Hawkins Creek crossing for the state-threatened creek chubsucker, alligator snapping turtle, Louisiana pigtoe, southern hickory nut, Texas heelsplitter, and woodstork. Potentially suitable habitat for the SGCN plains spotted skunk and Southeastern Myotis bat, and the state-threatened timber rattlesnake and Rafinesque's big-eared bat may exist within the undeveloped woodland portions of the project area. Although the proposed project may result in the removal of small tracts of suitable habitat or temporary disturbance of individuals of these species, the project is not anticipated to cause a significant impact to any species or rare habitat communities. The magnitude of direct impacts (approximately 14.456 acres of suitable woodland, prairie, wetland, or riparian vegetation along approximately 3.7 miles) represents a small portion of available habitat when compared to the geographic extent of these species' ranges. Additionally, FM 2206 is classified as an urban minor arterial roadway and lies within an already fragmented landscape caused by urbanization around the city of Longview. Several large tracts of contiguous habitat (primarily to the south and west of the project area) would not be impacted by the proposed improvements to FM 2206 and impacts to Hawkins Creek would be minimized during construction activities with BMPs to control soil erosion by limiting the amount of disturbed earth, preserving existing vegetation, and limiting vegetation removal. Per the 2013 TxDOT-TPWD MOU, BMPs would be implemented for all potentially occurring species (TxDOT 2014a). In summary, this project is not expected to have a significant impact on any state-listed threatened species or SGCN.

1676 The proposed project is expected to directly impact approximately 0.072 acre of emergent wetland
 1677 vegetation; approximately 2.213 acres of previously disturbed shrub-scrub vegetation;
 1678 approximately 11.998 acres of mixed pines and hardwoods forest vegetation; approximately 0.173
 1679 acre of sedge meadow; and 28.725 acres of maintained herbaceous ROW vegetation within the
 1680 proposed project area. None of these vegetation types are considered rare or “important remnant
 1681 vegetation” as mapped by the Texas Conservation Action Plan (TCAP). These vegetation types are
 1682 not considered in poor or declining health due to the presence of adjacent undeveloped tracts of
 1683 land and due to the proximity of similar habitats within the watershed of the Sabine River in Gregg
 1684 County.

1685
 1686 Direct impacts to these species or their potentially suitable habitat caused by the proposed project
 1687 is not likely to result in a change in the trend of any of these resources. The proposed project would
 1688 not result in significant incremental loss of additional suitable habitat through direct or indirect
 1689 impacts for the above mentioned species and is not expected to cause significant degradation to a
 1690 resource in poor or declining health; therefore, neither protected species nor remnant vegetation
 1691 will be carried forward for cumulative impacts analysis.

1692
 1693 **Table 25** below provides additional information about the direct and indirect impacts on each
 1694 resource and the health of each resource. Based on the results of the risk assessment, supported
 1695 by the information presented in **Table 25** and in the technical reports prepared for the proposed
 1696 project, further Cumulative Impacts Analysis is not required.

1698 *Table 25: Resource/Issues Considered for Cumulative Impacts Analysis*

Subject Considered for Direct and Indirect Impacts	TxDOT/CEQ Criteria*		Included for Cumulative Impacts Analysis?	Explanation for Including or Excluding the Subject from Cumulative Impacts Analysis
	Would Proposed Project or Induced Growth Result in Substantial Adverse Impacts?	Is Subject a Scarce Resource or in Poor or Declining Health?		
NATURAL RESOURCES				
Waters of the U.S., including Wetlands	No	No	No	Excluded. The proposed project is anticipated to be permitted by NWP 14 with a PCN. Future development would not likely affect full compliance with water quality protection regulations. Potential induced growth is not anticipated.

Subject Considered for Direct and Indirect Impacts	TxDOT/CEQ Criteria*		Included for Cumulative Impacts Analysis?	Explanation for Including or Excluding the Subject from Cumulative Impacts Analysis
	Would Proposed Project or Induced Growth Result in Substantial Adverse Impacts?	Is Subject a Scarce Resource or in Poor or Declining Health?		
Floodplains	No	No	No	Excluded because, although a portion of the project would lie within the 100-year floodplain and FEMA-designated floodway for Hawkins Creek, the hydraulic design of the project would permit conveyance of the 100-year flood, and potential inundation of the highway would not cause substantial damage to it, the streams, or other property. Potential induced growth is not anticipated.
Water Quality	No	No	No	Excluded because no permanent water quality impacts are expected from the proposed project, and required permits to control erosion during construction are expected to result in minimal temporary degradation of water quality. Potential induced growth is not anticipated.
Vegetation and Wildlife Habitat (Including Habitat for State-Listed Species)	No	Yes	No	Excluded. The construction of the proposed project is expected to impact a total of 0.072 acre of emergent wetland vegetation, 0.173 of sedge meadow, 11.998 acres of mixed woodland and forest, and 28.725 acres of maintained herbaceous ROW located within the proposed project area. These habitat types are not considered rare or important remnant vegetation as mapped by the TCAP. Suitable habitat for state-listed and SGCN species is fragmented throughout the project limits and general project area. Due to the fragmentation, any impact to these species would be localized to individuals of the population and would be minimized through the use of TPWD approved BMPs. These impacts would not be expected to be significant to these species throughout their range nor are they anticipated to impact the trajectory of any species as a whole. Potential induced growth is not anticipated.
Federally-Listed Threatened/Endangered Species	No	Yes	No	Excluded. No suitable habitat for Federally-listed threatened or endangered species is located in the project area. No Federally-listed species were observed during field observations. A review of TPWD's TXNDD did not indicate any Federally-listed species present within the project area. Potential induced growth is not anticipated.

Subject Considered for Direct and Indirect Impacts	TxDOT/CEQ Criteria*		Included for Cumulative Impacts Analysis?	Explanation for Including or Excluding the Subject from Cumulative Impacts Analysis
	Would Proposed Project or Induced Growth Result in Substantial Adverse Impacts?	Is Subject a Scarce Resource or in Poor or Declining Health?		
Air Quality	No	No	No	Excluded. Any increased air pollutant or MSAT emissions resulting from the potential development or redevelopment of the area must meet regulatory emissions limits established by the TCEQ and the EPA. In addition, with cleaner fuels, improved emission technologies, alternative modes of transportation, and regional clean air initiatives, the air quality in the area should continue to improve over time.
COMMUNITY IMPACTS				
Community Impacts	No	No	No	Excluded because the proposed project would not significantly adversely affect, separate, or isolate any distinct neighborhoods, ethnic groups, or vulnerable populations within the project area. Access and travel patterns would not change substantially because FM 2206 is an existing facility. Beneficial effects include increased capacity and enhanced safety. Potential induced growth is not anticipated.
Section 4(f) and 6(f) Properties	No	No	No	Excluded because no adverse impacts are anticipated to local parks or recreation areas; no adverse effects are anticipated to occur to resources eligible for the NRHP. Potential induced growth is not anticipated.
Limited English Proficiency	No	No	No	Excluded because adequate steps are planned to assist the LEP population within the project area throughout the public involvement process for the proposed project.
Environmental Justice	No	No	No	Excluded because no disproportionately high or adverse impacts on minority or low-income populations are anticipated as a result of the proposed project. Displacements are dispersed along the corridor and would not occur in EJ geographies. Potential induced growth is not anticipated.
Public Facilities/ Services/Utilities	No	No	No	Excluded. The City of Longview lift station at the corner of Foundry Drive and FM 2206 would not be displaced by the new alignment; however, the lift station would be within the new right-of-way. Potential induced growth is not anticipated.

Subject Considered for Direct and Indirect Impacts	TxDOT/CEQ Criteria*		Included for Cumulative Impacts Analysis?	Explanation for Including or Excluding the Subject from Cumulative Impacts Analysis
	Would Proposed Project or Induced Growth Result in Substantial Adverse Impacts?	Is Subject a Scarce Resource or in Poor or Declining Health?		
Cultural Resources				
Historic-Age Properties	No	No	No	Excluded because TxDOT historians determined that no historic properties are present within the project's APE. Individual project coordination with the SHPO is not required. Potential induced growth is not anticipated.
Archeological Resources	No	No	No	Excluded because no adverse effects are anticipated to occur to resources eligible for the NRHP. Potential induced growth is not anticipated.

*In accordance with TxDOT and CEQ selection criteria for limiting the scope of cumulative impacts analyses.

1699

1700 **8.0 Environmental Permits, Impacts and Commitments**

1701 All project-specific commitments and conditions of approval, including resource agency permitting
 1702 compliance and monitoring requirements, would be incorporated in the project plan for the
 1703 proposed project. These project-specific commitments and conditions for approval, as further
 1704 described below, may vary depending on the project's final design and construction. Mitigation
 1705 monitoring would be conducted by TxDOT and other Federal, state, and local agencies to ensure
 1706 compliance.

1707
 1708 This section summarizes the elements that constitute the Environmental Permits, Impacts and
 1709 Commitments (EPIC) sheet. The EPIC sheet, found in the Environmental Compliance Oversight
 1710 System, documents and communicates permit issues and environmental commitments that must
 1711 be incorporated into the Plans, Specifications, and Estimates design for the proposed project. The
 1712 permits, impacts and commitments relevant to the proposed project are as follows:

- 1713 ▪ It is anticipated that any impacts to waters of the U.S. would be authorized through NWP 14
 1714 with PCN. If any impacts to an individual waters of the U.S. exceed 0.5-acre, or the
 1715 thresholds of the general conditions of the NWP are exceeded, an IP would be required. If
 1716 any impacts to an individual waters of the U.S. exceed 0.1-acre, or if there are any impacts
 1717 to a jurisdictional wetland, a PCN would be required.
- 1718 ▪ TxDOT would comply with TCEQ's TPDES CGP. A SW3P would be implemented, and a
 1719 construction site notice would be posted on the construction site. A NOI would be required.

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- Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time.
 - The Section 401 Certification requirements for NWP 14 would be met by implementing approved erosion control, sedimentation control, and post-construction TSS control BMPs from the TCEQ's 401 Water Quality Certification Conditions for NWPs. The implementation of BMPs would prevent water quality impacts from occurring during and after construction.
 - In the *Best Management Practices Programmatic Agreement between TxDOT and TPWD Under the 2013 MOU*, BMPs have been defined and relevant BMPs will be implemented by TxDOT in order to minimize impacts to state-listed species and SGCNs (TxDOT 2014a). **Table 6** lists those BMPs related to species that may be impacted by the proposed project.
 - In accordance with EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT-approved seeding specifications would be done where possible. Moreover, abutting turf grasses within the ROW are expected to re-establish throughout the project length. Soil disturbance would be minimized to ensure that invasive species would not become established in the ROW.
 - In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided. The work may not remove active nests from bridges and other structures during the nesting season of the birds associated with the nests.
 - In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease, and TxDOT archeological staff will be contacted to initiate post-review discovery procedures.
 - Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable Federal and state regulations per TxDOT Standard Specifications. No unresolved hazardous materials situations for which TxDOT would be responsible are anticipated with respect to the project. Any adjustments to pipelines or potential utilities would use standard techniques. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. The use of construction equipment within sensitive areas would be minimized or eliminated entirely. All construction materials used for this project would be removed as soon as work schedules permit.
 - Coordination with the city of Longview for MS4 permit requirements will occur during construction of the project.
 - Notify the local Floodplain Administrator as necessary to comply with all applicable rules and regulations regarding the hydraulic design of the project.

9.0 Comments and Coordination

The first public meeting for the proposed reconstruction of FM 2206 was held on Wednesday, October 22, 2014 from 4:30 to 6:30 p.m. The open-house style public meeting was held at the Longview Exhibit Center located at 1123 Jaycee Dr. in Longview, Texas. Property and business owners, who potentially would be affected by the project, were invited to evaluate three design alternatives, and respond with comments and concerns. The meeting was attended by 53 public participants or stakeholders, one elected official - Rolin McPhee, the director of public works for the City of Longview, 13 TxDOT employees, including Eric Fisher and Vernon Webb, two Cox McLain Environmental Consulting employees, and five Burns & McDonnell employees.

The second public meeting for the proposed reconstruction of FM 2206 was held on Tuesday, August 18, 2015, from 5:00-7:30 p.m. The open-house style public meeting was held at the Pine Tree ISD Community Room located at 1701 Pine Tree Road in Longview, Texas. Property and business owners who potentially would be affected by the project, were invited to provide input on the recommended alternative. A postcard with the public meeting information was mailed out to each of the adjacent property owners in advance with details about the time and location. Invitations were sent to elected officials and a public meeting notice was also posted on the TxDOT public meetings and hearings website. The meeting was attended by 92 public participants or stakeholders; media representatives from KLTV and CBS 19; two elected officials, Alton Bradley and Ed Moore with the City of Longview; 19 TxDOT employees, including Eric Fisher, Brooke Droptini and Vernon Webb; three Cox McLain Environmental Consulting employees; and four Burns & McDonnell employees.

The public meetings were conducted in an open-house format; no formal presentations were given. The meetings were intended to provide attendees with an opportunity to view detailed plans and environmental constraints, discuss the project with TxDOT staff, and to receive updates on the project status and schedule. The meetings were also intended to gather public comment and input on the project. No requests for special accommodations were received by the District in advance of the meeting. Notices providing information on the project and the date and time of the meeting were sent to land owners with property adjacent to the project area. Letters were sent to the relevant elected officials and representatives for the project area. After each public meeting persons who made written comments and/or had questions about the project received a letter from the Tyler District that either addressed their comment or answered their question(s) about the project.

The first public meeting, public and stakeholder comments received included:

- Eight people out of the twenty-two participants commented that the project will impact their property, both during construction and after the project is completed.
- Several stakeholders were concerned about their property access, and requested new driveways.

- 1798 ▪ One stakeholder requested signs or a flashing yellow caution signal be placed outside of his
1799 business, where his trucks will be entering and exiting the roadway.
- 1800 ▪ Four stakeholders questioned why the existing travel lanes could not be maintained, while
1801 adding only a two-way, center turn lane. One of these four stakeholders asked if that type of
1802 design could be applied along with a redesigned intersection.
- 1803 ▪ Three stakeholders expressed concern over the length of the proposed construction
1804 schedule and how that could negatively impact their businesses and customers.
- 1805 ▪ Three stakeholders commented that the area would benefit from improved safety and
1806 increased traffic flow.
- 1807 ▪ One stakeholder proposed that new development could increase drainage problems in the
1808 area.
- 1809 ▪ One stakeholder voiced concern that all three alternatives seemed to make Cherokee St.
1810 dangerous and inconvenient.

1812 During the second public meeting key common topics discerned from the public and stakeholder
1813 comments received included:

- 1814 ▪ Twenty stakeholders commented that the project will impact their property, both during
1815 construction and after the project is completed.
- 1816 ▪ Several stakeholders were concerned about their property and neighborhood access, and
1817 requested new driveways.
- 1818 ▪ Some stakeholders were concerned about access for emergency vehicles, navigating to and
1819 from their properties.
- 1820 ▪ Two stakeholders proposed that new development could increase drainage problems in the
1821 area.

1822 **10.0 Determination of Assessment**

1823 The No-Build Alternative would avoid the direct impacts associated with the Build Alternative;
1824 however, it would not address the need and purpose for the proposed project. The Build Alternative
1825 is the recommended alternative, as it is responsive to the needs for the transportation
1826 improvement project based on projected increases in population and traffic.

1827 **10.1 Improve Mobility and Safety**

1828 The construction of the proposed transportation improvements would improve mobility by providing
1829 additional capacity along FM 2206.

1830 **10.2 Compatibility with Local, County, and Regional Needs and Plans**

1831 The proposed Build Alternative is compatible with local and regional planning. The Build Alternative
1832 has been incorporated into the regional planning documents of the project area. The project is
1833 scheduled to be added to the STIP in the near future.

1834 **10.3** *Minimize Social, Economic, and Environmental Effects on the*
1835 *Human Environment*

1836 The Build Alternative design described herein is the result of efforts to avoid or minimize social,
1837 economic, and environmental impacts. The Build Alternative incorporates results from consultation
1838 and coordination with public officials and citizens regarding potential impacts and efforts to avoid
1839 or minimize such impacts where practicable.

1840 **10.4** *Conclusion*

1841 The engineering, social, economic, and environmental investigations conducted thus far indicate
1842 that the proposed project would result in no significant impacts to the quality of the human or
1843 natural environment. Therefore, a Finding of No Significant Impact is anticipated for this project.
1844

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Appendix A Figures

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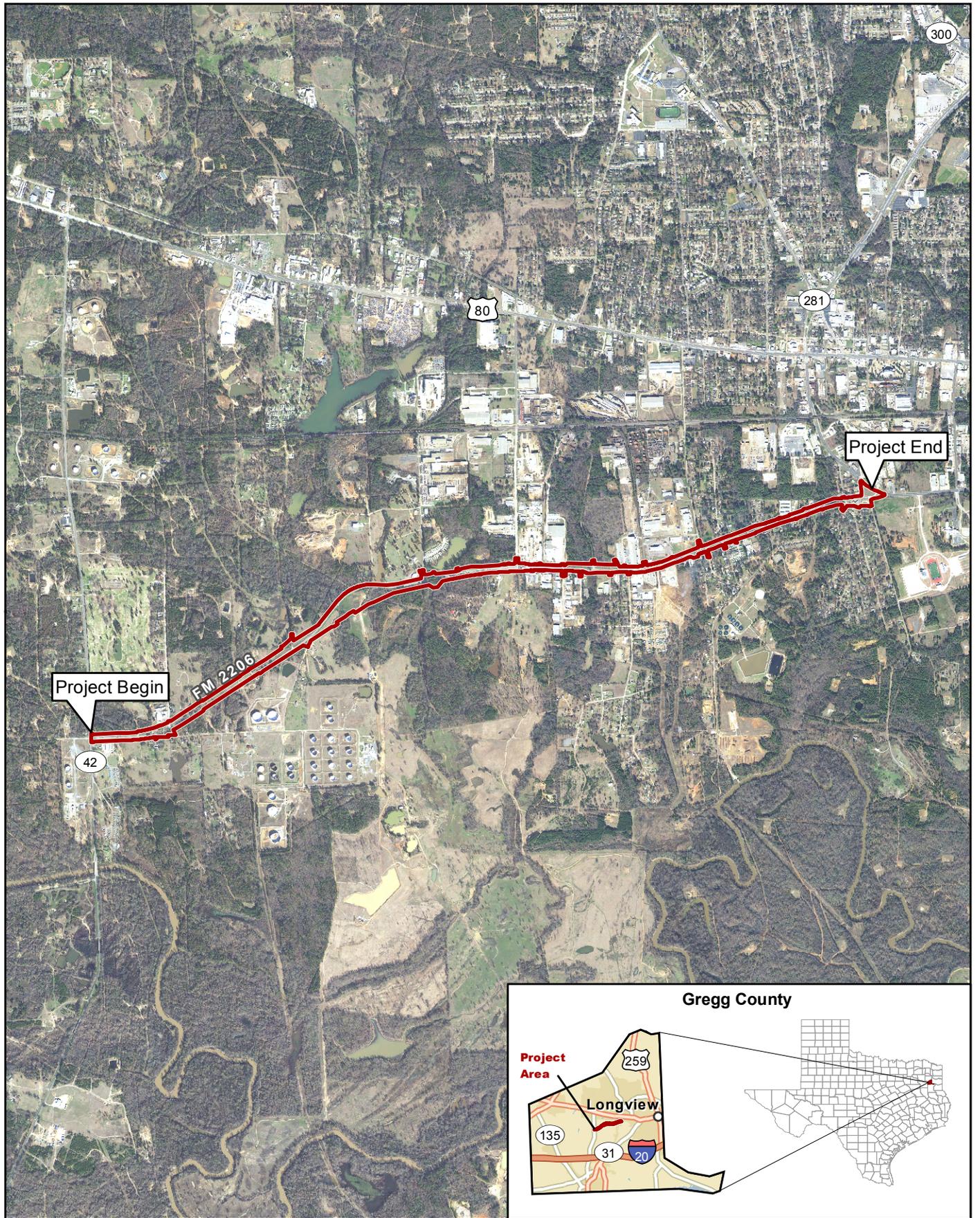
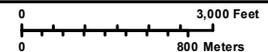


Figure 1
Project Location (Aerial Base)
 FM 2206 from SH 42 to Loop 281

 Project Location



Prepared for: TxDOT	1 in = 3,000 feet
	Scale: 1:36,000
	Date: 3/7/2016

Aerial Source: TNRIS (2015)

CSJ: 2073-01-009 and 2073-01-010

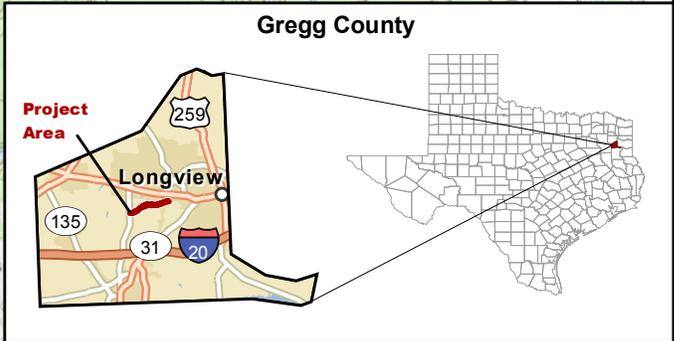
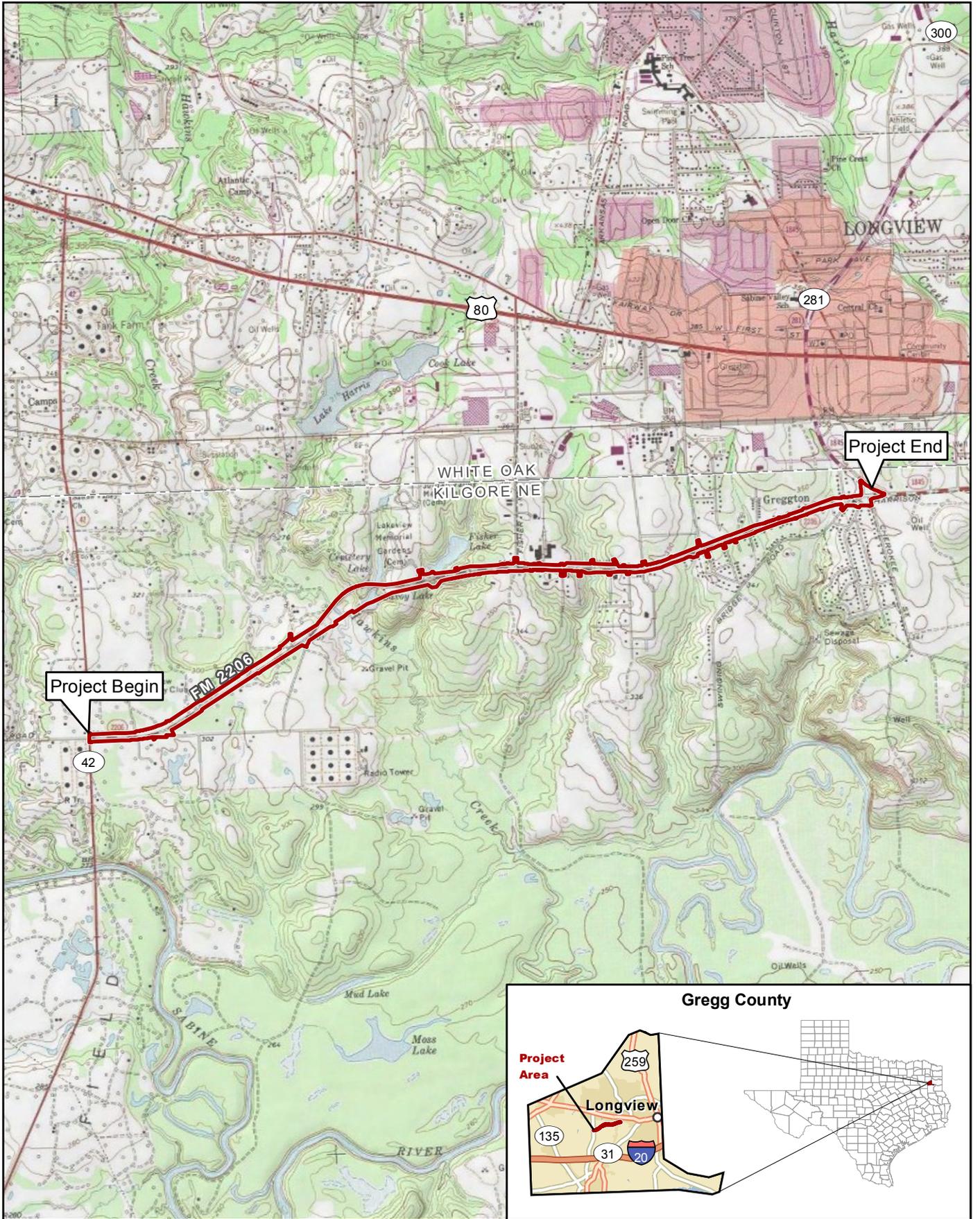


Figure 2
Project Location (Topographic Base)
 FM 2206 from SH 42 to Loop 281

Project Location

0 3,000 Feet
 0 800 Meters

Prepared for: TxDOT
 1 in = 3,000 feet
 Scale: 1:36,000
 Date: 3/7/2016

Basemap Sources: USGS White Oak and Kilgore NE 7.5' Quadrangles (1978, 1971)
 CSJ: 2073-01-009 and 2073-01-010

PAVEMENT LEGEND - SEE GENERAL NOTE 5

- (A) 2" HMA
- (B) ONE COURSE SURFACE TREATMENT
- (C) PRIME COAT
- (D) 14" FLEX BASE
- (E) 8" CEM TRT

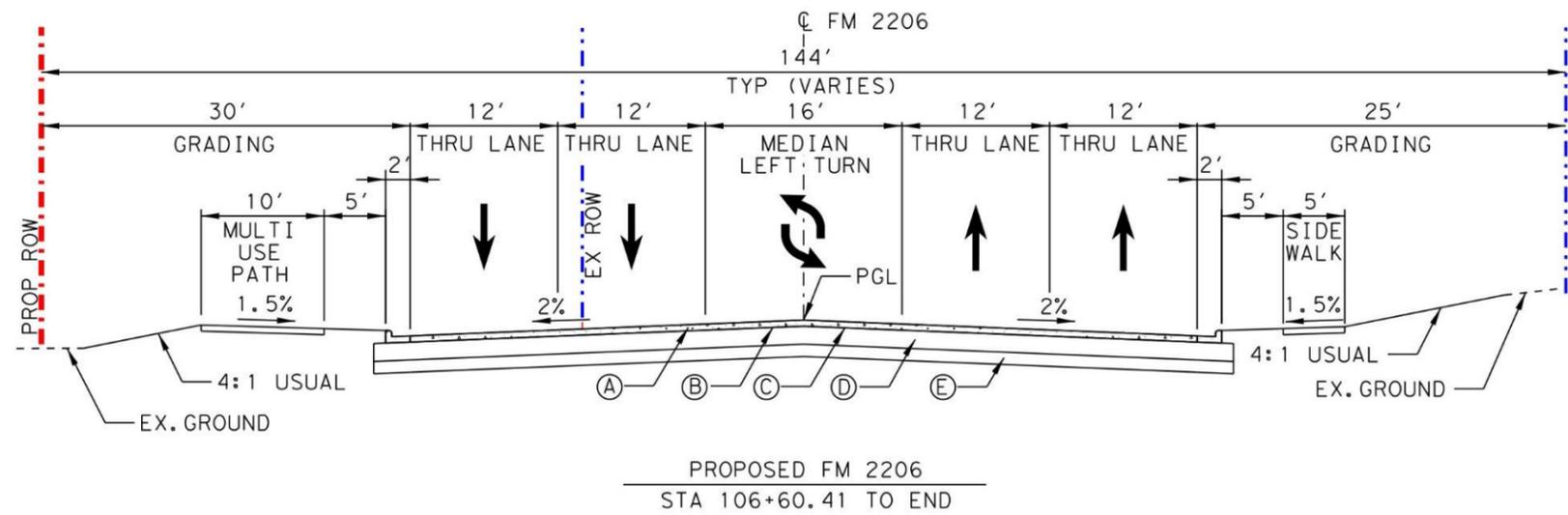
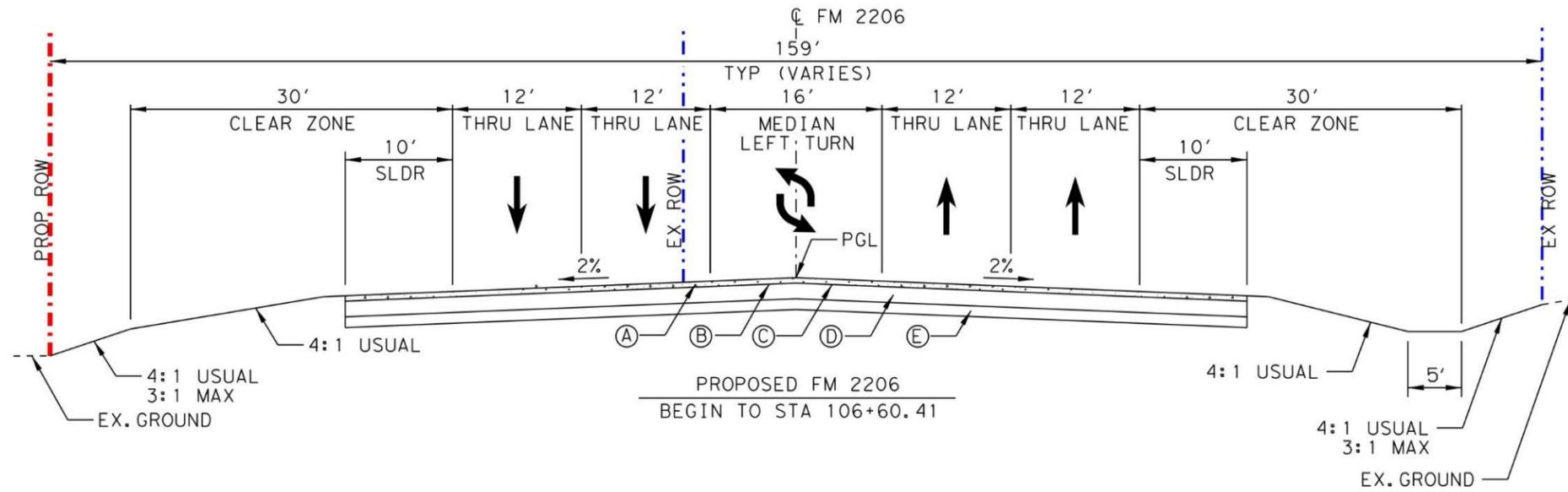
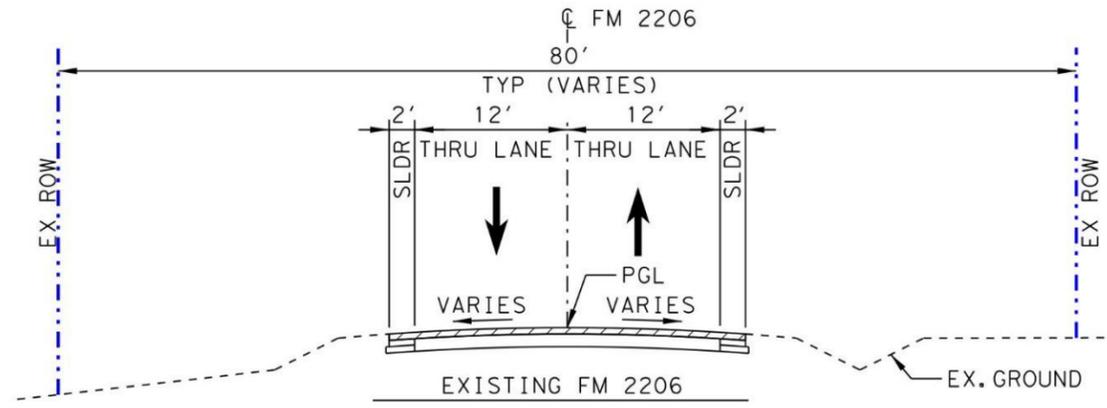
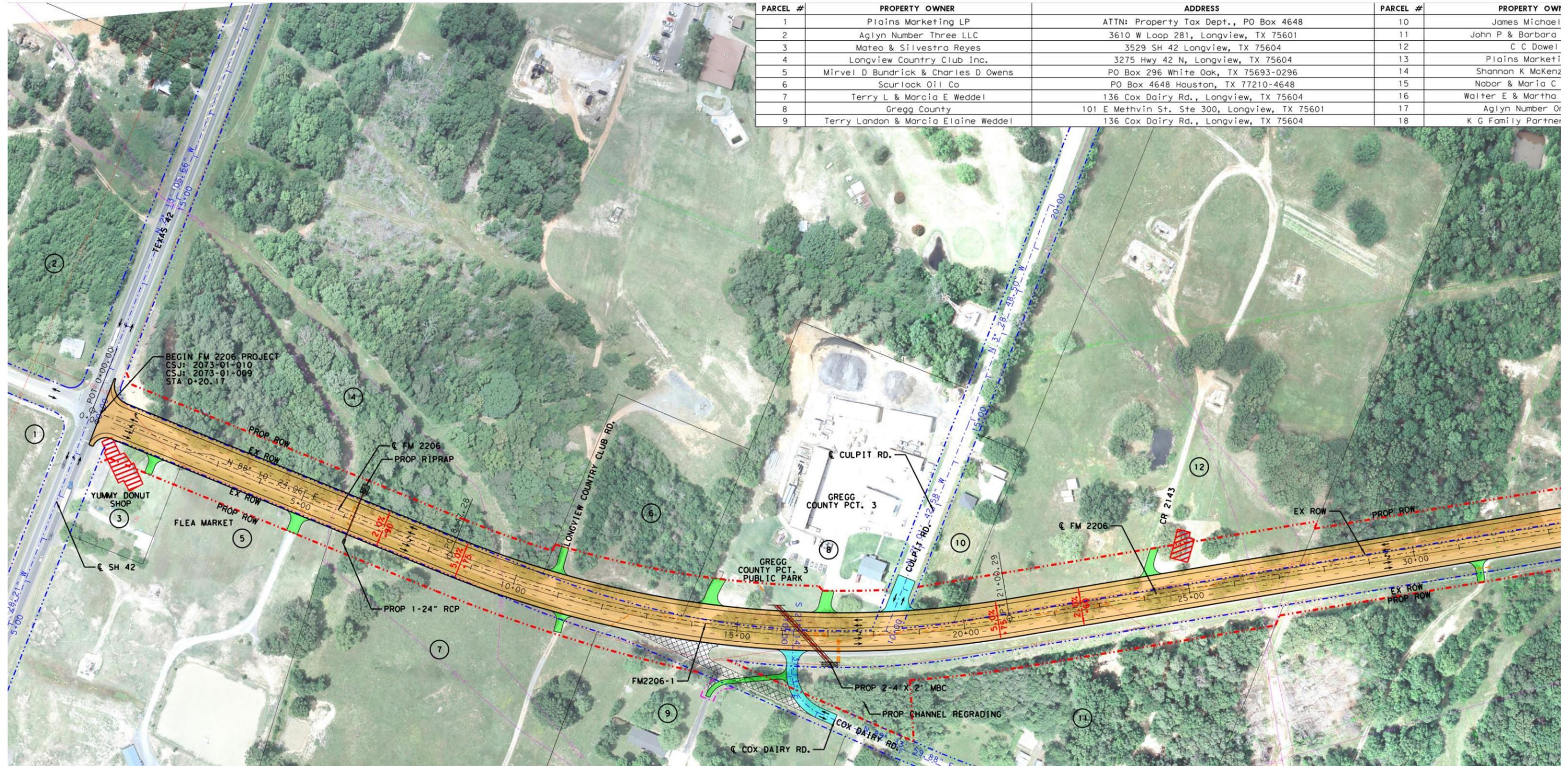


Figure 3
Typical Sections
 FM 2206 from SH 42 to Loop 281CSJ: 2073-01-009, 2073-01-010
 CSJ: 2073-01-009, 2073-01-010

PARCEL #	PROPERTY OWNER	ADDRESS	PARCEL #	PROPERTY OWNER
1	Plains Marketing LP	ATTN: Property Tax Dept., PO Box 4648	10	James Michael
2	Aglyn Number Three LLC	3610 W Loop 281, Longview, TX 75601	11	John P & Barbara
3	Mateo & Silvestra Reyes	3529 SH 42 Longview, TX 75604	12	C C Dowel
4	Longview Country Club Inc.	3275 Hwy 42 N, Longview, TX 75604	13	Plains Market
5	Mirvel D Bundrick & Charles D Owens	PO Box 296 White Oak, TX 75693-0296	14	Shannon K McKenzi
6	Scurlock Oil Co	PO Box 4648 Houston, TX 77210-4648	15	Nabor & Maria C
7	Terry L & Marcia E Weddel	136 Cox Dairy Rd., Longview, TX 75604	16	Walter E & Martha
8	Gregg County	101 E Methvin St. Ste 300, Longview, TX 75601	17	Aglyn Number Or
9	Terry Landon & Marcia Elaine Weddel	136 Cox Dairy Rd., Longview, TX 75604	18	K G Family Partner



- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL

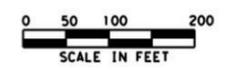
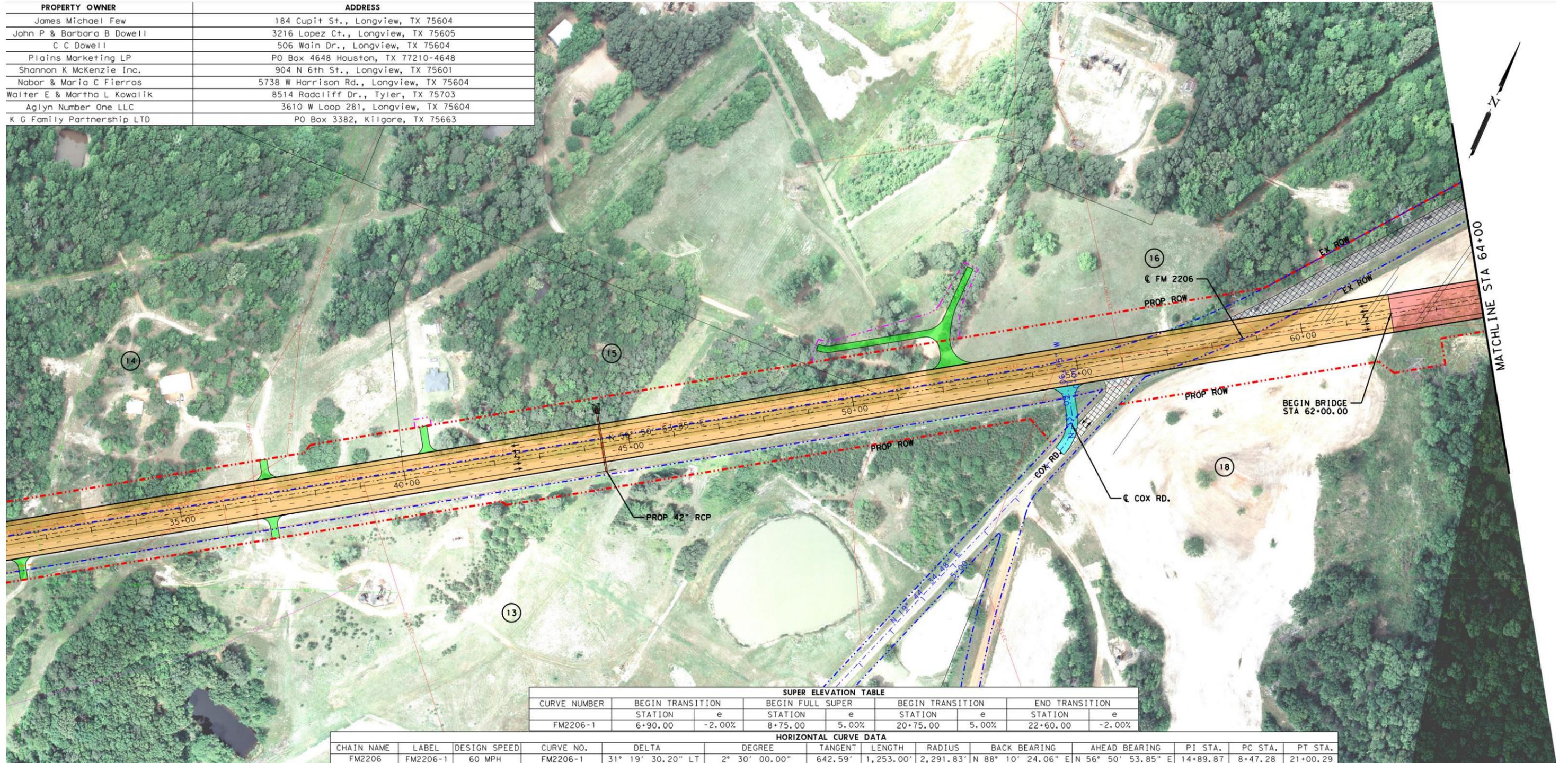


Figure 4a
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010

PROPERTY OWNER	ADDRESS
James Michael Few	184 Cupit St., Longview, TX 75604
John P & Barbara B Dowell	3216 Lopez Ct., Longview, TX 75605
C C Dowell	506 Wain Dr., Longview, TX 75604
Plains Marketing LP	PO Box 4648 Houston, TX 77210-4648
Shannon K McKenzie Inc.	904 N 6th St., Longview, TX 75601
Nabor & Maria C Fierros	5738 W Harrison Rd., Longview, TX 75604
Walter E & Martha L Kowalik	8514 Radcliff Dr., Tyler, TX 75703
Aglyn Number One LLC	3610 W Loop 281, Longview, TX 75604
K G Family Partnership LTD	PO Box 3382, Kilgore, TX 75663



CURVE NUMBER	BEGIN TRANSITION		BEGIN FULL SUPER		BEGIN TRANSITION		END TRANSITION	
	STATION	e	STATION	e	STATION	e	STATION	e
FM2206-1	6+90.00	-2.00%	8+75.00	5.00%	20+75.00	5.00%	22+60.00	-2.00%

CHAIN NAME	LABEL	DESIGN SPEED	CURVE NO.	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	BACK BEARING	AHEAD BEARING	PI STA.	PC STA.	PT STA.
FM2206	FM2206-1	60 MPH	FM2206-1	31° 19' 30.20" LT	2° 30' 00.00"	642.59'	1,253.00'	2,291.83'	N 88° 10' 24.06" E	N 56° 50' 53.85" E	14+89.87	8+47.28	21+00.29

- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL

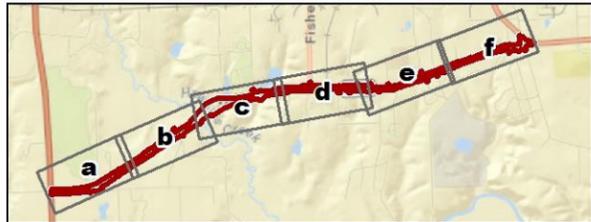
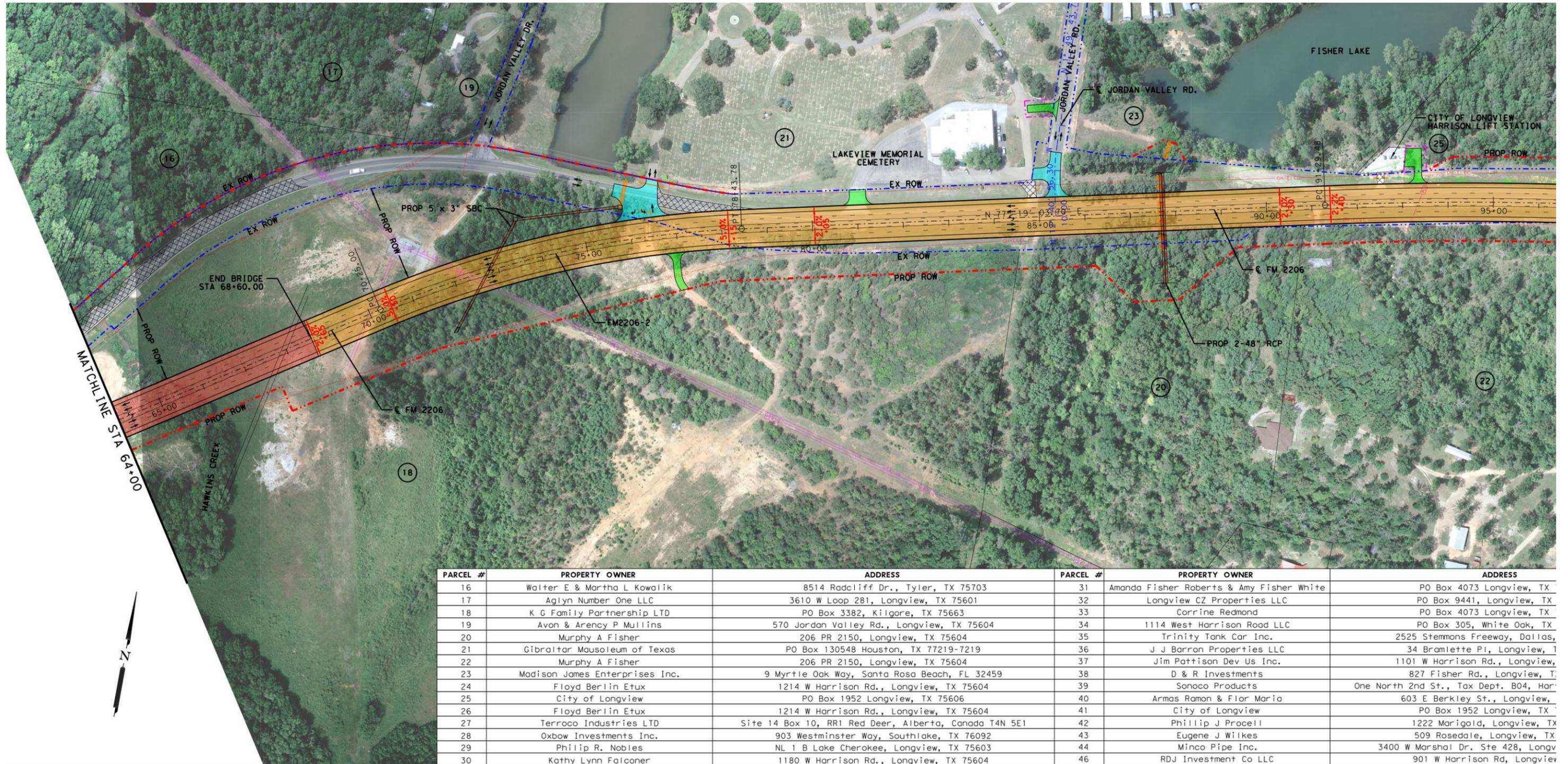


Figure 4b
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010

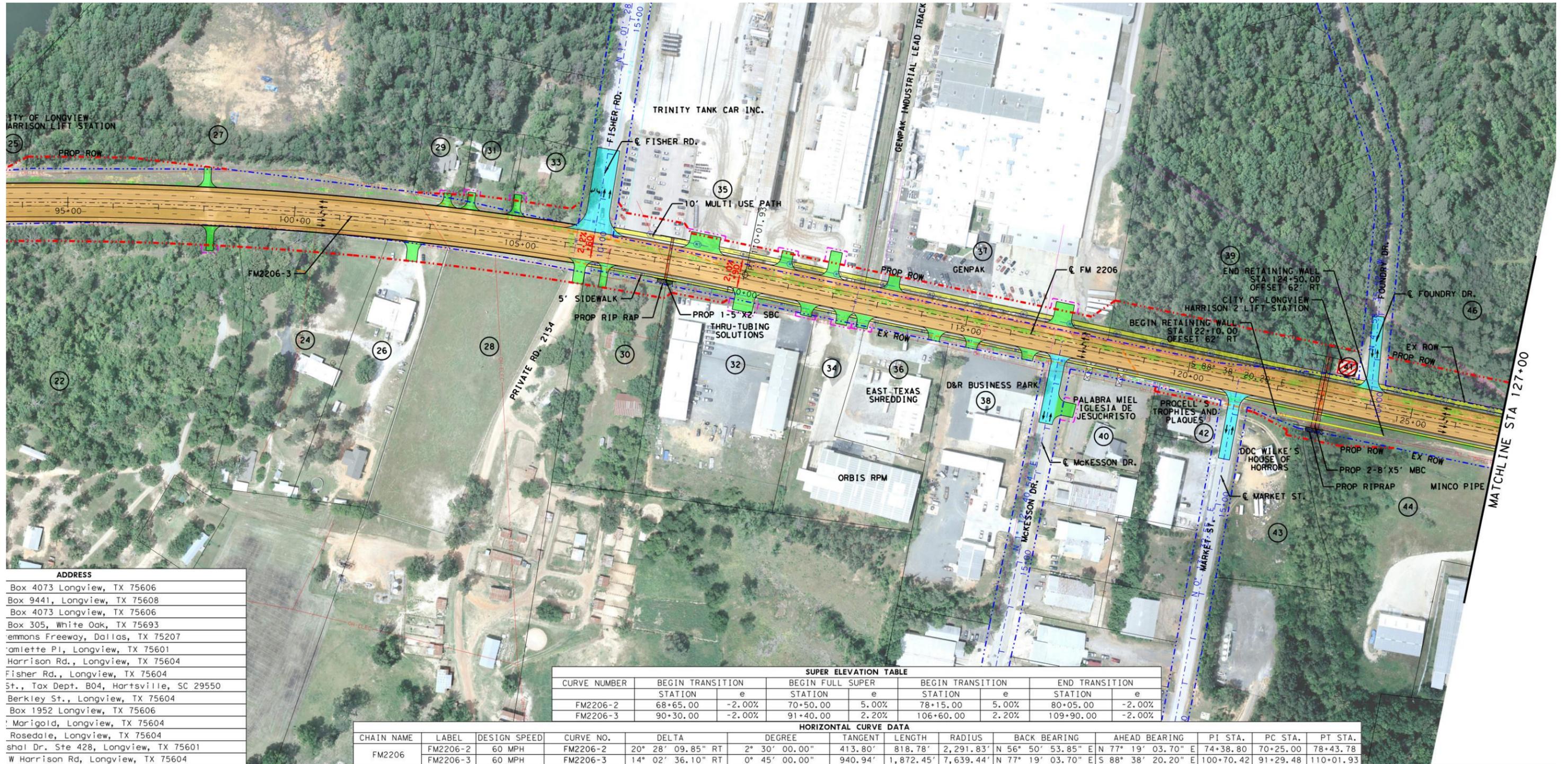


PARCEL #	PROPERTY OWNER	ADDRESS	PARCEL #	PROPERTY OWNER	ADDRESS
16	Walter E & Martha L Kowalik	8514 Radcliff Dr., Tyler, TX 75703	31	Amanda Fisher Roberts & Amy Fisher White	PO Box 4073 Longview, TX
17	Aglyn Number One LLC	3610 W Loop 281, Longview, TX 75601	32	Longview CZ Properties LLC	PO Box 9441, Longview, TX
18	K G Family Partnership LTD	PO Box 3382, Kilgore, TX 75663	33	Carrine Redmond	PO Box 4073 Longview, TX
19	Avon & Arency P Mullins	570 Jordan Valley Rd., Longview, TX 75604	34	1114 West Harrison Road LLC	PO Box 305, White Oak, TX
20	Murphy A Fisher	206 PR 2150, Longview, TX 75604	35	Trinity Tank Car Inc.	2525 Stemmons Freeway, Dallas,
21	Gibraltar Mausoleum of Texas	PO Box 130548 Houston, TX 77219-7219	36	J J Barron Properties LLC	34 Bramlette Pl, Longview, T
22	Murphy A Fisher	206 PR 2150, Longview, TX 75604	37	Jim Pattison Dev Us Inc.	1101 W Harrison Rd., Longview,
23	Madison James Enterprises Inc.	9 Myrtle Oak Way, Santa Rosa Beach, FL 32459	38	D & R Investments	827 Fisher Rd., Longview, T
24	Floyd Berlin Etux	1214 W Harrison Rd., Longview, TX 75604	39	Sonoco Products	One North 2nd St., Tax Dept. B04, Har
25	City of Longview	PO Box 1952 Longview, TX 75606	40	Armas Ramon & Flor Maria	603 E Berkley St., Longview,
26	Floyd Berlin Etux	1214 W Harrison Rd., Longview, TX 75604	41	City of Longview	PO Box 1952 Longview, TX
27	Terroco Industries LTD	Site 14 Box 10, RRI Red Deer, Alberta, Canada T4N 5E1	42	Phillip J Procell	1222 Marigold, Longview, TX
28	Oxbow Investments Inc.	903 Westminster Way, Southlake, TX 76092	43	Eugene J Wilkes	509 Rosedale, Longview, TX
29	Philip R. Nobles	NL 1 B Lake Cherokee, Longview, TX 75603	44	Minco Pipe Inc.	3400 W Marshal Dr. Ste 428, Long
30	Kathy Lynn Falconer	1180 W Harrison Rd., Longview, TX 75604	46	RDJ Investment Co LLC	901 W Harrison Rd, Longview

- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL



Figure 4c
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010



ADDRESS
Box 4073 Longview, TX 75606
Box 9441, Longview, TX 75608
Box 4073 Longview, TX 75606
Box 305, White Oak, TX 75693
Emmons Freeway, Dallas, TX 75207
Camlette Pl, Longview, TX 75601
Harrison Rd., Longview, TX 75604
Fisher Rd., Longview, TX 75604
St., Tax Dept. B04, Hartsville, SC 29550
Berkley St., Longview, TX 75604
Box 1952 Longview, TX 75606
Marigold, Longview, TX 75604
Rosedale, Longview, TX 75604
Shal Dr. Ste 428, Longview, TX 75601
W Harrison Rd, Longview, TX 75604

SUPER ELEVATION TABLE								
CURVE NUMBER	BEGIN TRANSITION		BEGIN FULL SUPER		BEGIN TRANSITION		END TRANSITION	
	STATION	e	STATION	e	STATION	e	STATION	e
FM2206-2	68+65.00	-2.00%	70+50.00	5.00%	78+15.00	5.00%	80+05.00	-2.00%
FM2206-3	90+30.00	-2.00%	91+40.00	2.20%	106+60.00	2.20%	109+90.00	-2.00%

HORIZONTAL CURVE DATA													
CHAIN NAME	LABEL	DESIGN SPEED	CURVE NO.	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	BACK BEARING	AHEAD BEARING	PI STA.	PC STA.	PT STA.
FM2206	FM2206-2	60 MPH	FM2206-2	20° 28' 09.85" RT	2° 30' 00.00"	413.80'	818.78'	2,291.83'	N 56° 50' 53.85" E	N 77° 19' 03.70" E	74+38.80	70+25.00	78+43.78
	FM2206-3	60 MPH	FM2206-3	14° 02' 36.10" RT	0° 45' 00.00"	940.94'	1,872.45'	7,639.44'	N 77° 19' 03.70" E	S 88° 38' 20.20" E	100+70.42	91+29.48	110+01.93

- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL



Figure 4d
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010

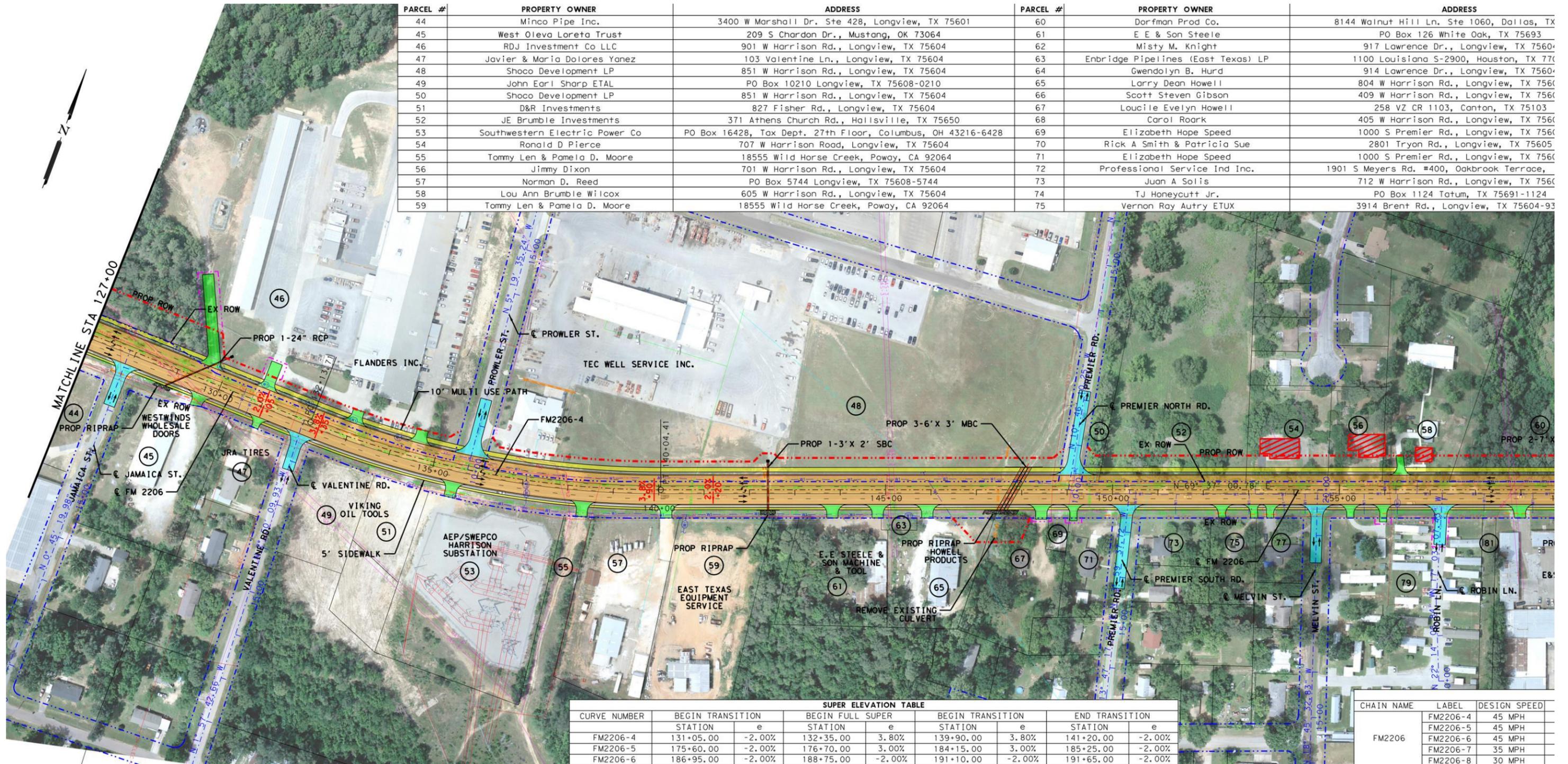
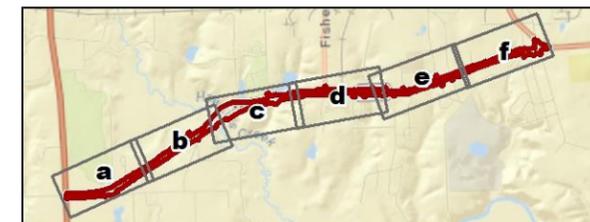
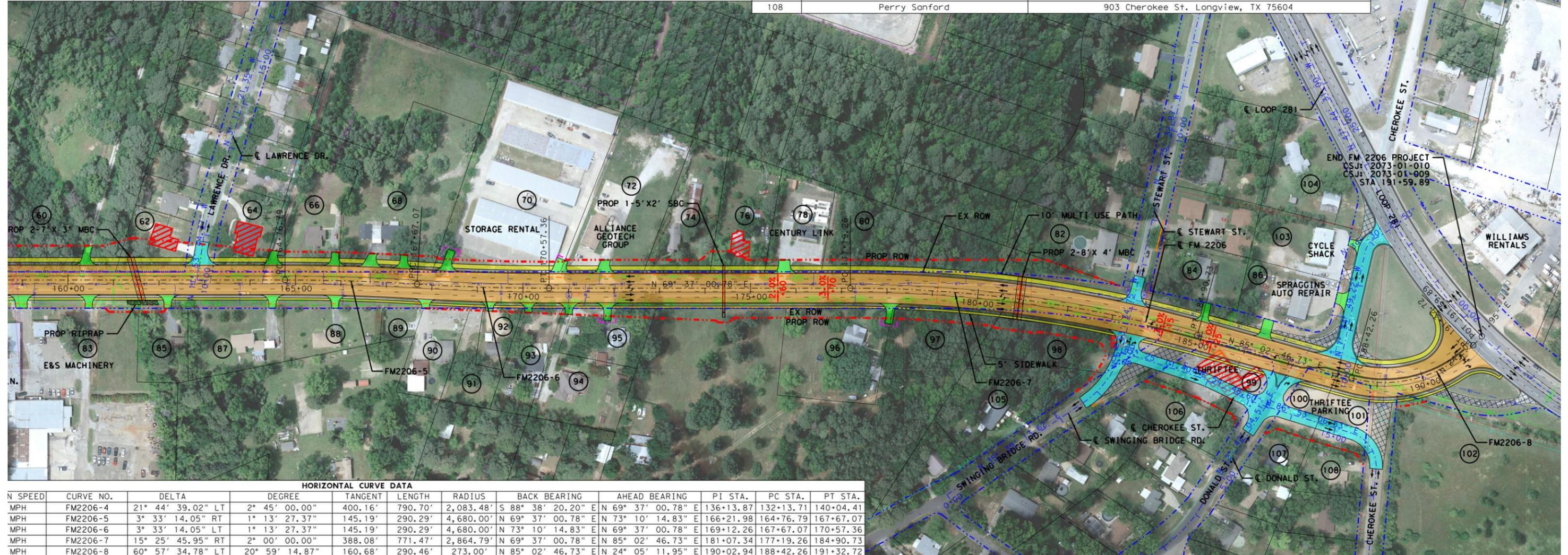


Figure 4e
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010

- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL



ADDRESS	PARCEL #	PROPERTY OWNER	ADDRESS	PARCEL #	PROPERTY OWNER	ADDRESS
allas, TX 75231	76	Jimmy Laxton	309 W Harrison Rd., Longview, TX 75604	92	Lam C Phan	1316 Nottingham Dr., White Oak, TX 75693
75693	77	Robert A Harris	702 W Harrison Rd., Longview, TX 75604	93	Hilaria & Josefina Solis	811 Valentine, Longview, TX 75604
TX 75604	78	CenturyTel Acquisition LLC	100 CenturyTel Dr., Monroe, LA 71203	94	Barbara Ramsey	318 W Harrison Rd., Longview, TX 75604
n, TX 77002	79	J W Sewell	3515 Gardenia Rd., Gilmer, TX 75645	95	Barbara Ramsey	318 W Harrison Rd., Longview, TX 75604
TX 75604	80	CenturyTel Acquisition LLC	100 CenturyTel Dr., Monroe, LA 71203	96	Curtis F. Kruse & Robbie Lynn	1101 Swinging Bridge Rd., Longview, TX 75604
v, TX 75604	81	Gulf South Pipeline Company LP	9 Greenway, Houston, TX 77046	97	Curtis F. Kruse	1101 Swinging Bridge Rd., Longview, TX 75604
v, TX 75604	82	Ricardo A. Loya	PO Box 151364 Longview, TX 75615-1364	98	Susan Marie Latham	901 Swinging Bridge Rd., Longview, TX 75604
TX 75103	83	Array Holdings Inc.	506 W Harrison Rd., Longview, TX 75604	99	Sultan Mohammad Etal	100 W Harrison Rd., Longview, TX 75604
v, TX 75604	84	Arrowhead Apartments LLC	PO Box 305 White Oak, TX 75693	100	Sultan Mohammad Etal	100 W Harrison Rd., Longview, TX 75604
v, TX 75604	85	Thomas C. Turner	PO Box 1471 Longview, TX 75606	101	Sultan Mohammad Etal	100 W Harrison Rd., Longview, TX 75604
TX 75605	86	Larry W. Binnion	1617 Hamilton Dr., Waco, TX 76705	102	Lawrence Thomas Warren	PO Box 566, Longview, TX 75606
v, TX 75604	87	Charles & Nancy Pinkston	PO Box 6482 Longview, TX 75604	103	Randy C. Sringer & Thomas E. White	PO Box 6346, Longview, TX 75606
Terrace, IL 60181	88	Judy E. Malone-Stein	602 W Gray St. Floor B, Houston, TX 77019	104	Lynne E. Erwin	805 S. Standard St., Longview, TX 75604
v, TX 75604	89	SED Development & Properties LLC	1819 S Lake Harris Rd., White Oak, TX 75693	105	Susan Marie Latham	901 Swinging Bridge Rd., Longview, TX 75604
91-1124	90	SED Development & Properties LLC	1819 S Lake Harris Rd., White Oak, TX 75693	106	Christopher Russell	903 Donald Dr. Longview, TX 75604
75604-9363	91	SED Development & Properties LLC	1819 S Lake Harris Rd., White Oak, TX 75693	107	James M. Grace	902 Donald Dr. Longview, TX 75604
				108	Perry Sanford	903 Cherokee St. Longview, TX 75604



N SPEED	CURVE NO.	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	BACK BEARING	AHEAD BEARING	PI STA.	PC STA.	PT STA.
MPH	FM2206-4	21° 44' 39.02" LT	2° 45' 00.00"	400.16'	790.70'	2,083.48'	S 88° 38' 20.20" E	N 69° 37' 00.78" E	136+13.87	132+13.71	140+04.41
MPH	FM2206-5	3° 33' 14.05" RT	1° 13' 27.37"	145.19'	290.29'	4,680.00'	N 69° 37' 00.78" E	N 73° 10' 14.83" E	166+21.98	164+76.79	167+67.07
MPH	FM2206-6	3° 33' 14.05" LT	1° 13' 27.37"	145.19'	290.29'	4,680.00'	N 73° 10' 14.83" E	N 69° 37' 00.78" E	169+12.26	167+67.07	170+57.36
MPH	FM2206-7	15° 25' 45.95" RT	2° 00' 00.00"	388.08'	771.47'	2,864.79'	N 69° 37' 00.78" E	N 85° 02' 46.73" E	181+07.34	177+19.26	184+90.73
MPH	FM2206-8	60° 57' 34.78" LT	20° 59' 14.87"	160.68'	290.46'	273.00'	N 85° 02' 46.73" E	N 24° 05' 11.95" E	190+02.94	188+42.26	191+32.72

- EXISTING ROW
- PROPOSED ROW
- PROPOSED CONSTRUCTION EASEMENT
- PARCEL NUMBER
- PARCEL BOUNDARY
- SUPERELEVATION TRANSITION POINT CROSS SLOPE AND PARTIAL STATION
- OIL & GAS UTILITY
- OVERHEAD ELECTRIC UTILITY
- WASTE WATER UTILITY
- WATER UTILITY
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- PROPOSED CULVERT
- PROPOSED JUNCTION BOX
- PROPOSED RIP RAP
- ARTERIAL
- CROSS STREET
- DRIVEWAY
- BRIDGE
- SIDEWALK
- PAVEMENT REMOVAL



Figure 4f
Project Layout
 FM 2206 from SH 42 to Loop 281
 CSJ: 2073-01-009, 2073-01-010

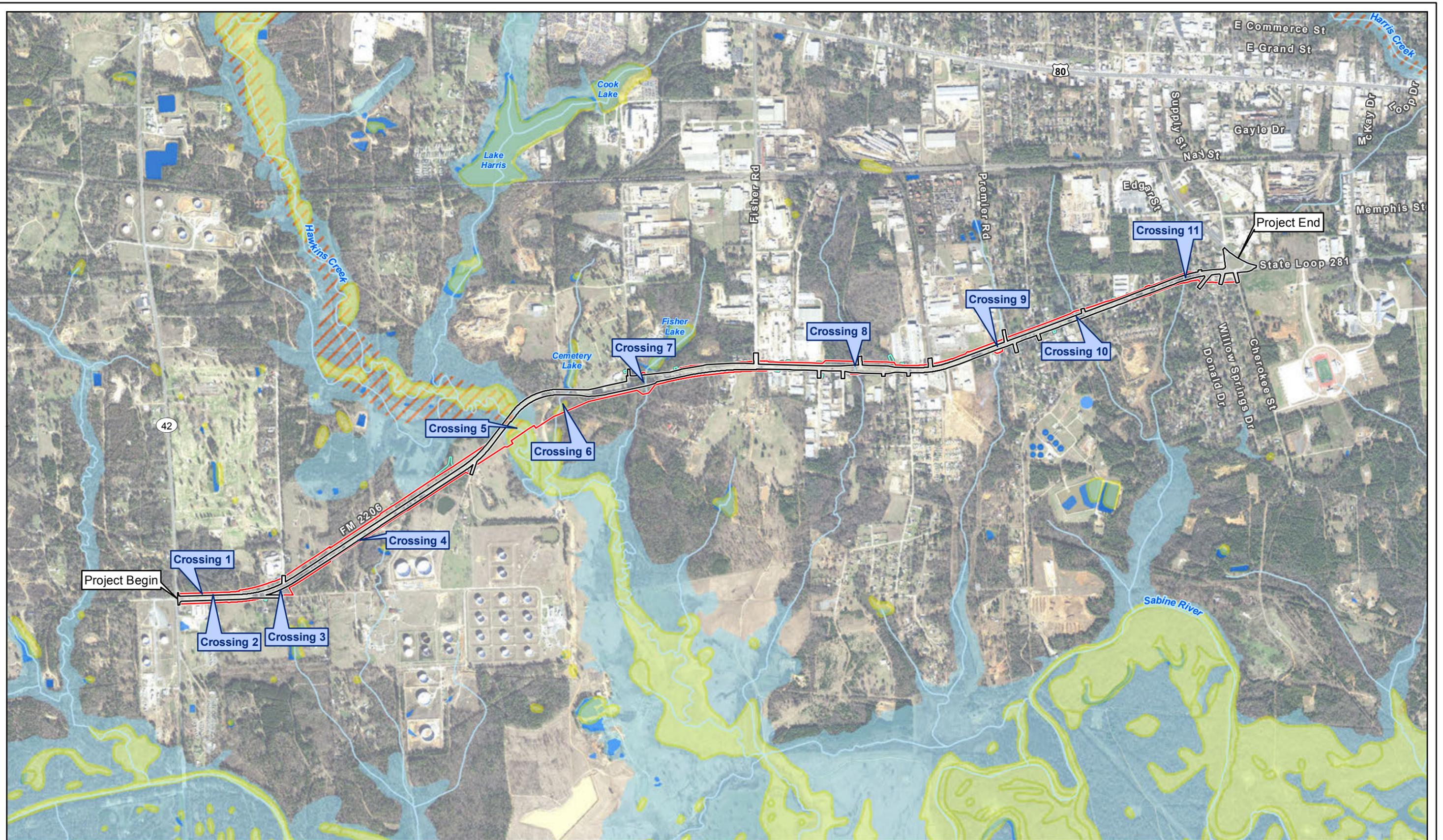


Figure 5
Water Resources
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- NHD Water
- NWI Wetland
- 100-Year Flood Zone
- Designated Floodway
- NHD Stream
- Water Crossing

Data Sources: NHD (2014), NWI (2014), FEMA NFHL (2015), CMEC (2015, 2016)
 Aerial Source: TNRIS (2015)

Prepared for: TxDOT	1 in = 1,500 feet
CSJ: 2073-01-009 and 2073-01-010	Scale: 1:18,000
Date: 3/2/2016	

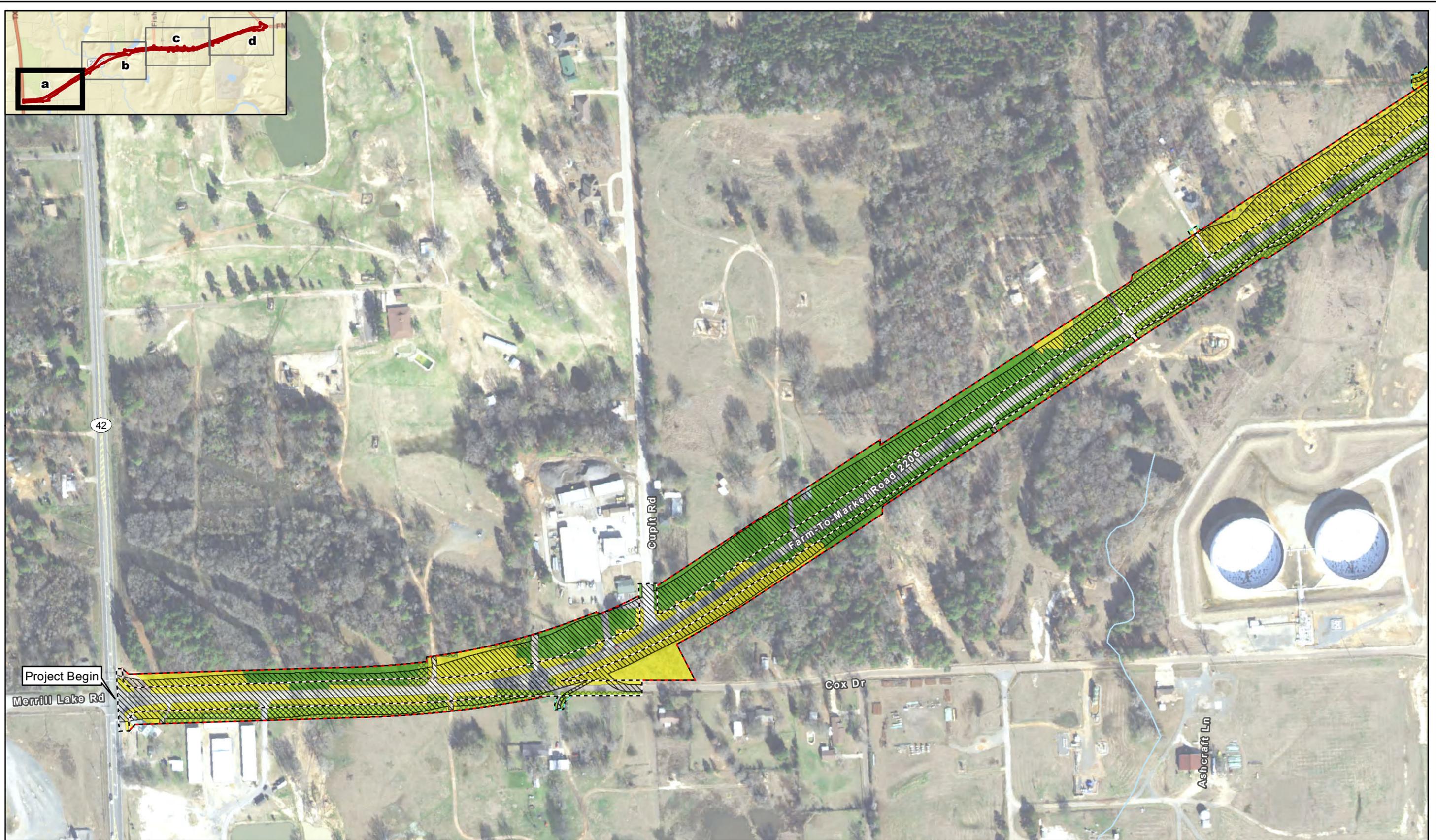


Figure 6a
EMST Mapped Vegetation Types
 FM 2206 from SH 42 to Loop 281

-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Construction
-  Pinewoods: Disturbance or Tame Grassland
-  Pinewoods: Hardwood Flatwoods
-  Pinewoods: Small Stream and Riparian Temporarily Flooded Hardwood Forest
-  Pinewoods: Upland Hardwood Forest

 Prepared for: TxDOT	 300 Feet
	 100 Meters
Data Source: TxDOT/TPWD EMST/MoRAP (2013), NHD (2014) Aerial Source: TNRIS (2015)	1 in = 300 feet Scale: 1:3,600 CSJ: 2073-01-009 and 2073-01-010 Date: 3/16/2016

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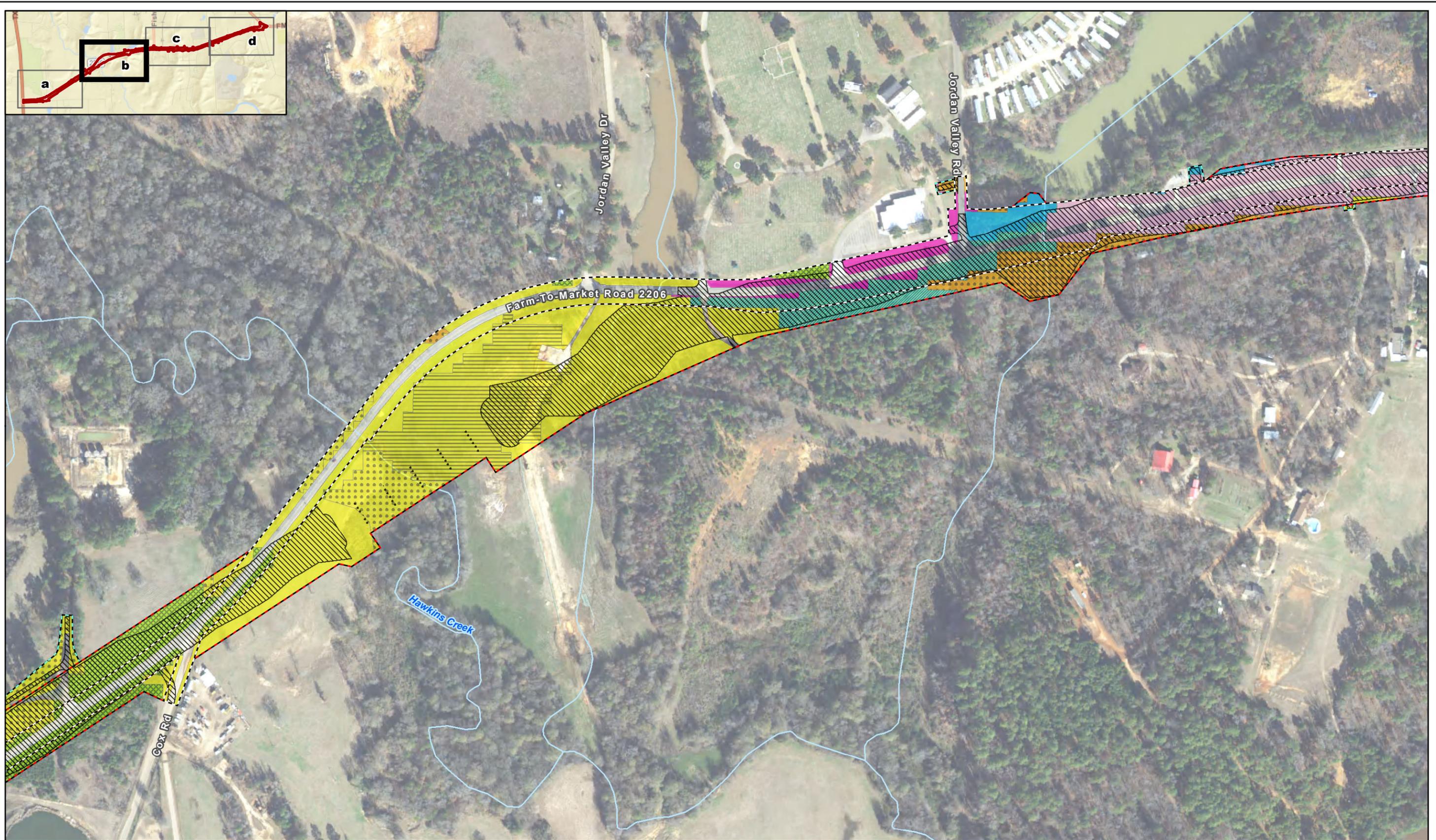


Figure 6b
EMST Mapped Vegetation Types
 FM 2206 from SH 42 to Loop 281

- | | | | |
|--------------------------------|-------------------------------------------------|--------------------------------------------------------------------------|---------------------|
| Existing Right-of-Way | Open Water | Pinewoods: Small Stream and Riparian Temporarily Flooded Hardwood Forest | Urban Low Intensity |
| Proposed Right-of-Way | Pinewoods: Disturbance or Tame Grassland | Pinewoods: Small Stream and Riparian Wet Prairie | |
| Proposed Construction Easement | Pinewoods: Northern Mesic Hardwood Forest | Pinewoods: Upland Hardwood Forest | |
| Limits of Construction | Pinewoods: Pine - Hardwood Forest or Plantation | Urban High Intensity | |

Data Source: TxDOT/TPWD EMST/MoRAP (2013), NHD (2014)
 Aerial Source: TNRS (2015)
 Prepared for: TxDOT
 Scale: 1:3,600
 CSJ: 2073-01-009 and 2073-01-010
 Date: 3/16/2016

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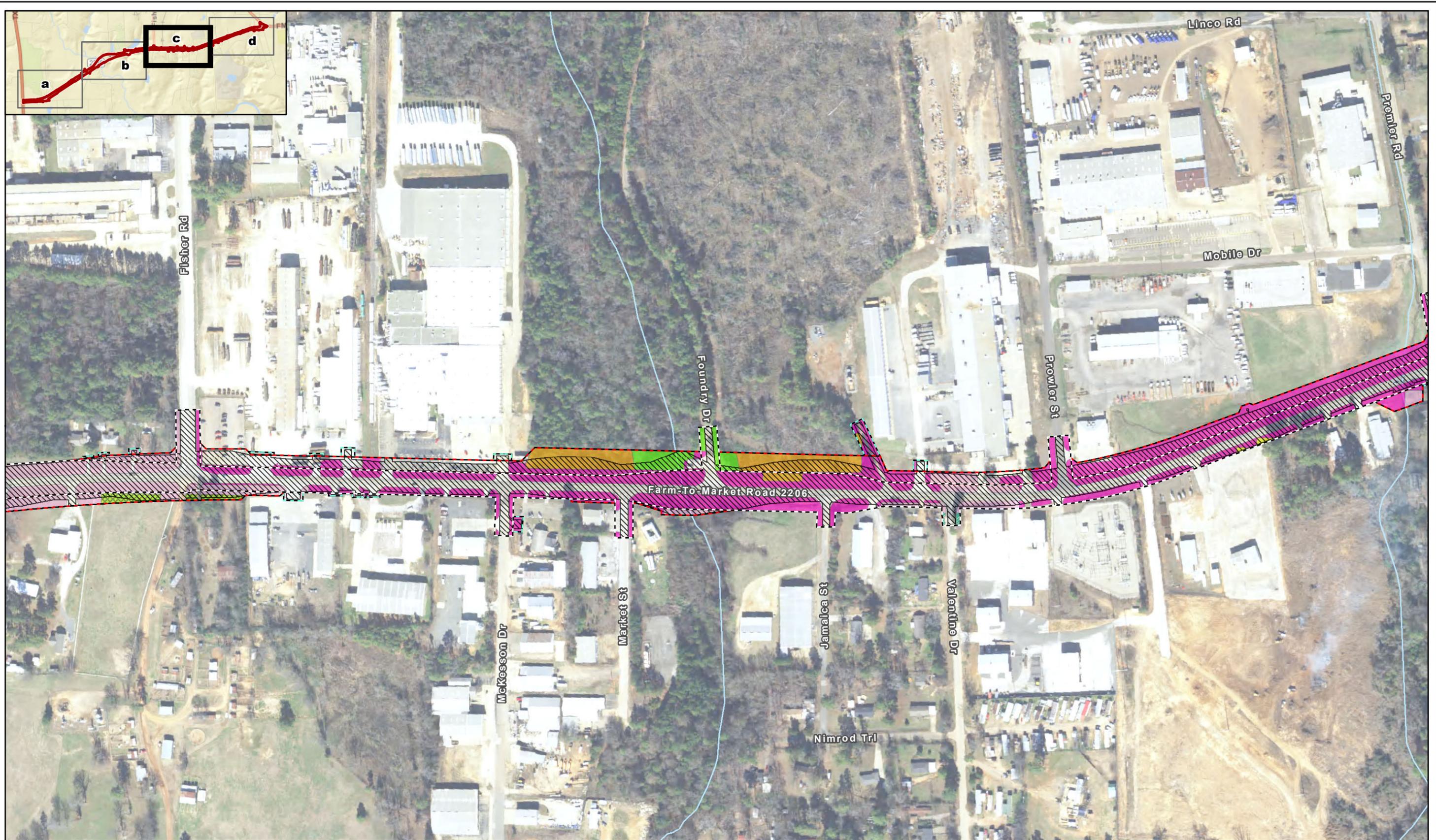


Figure 6c
EMST Mapped Vegetation Types
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- Limits of Construction
- Pine Plantation > 3 meters tall
- Pineywoods: Disturbance or Tame Grassland
- Pineywoods: Pine - Hardwood Forest or Plantation
- Pineywoods: Pine Forest or Plantation
- Pineywoods: Upland Hardwood Forest
- Urban High Intensity
- Urban Low Intensity

Data Source: TxDOT/TPWD EMST/MoRAP (2013), NHD (2014)
 Aerial Source: TNRI (2015)

		300 Feet 100 Meters
	Prepared for: TxDOT CSJ: 2073-01-009 and 2073-01-010	1 in = 300 feet Scale: 1:3,600 Date: 3/16/2016

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Figure 6d
EMST Mapped Vegetation Types
FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- Limits of Construction
- Pineywoods: Disturbance or Tame Grassland
- Pineywoods: Pine Forest or Plantation
- Pineywoods: Upland Hardwood Forest
- Urban Low Intensity
- Urban High Intensity

Prepared for: TxDOT	1 in = 300 feet
Scale: 1:3,600	Date: 3/16/2016

Data Source: TxDOT/TPWD EMST/MoRAP (2013), NHD (2014)
 Aerial Source: TNRS (2015)
 CSJ: 2073-01-009 and 2073-01-010

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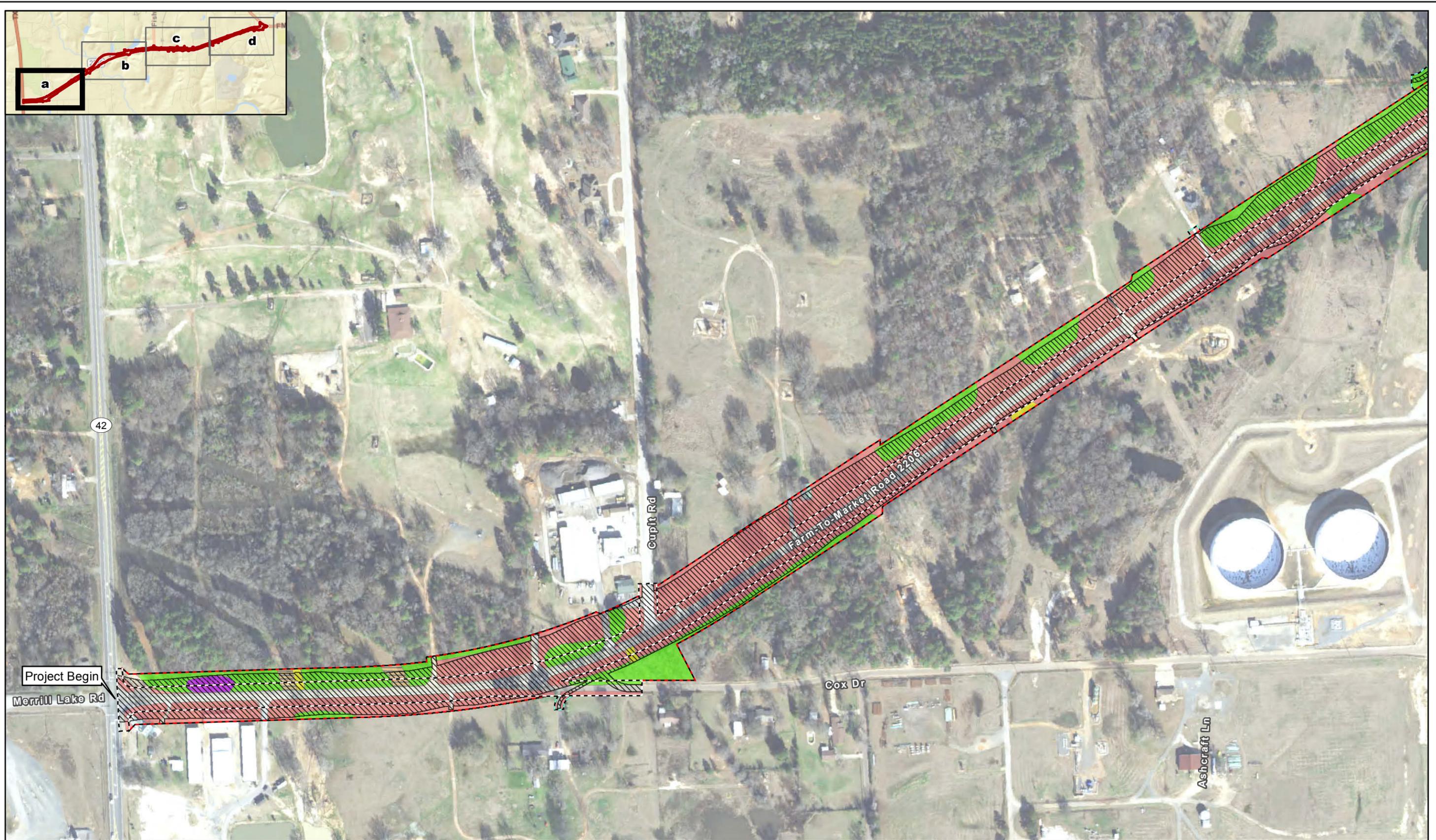


Figure 7a
Observed Vegetation Types
 FM 2206 from SH 42 to Loop 281

- | | | |
|--------------------------------|---------------------------|--------------------------------|
| Existing Right-of-Way | Limits of Construction | Mixed Pines and Hardwoods |
| Proposed Right-of-Way | Emergent Wetland | Previously Cleared Shrub-Scrub |
| Proposed Construction Easement | Maintained Herbaceous ROW | Sedge Meadow |

	0	300 Feet
	0	100 Meters
Prepared for: TxDOT	Scale: 1:3,600	1 in = 300 feet
CSJ: 2073-01-009 and 2073-01-010	Date: 4/28/2016	

Data Source: CMEC (2015, 2016)
 Aerial Source: TNRS (2015)

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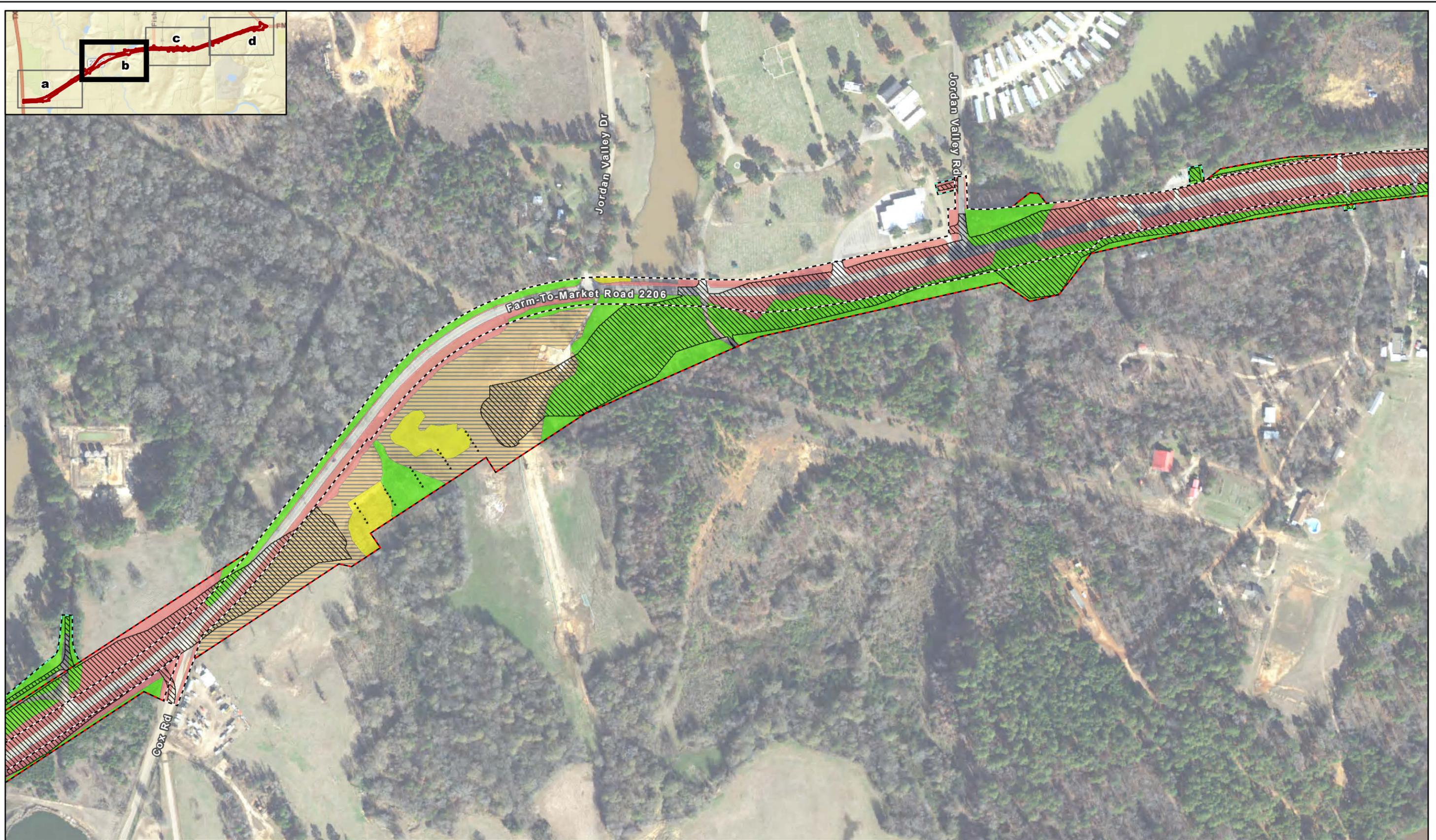


Figure 7b
Observed Vegetation Types
 FM 2206 from SH 42 to Loop 281

-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Construction
-  Emergent Wetland
-  Maintained Herbaceous ROW
-  Mixed Pines and Hardwoods
-  Previously Cleared Shrub-Scrub

	
	
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015, 2016) Aerial Source: TNRS (2015)	Scale: 1:3,600
CSJ: 2073-01-009 and 2073-01-010	Date: 4/28/2016

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Figure 7c
Observed Vegetation Types
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- Limits of Construction
- Maintained Herbaceous ROW
- Mixed Pines and Hardwoods

	0 300 Feet
	0 100 Meters
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015, 2016) Aerial Source: TNRIS (2015)	Scale: 1:3,600
CSJ: 2073-01-009 and 2073-01-010	Date: 4/28/2016

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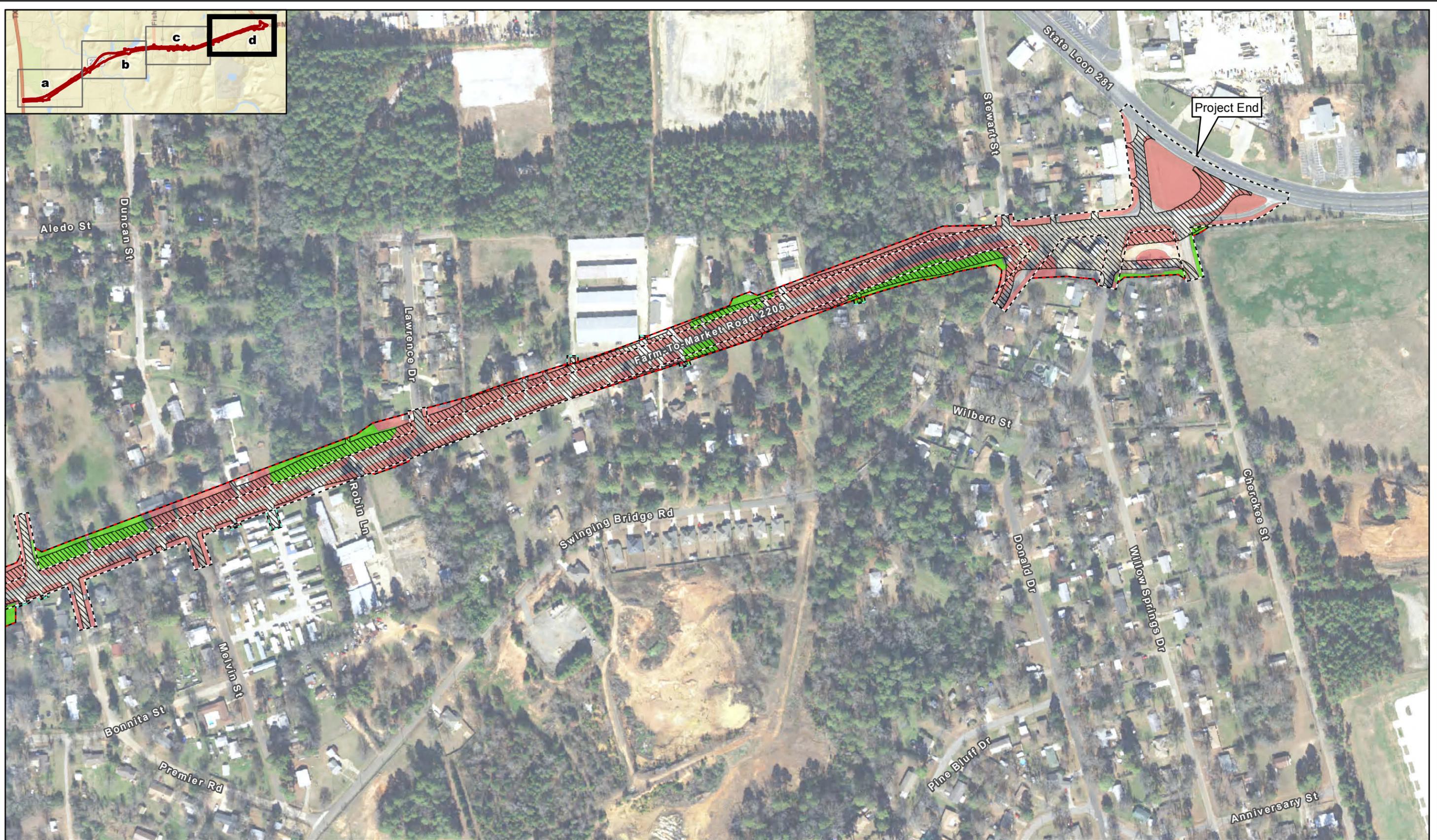


Figure 7d
Observed Vegetation Types
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- Limits of Construction
- Maintained Herbaceous ROW
- Mixed Pines and Hardwoods

	0 300 Feet
	0 100 Meters
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015, 2016) Aerial Source: TNRS (2015)	Scale: 1:3,600
CSJ: 2073-01-009 and 2073-01-010	Date: 4/28/2016

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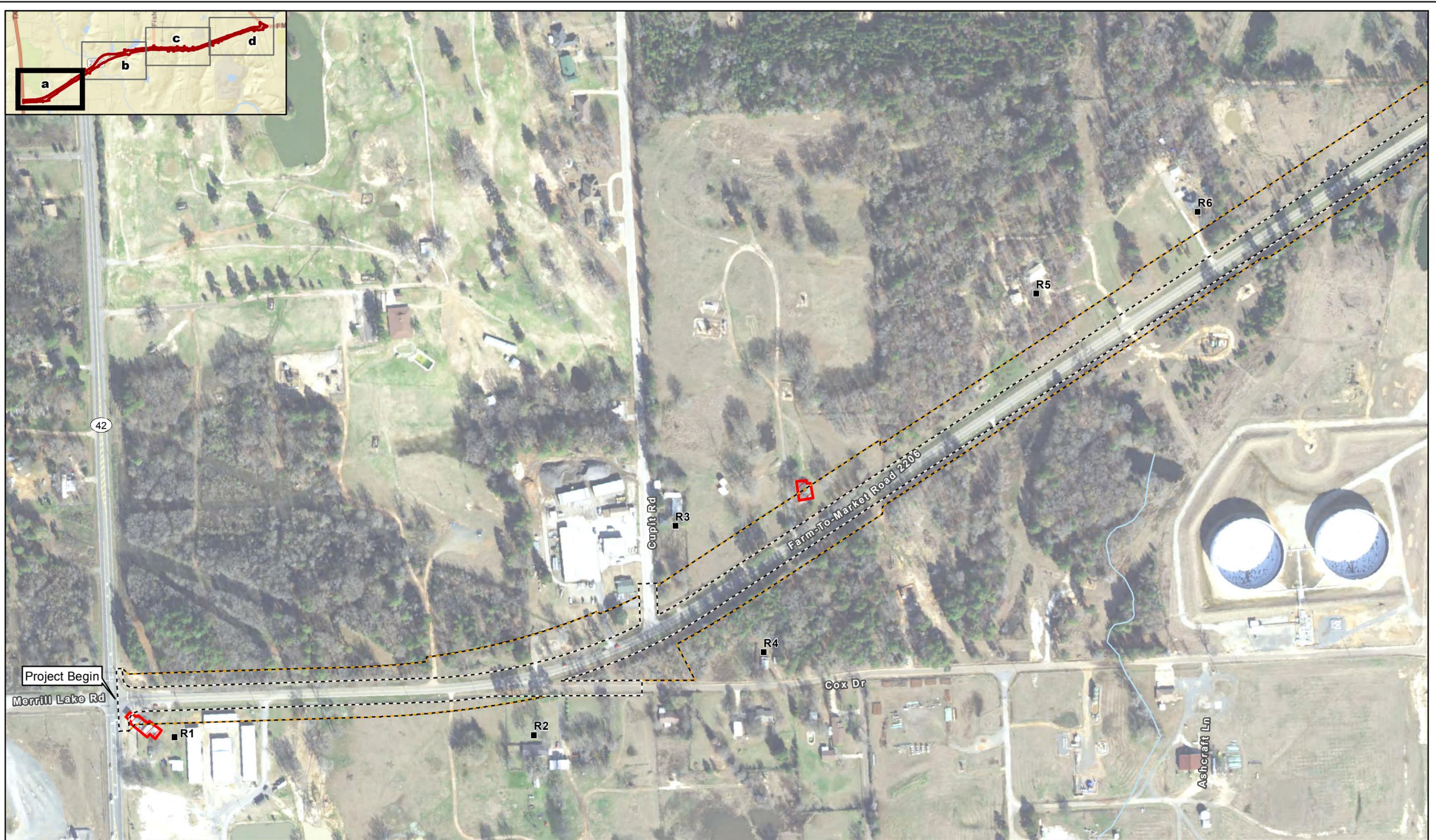


Figure 8a
Location of Noise Receivers
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Non-impacted Receiver
- Displaced Structure

	0 300 Feet
	0 100 Meters
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015) Aerial Source: TNRS (2015)	Scale: 1:3,600
CSJ: 2073-01-009 and 2073-01-010	Date: 4/29/2016

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Figure 8b
Location of Noise Receivers
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Non-impacted Receiver

	0 300 Feet
	0 100 Meters
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015)	Scale: 1:3,600
Aerial Source: TNRS (2015)	Date: 4/29/2016
CSJ: 2073-01-009 and 2073-01-010	



Figure 8c
Location of Noise Receivers
 FM 2206 from SH 42 to Loop 281

Existing Right-of-Way
 Non-impacted Receiver
 Proposed Right-of-Way

 Prepared for: 1xDOT	 300 Feet
	 100 Meters
Scale: 1:3,600	Date: 4/29/2016

Data Source: CMEC (2015)
 Aerial Source: TNRS (2015)

G:\Projects\TXDOT\FM2206\EA Figure8 Noise_20160429.mxd

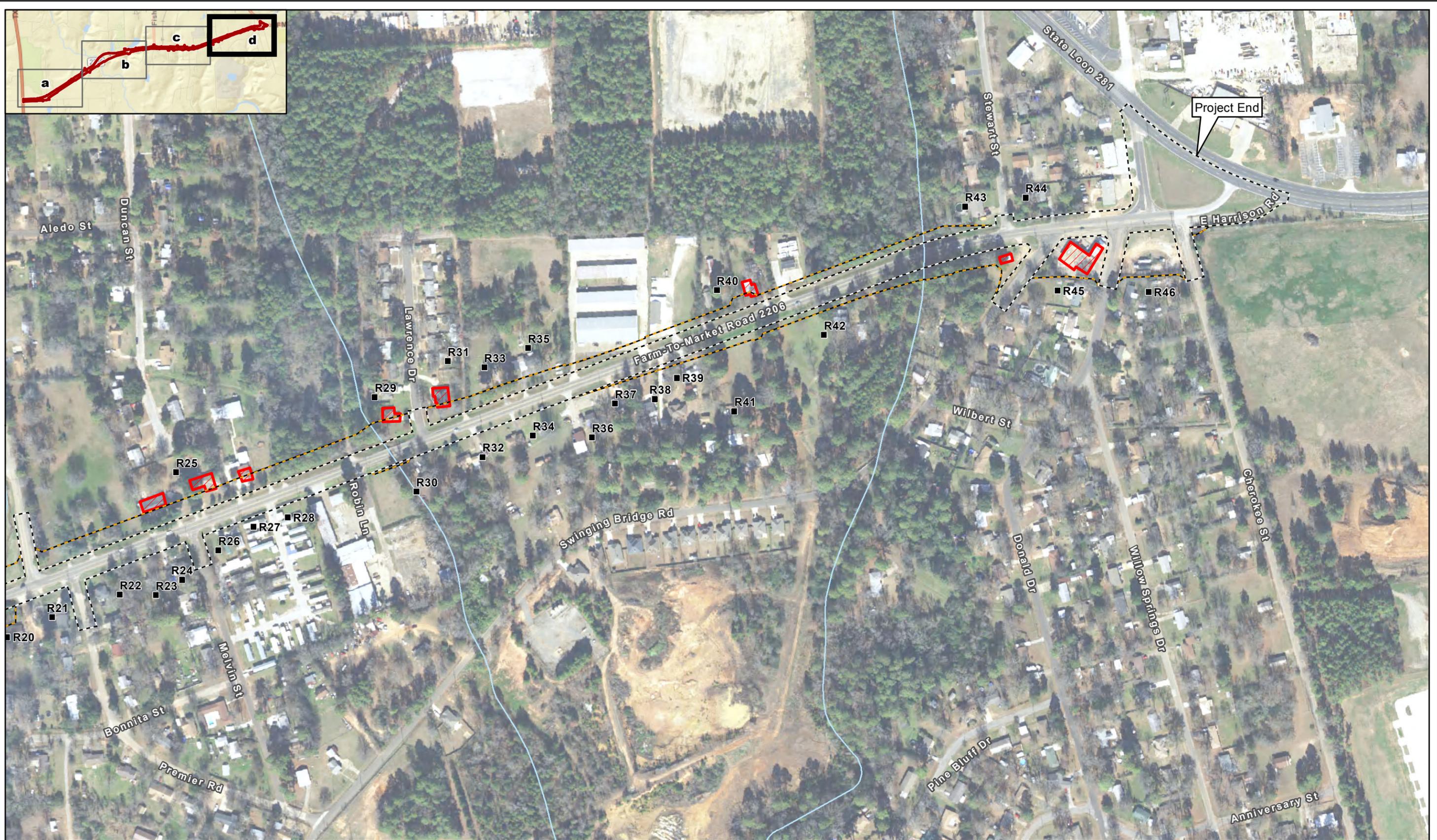


Figure 8d
Location of Noise Receivers
 FM 2206 from SH 42 to Loop 281

- Existing Right-of-Way
- Proposed Right-of-Way
- Non-impacted Receiver
- Displaced Structure

	0 300 Feet
	0 100 Meters
Prepared for: TxDOT	1 in = 300 feet
Data Source: CMEC (2015)	Scale: 1:3,600
Aerial Source: TNRS (2015)	Date: 4/29/2016
CSJ: 2073-01-009 and 2073-01-010	Date: 4/29/2016

G:\Projects\TXDOT\FM2206\EA Figure8 Noise_20160429.mxd

-  Existing Right-of-Way
 -  Proposed Right-of-Way
 -  Proposed Construction Easement
 -  Sheet Limits
 -  Agricultural / Undeveloped
 -  Commercial
 -  Government
 -  Oil/Gas
 -  Residential
 -  Residential and Commercial
 -  Residential and Agricultural
- Potential Displacements**
-  Commercial
 -  Residential

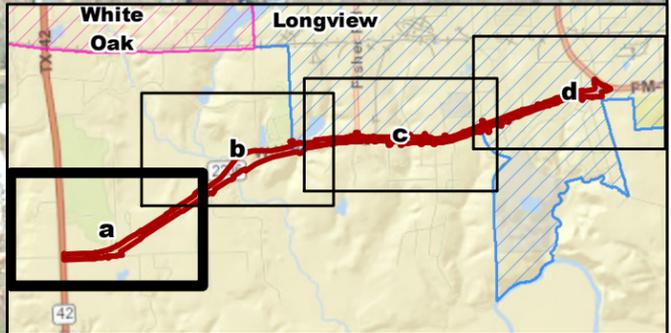
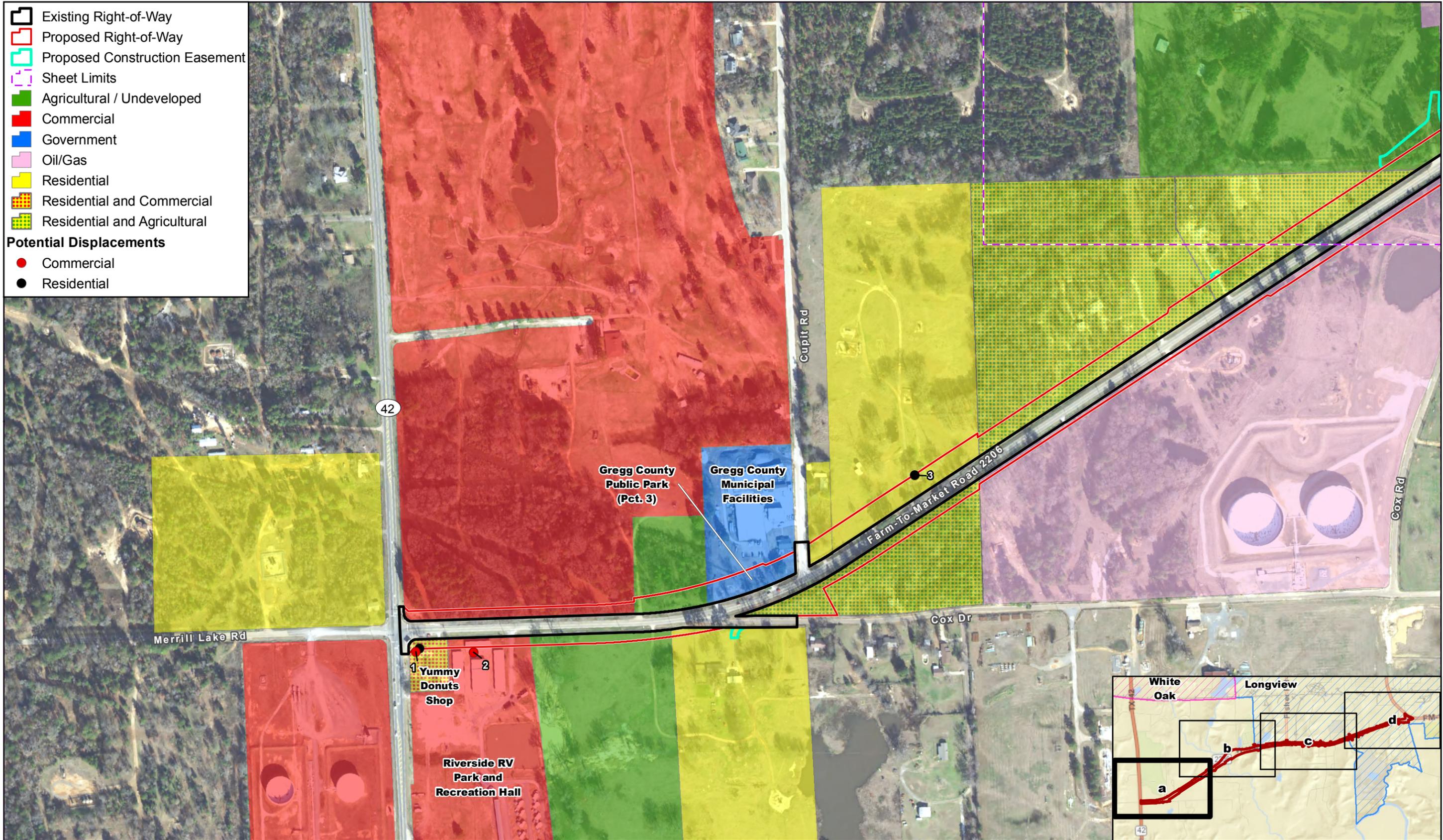


Figure 9a
Land Use and Potential Displacements
 FM 2206 from SH 42 to Loop 281

G:\Projects\TXDOT\FM2206\Socioec Figure 9_LandUse_Displacements_20160427.mxd

	 0 400 Feet
	 0 125 Meters
Prepared for: TxDOT	1 in = 400 feet
Data Source: CMEC (2016), GCAD (2015)	Scale: 1:4,800
Aerial Source: TNRIS (2015)	Date: 4/29/2016

CSJ: 2073-01-009 and 2073-01-010

-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Sheet Limits
-  Agricultural / Undeveloped
-  Cemetery
-  Mobile Homes
-  Oil/Gas
-  Residential
-  Residential and Agricultural

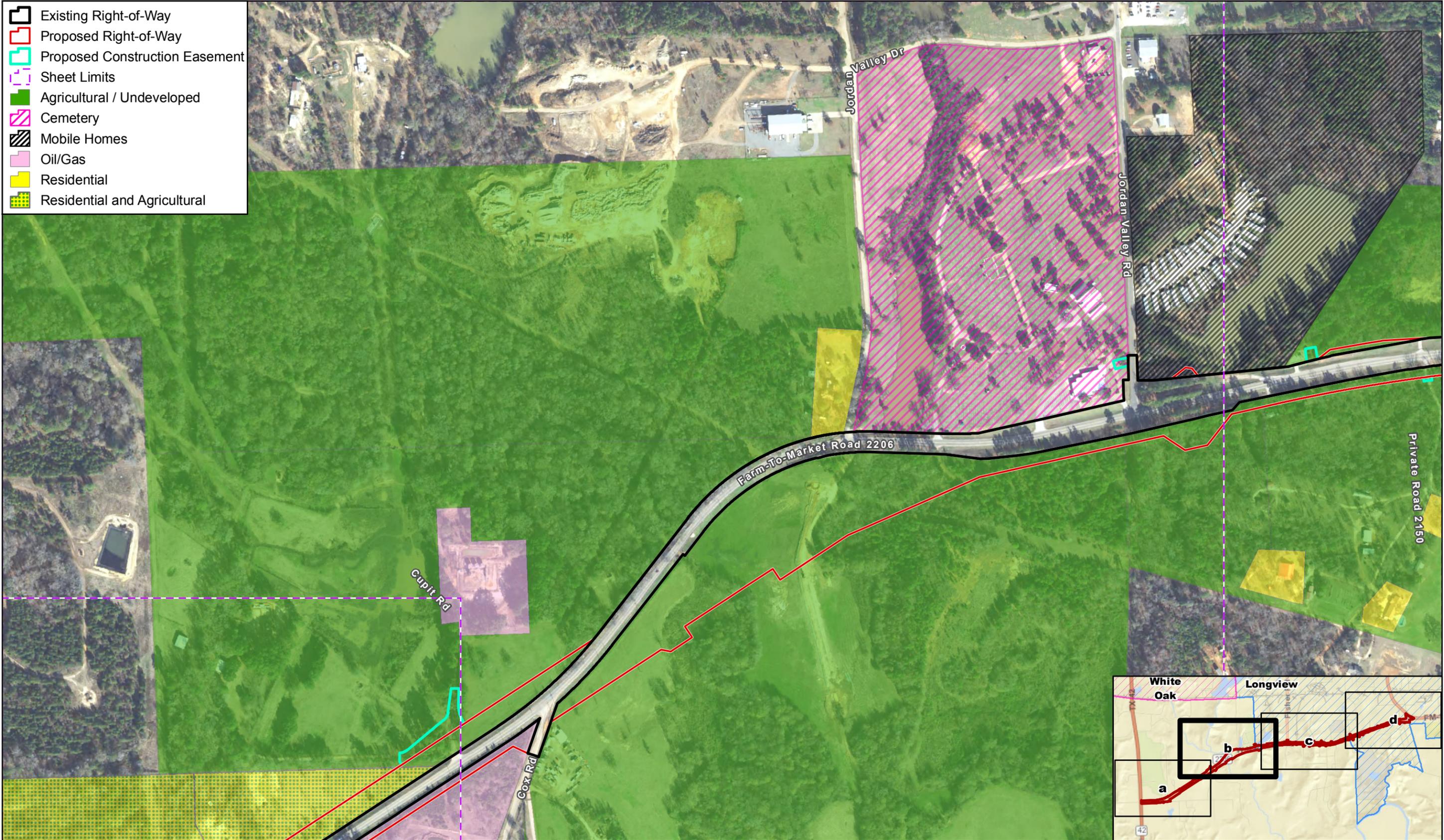


Figure 9b
Land Use and Potential Displacements
 FM 2206 from SH 42 to Loop 281

G:\Projects\TXDOT\FM2206\Socioec Figure 9_LandUse_Displacements_20160427.mxd

	 400 Feet
	 125 Meters
Prepared for: TxDOT	1 in = 400 feet
Data Source: CMEC (2016), GCAD (2015)	Scale: 1:4,800
Aerial Source: TNRIS (2015)	Date: 4/29/2016

CSJ: 2073-01-009 and 2073-01-010

-  Existing Right-of-Way
 -  Proposed Right-of-Way
 -  Proposed Construction Easement
 -  Sheet Limits
 -  Agricultural / Undeveloped
 -  Church
 -  Commercial
 -  Government
 -  Industrial
 -  Mobile Homes
 -  Residential
 -  Residential and Commercial
 -  Utilities
- Potential Displacements**
-  Residential
 -  Utility

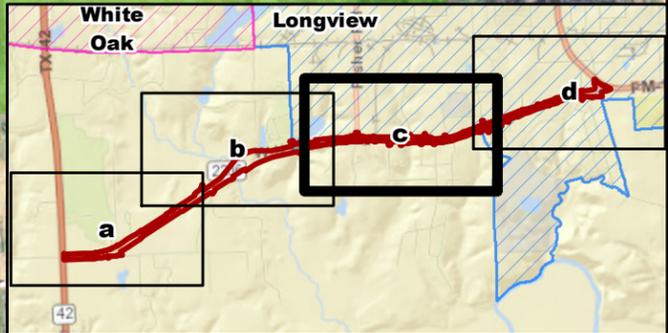
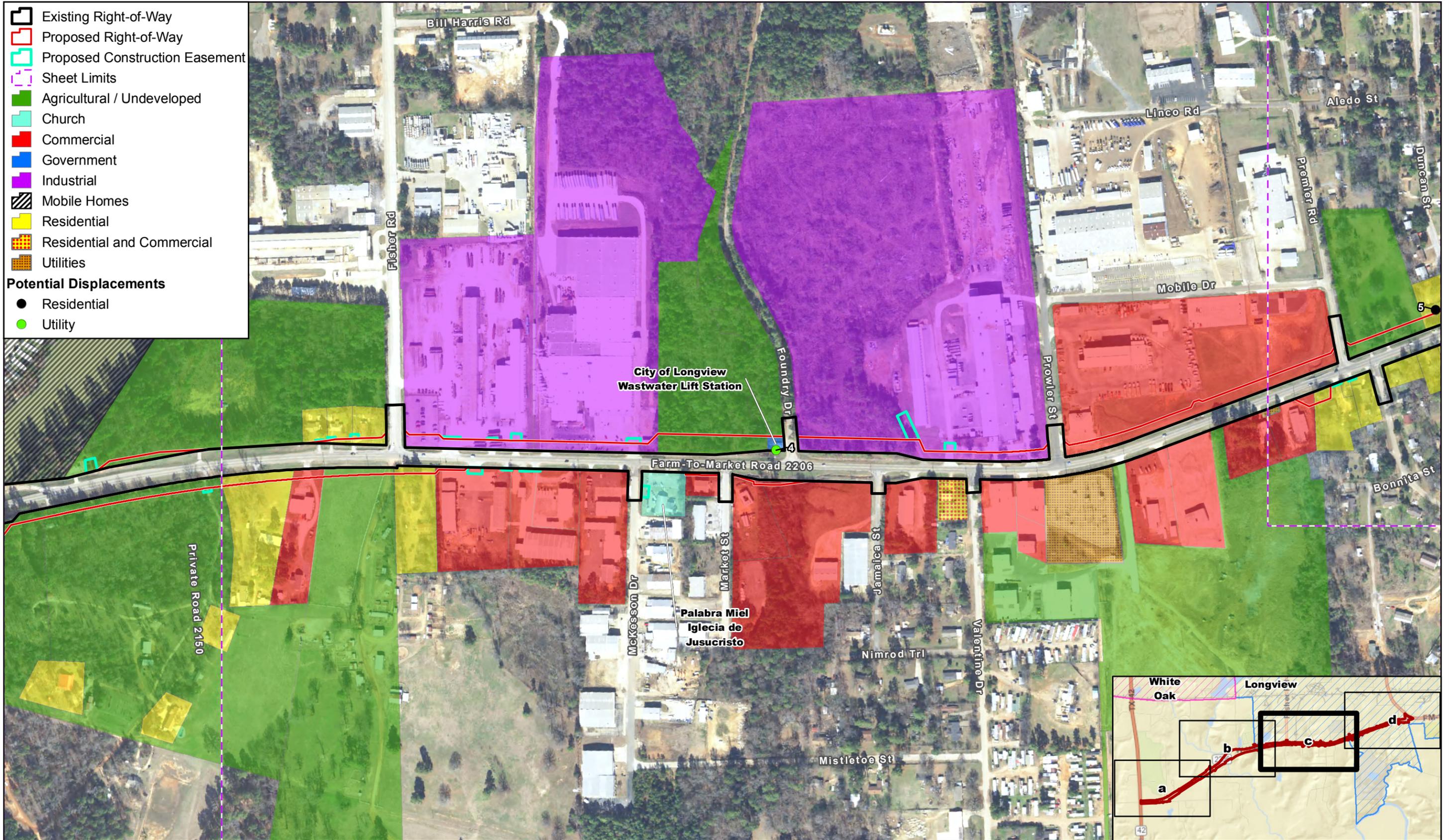


Figure 9c
Land Use and Potential Displacements
 FM 2206 from SH 42 to Loop 281

	0 400 Feet
	0 125 Meters
1 in = 400 feet	Scale: 1:4,800
Prepared for: TxDOT	Date: 4/29/2016

Data Source: CMEC (2016), GCAD (2015)
 Aerial Source: TNRIS (2015)
 CSJ: 2073-01-009 and 2073-01-010

G:\Projects\TXDOT\FM2206\Socioec Figure 9 LandUse Displacements 20160427.mxd

-  Existing Right-of-Way
 -  Proposed Right-of-Way
 -  Proposed Construction Easement
 -  Sheet Limits
 -  Agricultural / Undeveloped
 -  Church
 -  Commercial
 -  Industrial
 -  Mobile Homes
 -  Residential
 -  Utilities
- Potential Displacements**
-  Commercial
 -  Residential
 -  Shed

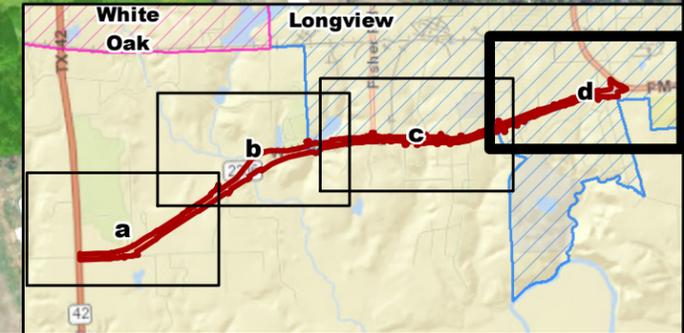
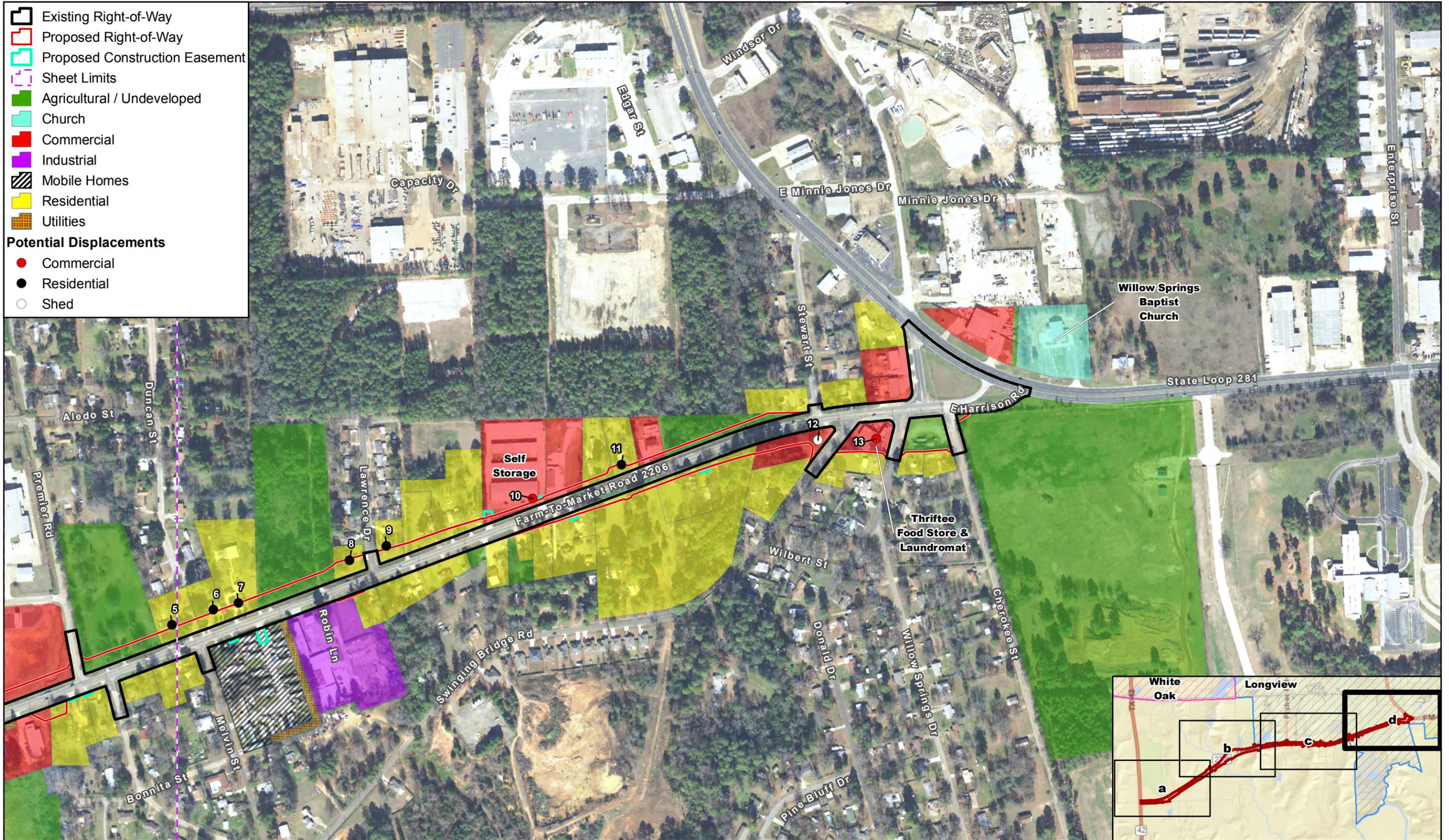


Figure 9d
Land Use and Potential Displacements
 FM 2206 from SH 42 to Loop 281

	0 400 Feet
	0 125 Meters
Prepared for: TxDOT	1 in = 400 feet
Data Source: CMEC (2016), GCAD (2015)	Scale: 1:4,800
Aerial Source: TNRS (2015)	Date: 4/29/2016

G:\Projects\TXDOT\FM2206\Socioec Figure 9 LandUse Displacements 20160427.mxd

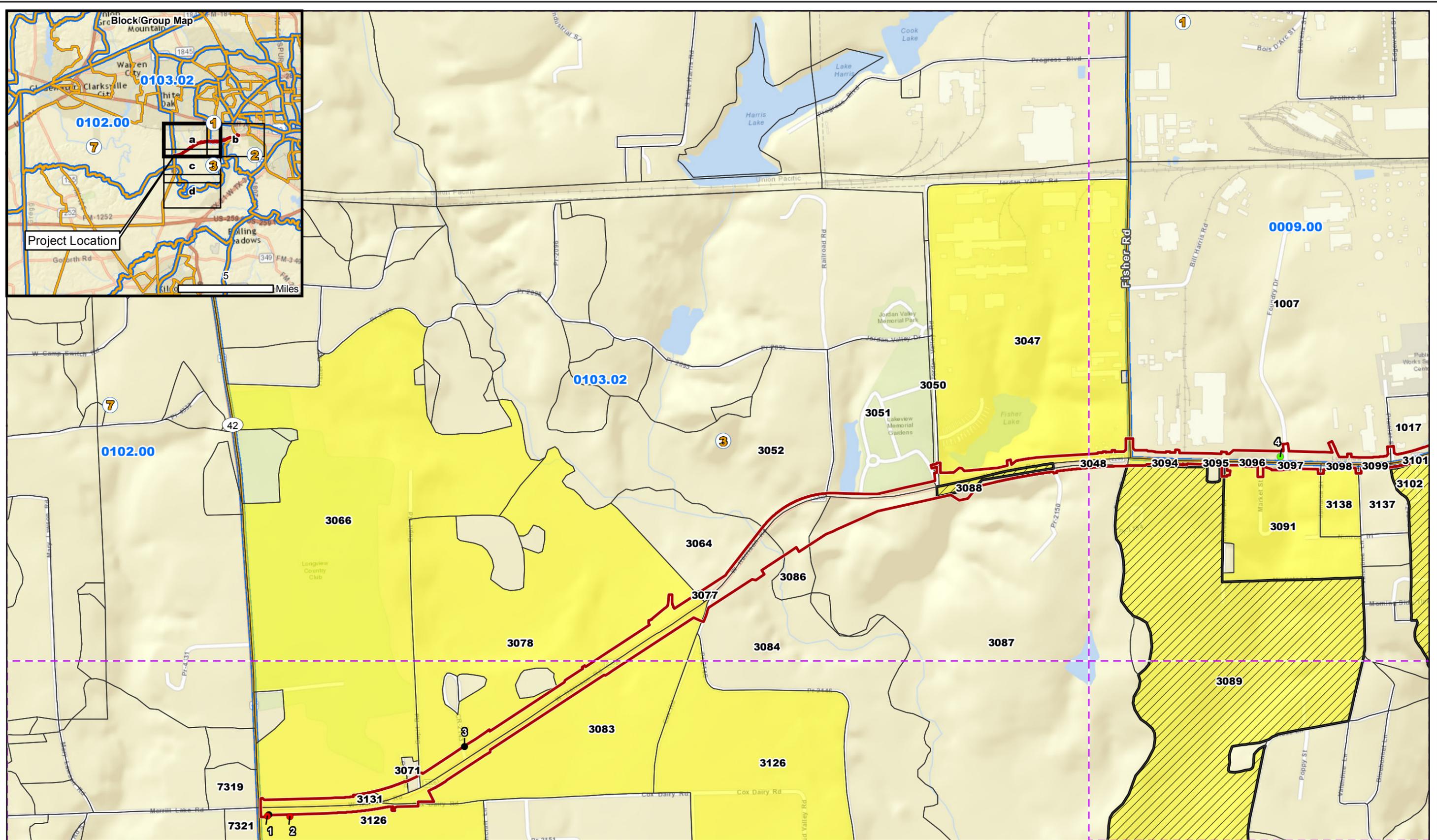


Figure 10a
Census Geographies and Potential Displacements
 FM 2206 from SH 42 to Loop 281

- | | | | |
|-------------------------|--------------------------------------|--------------------------------|---------|
| Project Location | 2010 Census Block | Potential Displacements | Shed |
| 2010 Census Tract | Populated Adjacent 2010 Census Block | Commercial | Utility |
| 2010 Census Block Group | >50% Minority Population | Residential | |

Data Source: US Census Bureau (2010)
 Basemap Source: ESRI (2016)

	0	1,000 Feet
	0	300 Meters
Prepared for: TxDOT	1 in = 1,000 feet	
CSJ: 2073-01-009 and 2073-01-010	Scale: 1:12,000	
	Date: 4/29/2016	

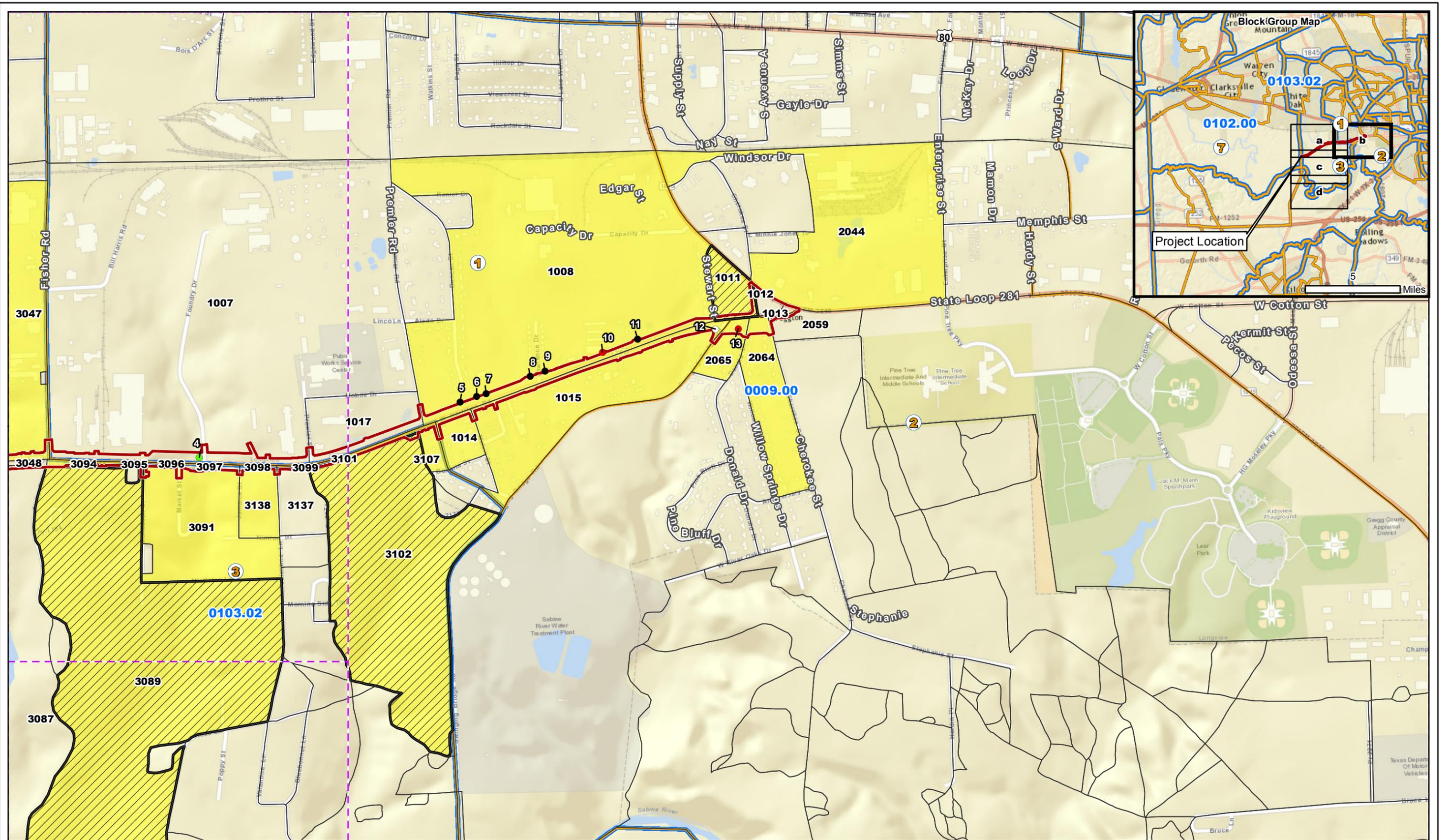


Figure 10b
Census Geographies and Potential Displacements
 FM 2206 from SH 42 to Loop 281

- | | | | |
|-------------------------|--------------------------------------|--------------------------------|---------|
| Project Location | 2010 Census Block | Potential Displacements | Shed |
| 2010 Census Tract | Populated Adjacent 2010 Census Block | Commercial | Utility |
| 2010 Census Block Group | >50% Minority Population | Residential | |

Data Source: US Census Bureau (2010)
 Basemap Source: ESRI (2016)
 Prepared for: TxDOT
 Scale: 1:12,000
 CSJ: 2073-01-009 and 2073-01-010
 Date: 4/29/2016

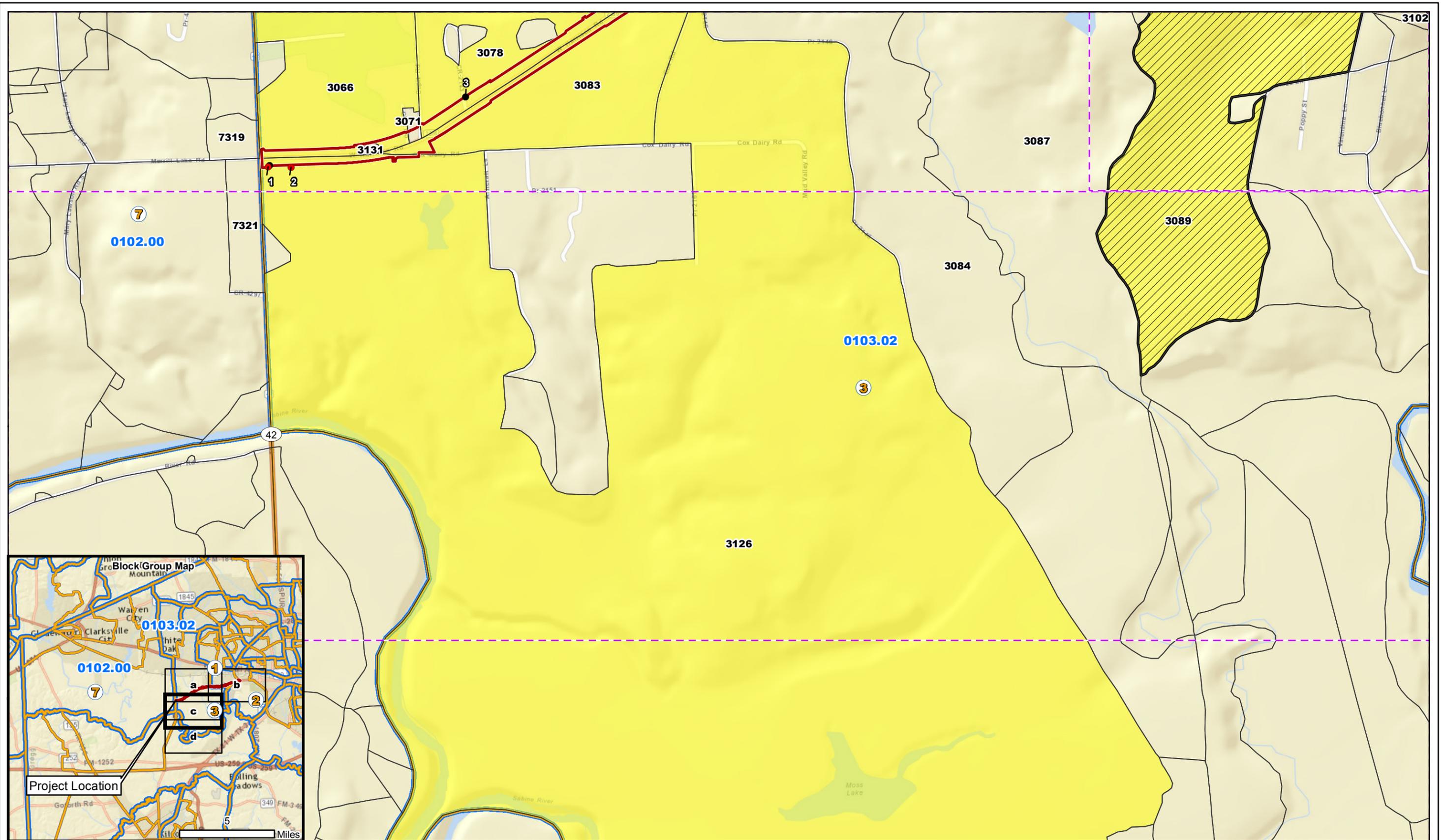


Figure 10c
Census Geographies and Potential Displacements
 FM 2206 from SH 42 to Loop 281

- | | | | |
|-------------------------|--------------------------------------|--------------------------------|---------|
| Project Location | 2010 Census Block | Potential Displacements | Shed |
| 2010 Census Tract | Populated Adjacent 2010 Census Block | Commercial | Utility |
| 2010 Census Block Group | >50% Minority Population | Residential | |

Data Source: US Census Bureau (2010)
 Basemap Source: ESRI (2016)
 Prepared for: TxDOT
 CSJ: 2073-01-009 and 2073-01-010
 Scale: 1:12,000
 Date: 4/29/2016

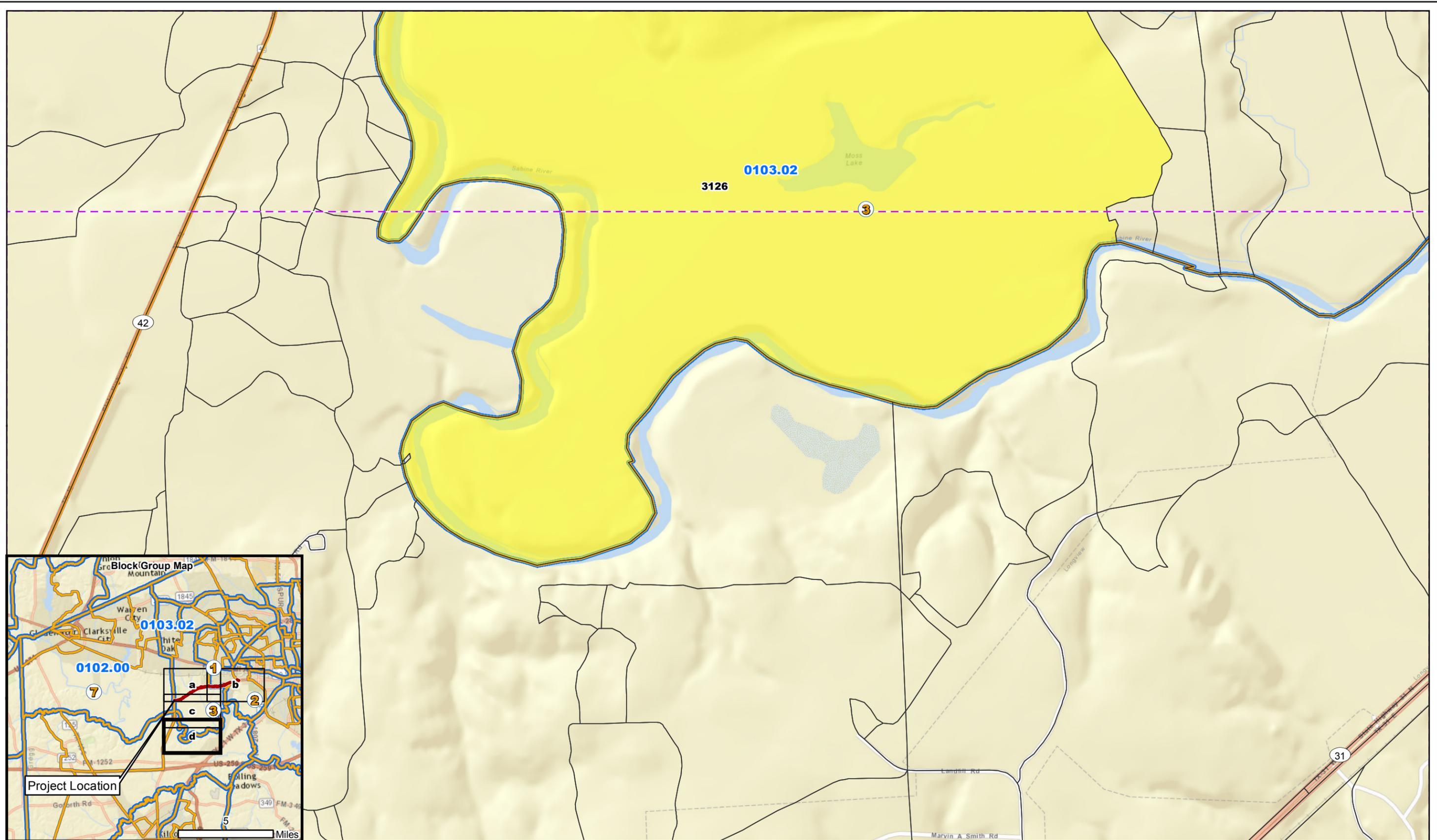


Figure 10d
Census Geographies and Potential Displacements
 FM 2206 from SH 42 to Loop 281

- | | | | |
|-------------------------|--------------------------------------|--------------------------------|---------|
| Project Location | 2010 Census Block | Potential Displacements | Shed |
| 2010 Census Tract | Populated Adjacent 2010 Census Block | Commercial | Utility |
| 2010 Census Block Group | >50% Minority Population | Residential | |

Prepared for: TxDOT	1 in = 1,000 feet
CSJ: 2073-01-009 and 2073-01-010	Scale: 1:12,000
	Date: 4/29/2016

Data Source: US Census Bureau (2010)
 Basemap Source: ESRI (2016)

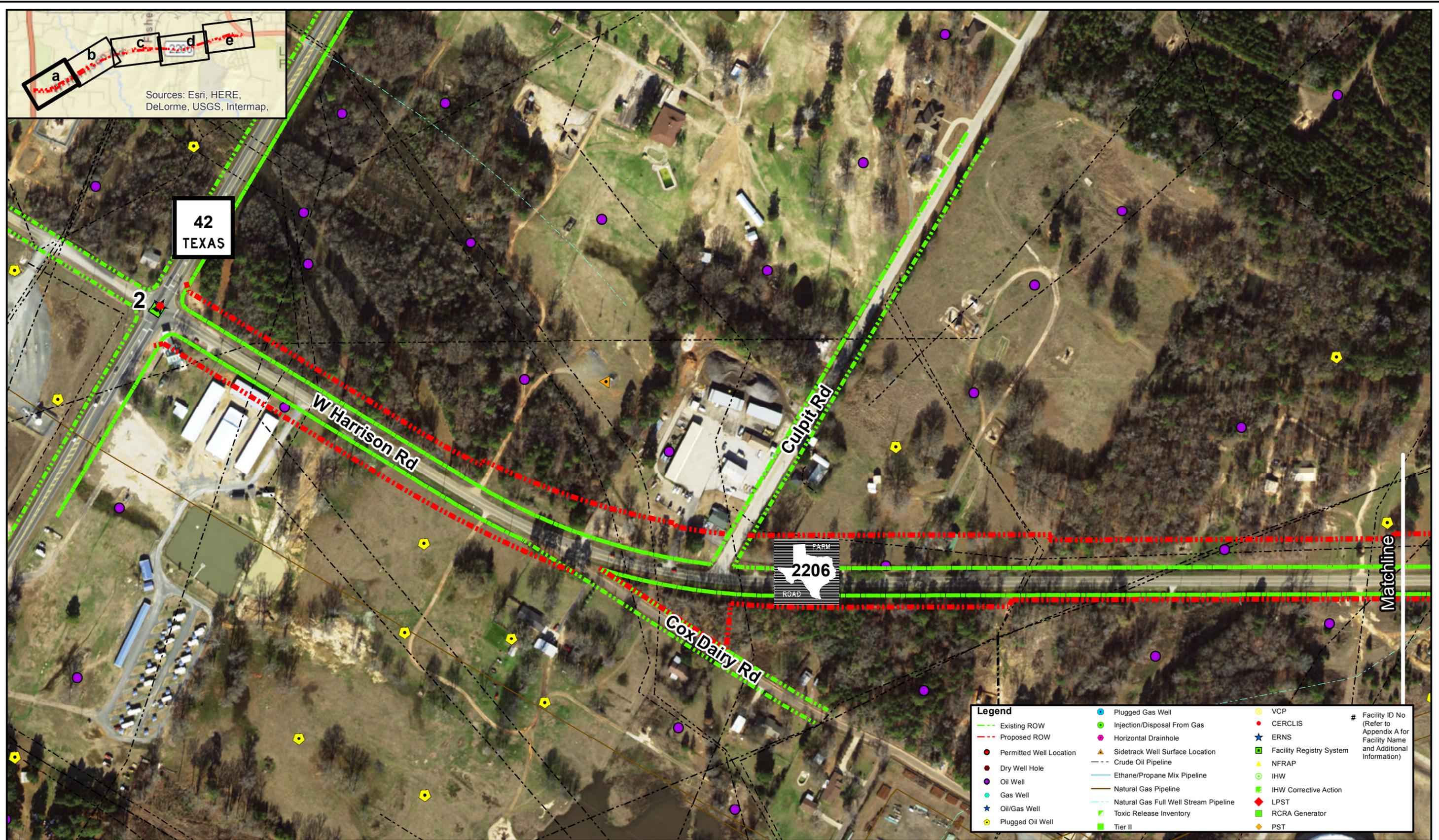
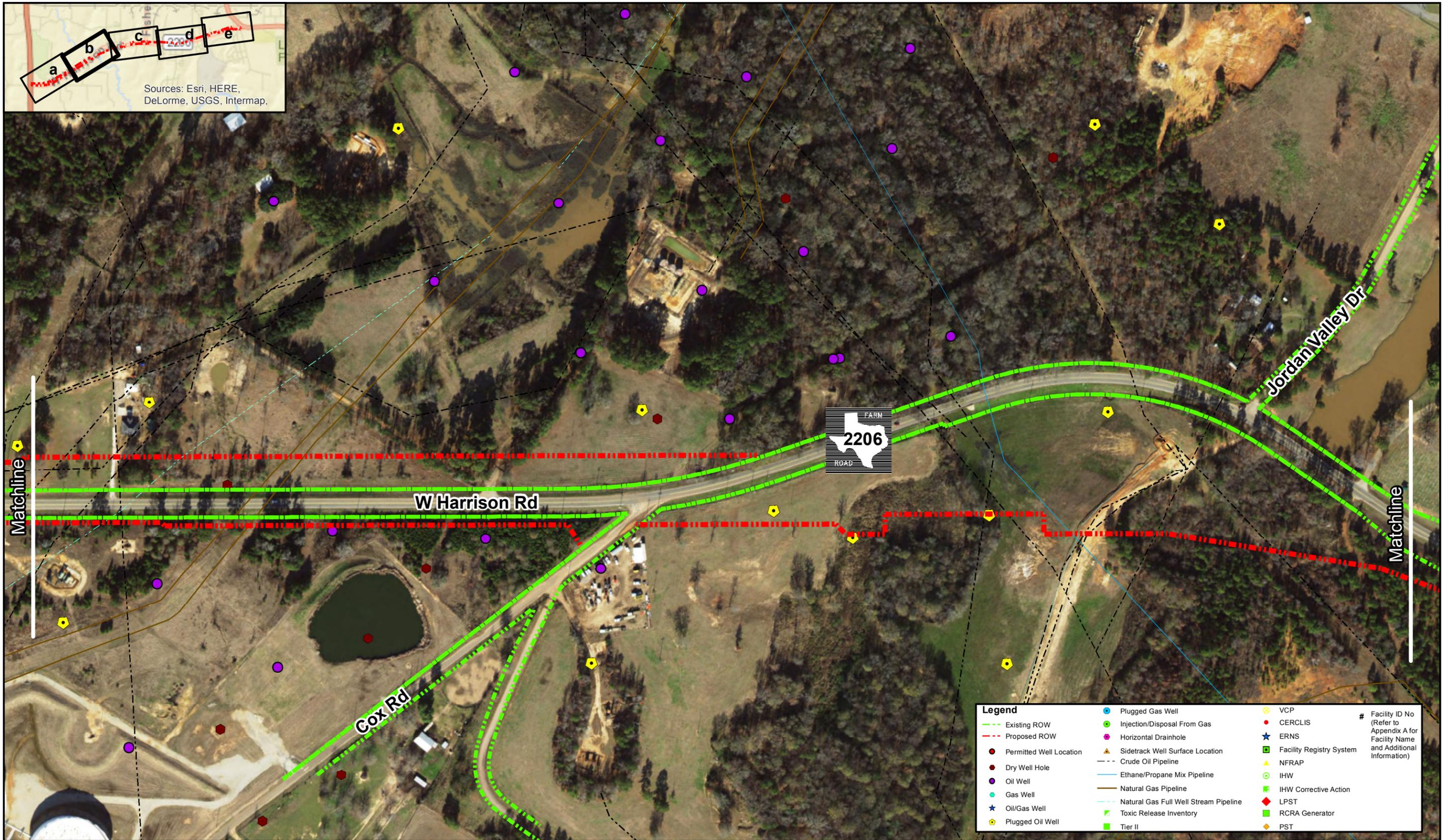


Figure 11a
Hazardous Materials Location Map
 FM 2206 from SH 42 to Loop 281

Data Source: GeoSearch
 Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (2014)

Legend			
	Existing ROW		VCP
	Proposed ROW		CERCLIS
	Permitted Well Location		ERNS
	Dry Well Hole		Facility Registry System
	Oil Well		NFRAP
	Gas Well		IHW
	Oil/Gas Well		IHW Corrective Action
	Plugged Oil Well		LPST
	Plugged Gas Well		RCRA Generator
	Injection/Disposal From Gas		PST
	Horizontal Drainhole		Facility ID No (Refer to Appendix A for Facility Name and Additional Information)
	Sidetrack Well Surface Location		
	Crude Oil Pipeline		
	Ethane/Propane Mix Pipeline		
	Natural Gas Pipeline		
	Natural Gas Full Well Stream Pipeline		
	Toxic Release Inventory		
	Tier II		

0 300 Feet
 1 in = 263.71 feet
 Prepared for: TxDOT
 Scale: 1:3,165
 CSJ: 2073-01-009 and 2073-01-010
 Date: 5/24/2016



Sources: Esri, HERE, DeLorme, USGS, Intermap,

Figure 11b
Hazardous Materials Location Map
 FM 2206 from SH 42 to Loop 281

Data Source: GeoSearch
 Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (2014)

Legend	
	Existing ROW
	Proposed ROW
	Permitted Well Location
	Dry Well Hole
	Oil Well
	Gas Well
	Oil/Gas Well
	Plugged Oil Well
	Plugged Gas Well
	Injection/Disposal From Gas
	Horizontal Drainhole
	Sidetrack Well Surface Location
	Crude Oil Pipeline
	Ethane/Propane Mix Pipeline
	Natural Gas Pipeline
	Natural Gas Full Well Stream Pipeline
	Toxic Release Inventory
	Tier II
	VCP
	CERCLIS
	ERNS
	Facility Registry System
	NFRAP
	IHW
	IHW Corrective Action
	LPST
	RCRA Generator
	PST
	Facility ID No (Refer to Appendix A for Facility Name and Additional Information)

0 300 Feet
 1 in = 263.71 feet
 Prepared for: TxDOT
 Scale: 1:3,165
 CSJ: 2073-01-009 and 2073-01-010
 Date: 5/24/2016

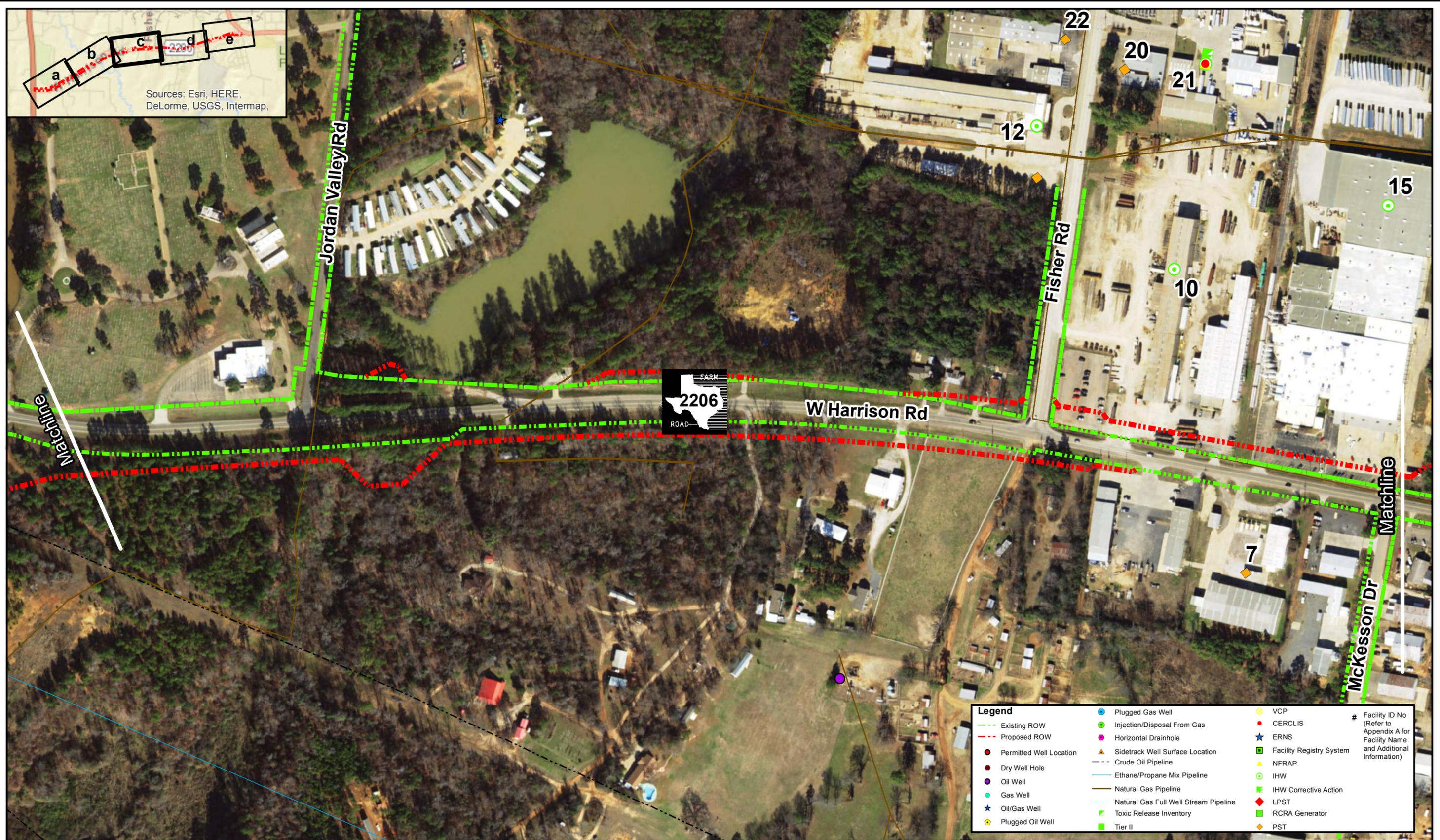


Figure 11c
Hazardous Materials Location Map
 FM 2206 from SH 42 to Loop 281

Data Source: GeoSearch
 Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (2014)

0 300 Feet

1 in = 263.71 feet

Prepared for: TxDOT Scale: 1:3,165

CSJ: 2073-01-009 and 2073-01-010 Date: 5/24/2016



Figure 11d
Hazardous Materials Location Map
 FM 2206 from SH 42 to Loop 281

Data Source: GeoSearch
 Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (2014)

Legend	
	Existing ROW
	Proposed ROW
	Permitted Well Location
	Dry Well Hole
	Oil Well
	Gas Well
	Oil/Gas Well
	Plugged Oil Well
	Injection/Disposal From Gas
	Horizontal Drainhole
	Sidetrack Well Surface Location
	Crude Oil Pipeline
	Ethane/Propane Mix Pipeline
	Natural Gas Pipeline
	Natural Gas Full Well Stream Pipeline
	Toxic Release Inventory
	Tier II
	Plugged Gas Well
	VCP
	CERCLIS
	ERNS
	Facility Registry System
	NFRAP
	IHW
	IHW Corrective Action
	LPST
	RCRA Generator
	PST
	Facility ID No (Refer to Appendix A for Facility Name and Additional Information)

0 300 Feet
 1 in = 263.71 feet
 Prepared for: TxDOT
 Scale: 1:3,165
 CSJ: 2073-01-009 and 2073-01-010
 Date: 5/24/2016

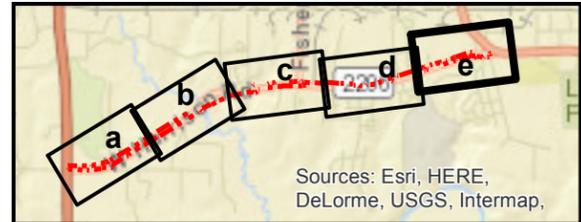


Figure 11e
Hazardous Materials Location Map
 FM 2206 from SH 42 to Loop 281

Data Source: GeoSearch
 Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (2014)

Legend			
	Existing ROW		Plugged Gas Well
	Proposed ROW		Injection/Disposal From Gas
	Permitted Well Location		Horizontal Drainhole
	Dry Well Hole		Sidetrack Well Surface Location
	Oil Well		Ethane/Propane Mix Pipeline
	Gas Well		Natural Gas Pipeline
	Oil/Gas Well		Natural Gas Full Well Stream Pipeline
	Plugged Oil Well		Toxic Release Inventory
	VCP		Tier II
	CERCLIS		ERNS
	Facility Registry System		NFRAP
	IHW		IHW Corrective Action
	LPST		RCRA Generator
	PST		Facility ID No (Refer to Appendix A for Facility Name and Additional Information)

0 300 Feet

1 in = 263.71 feet

Scale: 1:3,165

Date: 5/24/2016

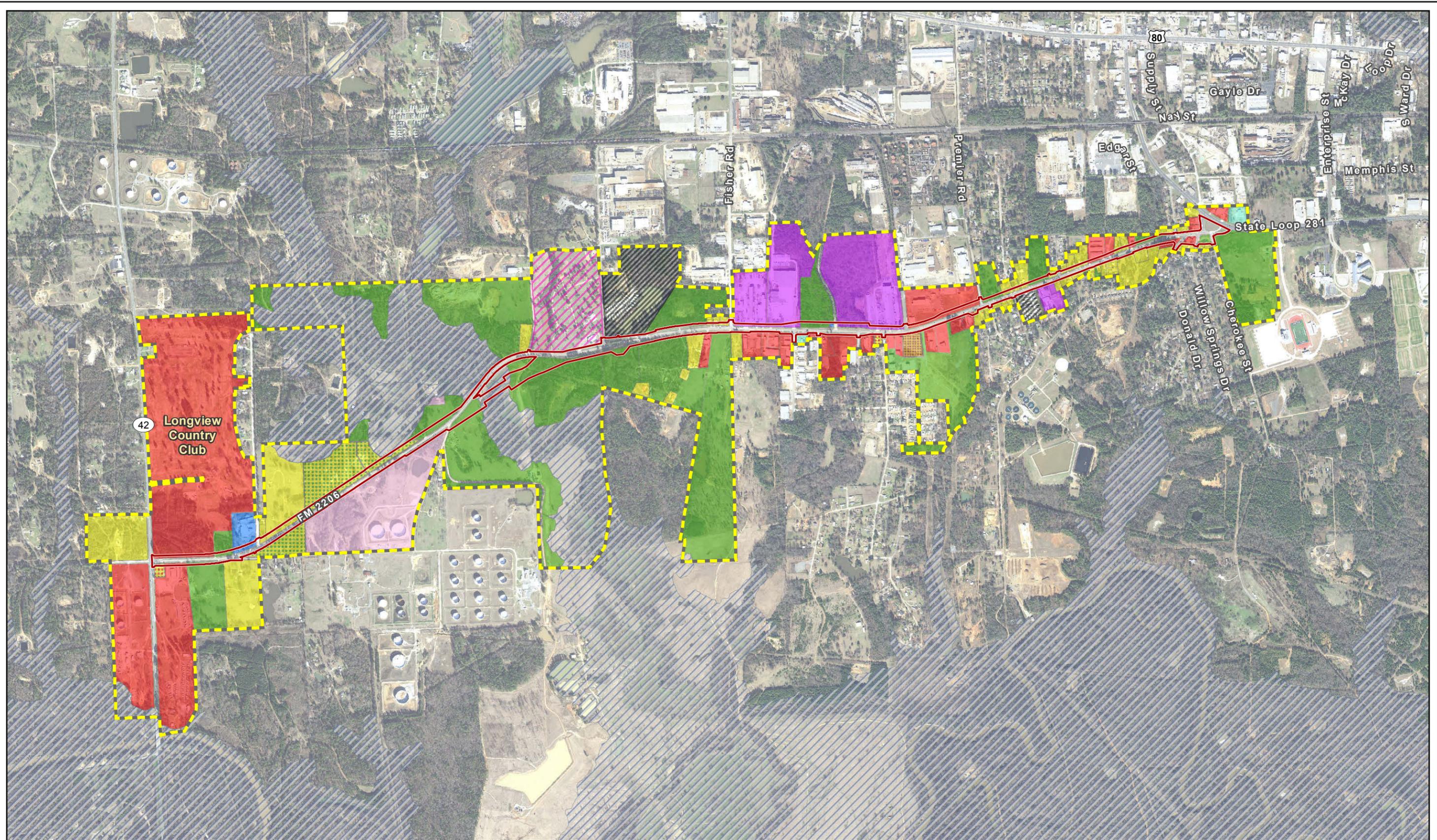


Figure 12
Indirect Impacts Area of Influence
 FM 2206 from SH 42 to Loop 281

- | | | | | |
|-------------------------|----------------------------|------------|--------------|------------------------------|
| Project Location | Agricultural / Undeveloped | Commercial | Mobile Homes | Residential and Commercial |
| Area of Influence (AOI) | Cemetery | Government | Oil/Gas | Residential and Agricultural |
| 100-Year Flood Zone | Church | Industrial | Residential | Utilities |

Data Sources: GCAD (2015),
 CMEC (2014), FEMA NFHL (2015)
 Aerial Source: TNRRIS (2015)

	0	1,500 Feet
	0	400 Meters
Prepared for: TxDOT	1 in = 1,500 feet	
CSJ: 2073-01-009, 2073-01-010	Scale: 1:18,000	
	Date: 4/28/2016	

1973
1974
1975

Appendix B
Project Area Photographs

1976
1977

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Photo 1: Western Terminus of the project area at the FM 2206 and SH 42 intersection. Viewing southwest.



Photo 2: Eastern terminus of the project area at Cherokee St. and US 281. Viewing north.



Photo 3: Hawkins Creek, a perennial stream channel, at existing FM 2206 bridge crossing. Viewing northeast.



**Photo 4: Cemetery Lake, open water north of FM 2206 with maintained herbaceous ROW (Vegetation Type 2).
Viewing east.**



Photo 5: Observed Vegetation Type 1: Emergent Wetland. Located south of FM 2206. Viewing east.



Photo 6: Vegetation Type 3: Mixed Pines and Hardwoods, located north of FM 2206. Viewing south.



Photo 7: Observed Vegetation Type 4: Previously Cleared Shrub-Scrub, located south of FM 2206. Viewing south.



Photo 8: Observed Vegetation Type 5: Sedge Meadow, located north of FM 2206. Viewing west.



Photo 9: Yummy Donuts Shop Displacement 1 in Figure 4a. Viewing north.



Photo 10: Riverside RV Park and Recreation Hall Displacement 2 in Figure 4a. Viewing southwest.



Photo 11: Residential Displacement 3 in Figure 4a. Viewing north.



Photo 12: Gregg County – Precinct 3 facility. Viewing north.



Photo 13: Residential Displacement 4 in Figure 4d. Viewing north.



Photo 14: Residential Displacement 5 in Figure 4d. Viewing north.



Photo 15: Residential Displacement 6 in Figure 4d. Viewing north.



Photo 16: Displacement 11 (shed) in Figure 4d. Viewing southwest.



Photo 17: Thriftee Food Store and Laundromat Displacement 12 in Figure 4d. Viewing southwest.



Photo 18: County Park partially within proposed right of way. Viewing northeast.

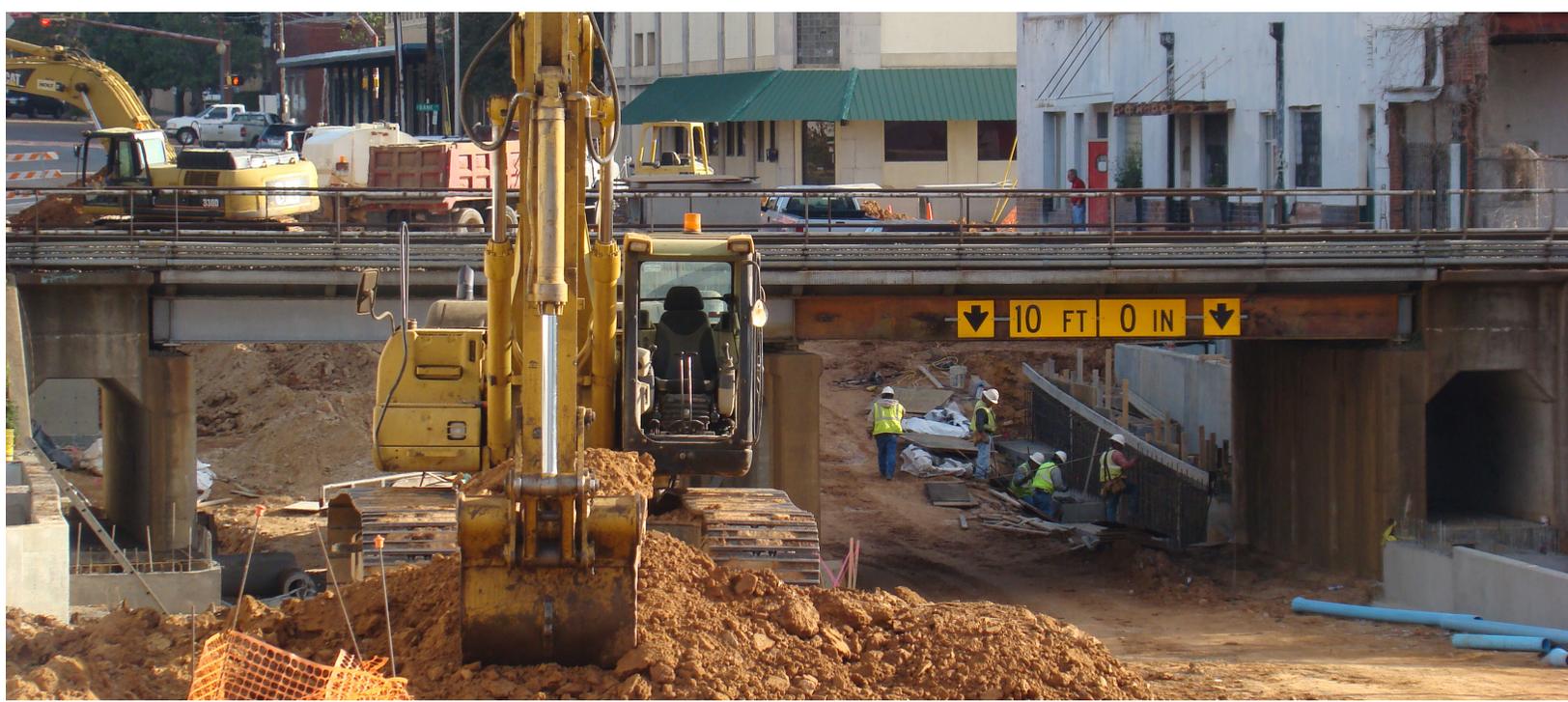
1978
1979
1980

Appendix C
MTP Pages

1981
1982

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CHAPTER 9 – FINANCIAL PLAN



FINANCIAL PLAN - Street & Highways 2015-2040

ESTIMATES ARE FOR PLANNING PURPOSES ONLY AND ARE BASED UPON AVAILABLE INFORMATION

TOTAL PROJECT COST ESTIMATES

MTP PROJECT ID#	SCORE	TARGET YEAR	PROJECT	LOCATION	DESCRIPTION	CONSTRUCTION			Preliminary Engineering ³ (Footnote #3)	Right of Way	Utility Relocation	Total					
						Federal & State	Federal & State Interstate 20	Toll Road									
2015 - 2024						FEDERAL & STATE PROJECTS:						FIGURES INCLUDE ANNUAL 4% INFLATION					
F 245	N/A	2015	FM 2275 (GEORGE RICHEY RD.)	SH 300 (GILMER RD) TO MCCANN RD	FIVE LANE DIVIDED ROADWAY ON NEW LOCATION	\$12,300,000			\$3,169,100	\$1,000,000	\$1,000,000	\$17,469,100					
F 107	N/A	2017	US 80	LOOP 485 TO LOCKER PLANT RD	RECONSTRUCT ROADWAY WITH CENTER TURN LANE	\$2,849,440			\$618,330	\$0	\$0	\$3,467,770					
F 108	N/A	2017	US 259	AT EDEN & TRYON RD	INTERSECTION SAFETY IMPROVEMENTS	\$2,701,420			\$216,320	\$162,240	\$162,240	\$3,242,220					
F 115	4.0	2019	FM 2206 (HARRISON RD)	LOOP 281 TO FISHER RD	WIDEN FROM 2 TO 4 LANES DIVIDED	\$10,528,730			\$3,454,590	\$2,047,250	\$11,698,590	\$27,729,160					
F 130	4.5	2020	W. LOOP 281	US 80 TO SHOFNER RD	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$2,163,390			\$834,450	\$2,321,370	\$304,160	\$5,623,370					
F 109	6.5	2020	US 80	MUSTANG TO VIRGINIA DR	RECONSTRUCT ROADWAY WITH CENTER TURN LANE	\$3,649,960			\$1,157,040	\$912,490	\$304,160	\$6,023,650					
F 246	6.5	2021	FM 2275 (GEORGE RICHEY RD.)	FM 1845 to SH 300	WIDEN FROM 2 TO 4 LANES, DIVIDED	\$10,758,450			\$3,726,430	\$8,363,760	\$2,846,970	\$25,695,610					
F 247	8.5	2023	FM 2275 (GEORGE RICHEY RD.)	FM 3272 (WHITE OAK RD) TO FM 1845	WIDEN FROM 2 TO 4 LANES, DIVIDED	\$13,175,540			\$4,364,520	\$1,149,600	\$6,842,850	\$25,532,510					
F 110	6.2	2024	SPUR 63 /SH 31	SOUTH ST TO MCCANN RD	WIDEN FROM 4 TO 6 LANES, DIV. & REPLACE RR BRIDGE	\$12,437,610			\$3,552,950	\$15,320,530	\$853,990	\$32,165,080					
2015 to 2024						\$70,564,540			\$21,093,730	\$31,277,240	\$24,012,960	\$146,948,470					
2025 - 2040						FEDERAL & STATE PROJECTS:						FIGURES INCLUDE ANNUAL 4% INFLATION					
F 120	5.0	2027	FM 2208 / ALPINE	LOOP 281 TO US 259	WIDEN FROM 2 TO 4 LANES, DIVIDED	\$9,406,750			\$2,521,580	\$4,220,320	\$960,620	\$17,109,270					
F 140	4.7	2030	E. LOOP 281	FOURTH ST TO FM 2208	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$30,255,850			\$7,105,800	\$5,402,830	\$540,280	\$43,304,760					
F 250	N/A	2030	TOLL 49	US 271 TO US 259	NEW 2 LANE TOLL ROAD OF AN ULTIMATE 4 LANE RD			\$115,260,380	\$6,843,590	\$22,511,790	\$4,322,260	\$148,938,020					
F 141	3.5	2032	E. LOOP 281	FM 2208 TO PAGE RD	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$21,816,490			\$5,318,550	\$1,363,530	\$389,580	\$28,888,150					
F 131	4.5	2035	W. LOOP 281	FM 2206 TO US 80	WIDEN FROM 4 TO 6 LANES, DIV. & REPLACE RR BRIDGE	\$16,681,630			\$4,277,250	\$14,976,330	\$1,205,120	\$37,140,330					
2025 to 2040						\$78,160,720		\$115,260,380	\$26,066,770	\$48,474,800	\$7,417,860	\$275,380,530					
2015 to 2040						\$148,725,260		\$115,260,380	\$47,160,500	\$79,752,040	\$31,430,820	\$422,329,000					
UNFUNDED NEEDS						FEDERAL & STATE PROJECTS:						FIGURES BELOW ARE SHOWN IN 2015 DOLLARS & ARE NOT INFLATED					
F 234	6.1		INTERSTATE 20	VARIOUS LOCATIONS IN MPO AREA	BRIDES, INTERCHANGES & FRONTAGE RD IMPROVEMENTS	\$78,600,000			FOOTNOTE #2	FOOTNOTE #1	FOOTNOTE #1	\$78,600,000					
F 235	6.1		INTERSTATE 20	VARIOUS LOCATIONS IN MPO AREA	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$121,400,000			FOOTNOTE #2	FOOTNOTE #1	FOOTNOTE #1	\$121,400,000					
F 116	5.0		FM 2206 (HARRISON RD)	SH 42 TO FISHER RD	WIDEN FROM 2 TO 4 LANES DIVIDED	\$17,762,930			\$5,778,870	\$2,960,490	\$29,604,890	\$56,107,180					
F 248	4.9		FM 2275 (GEORGE RICHEY RD.)	TEXAS ST TO FM 3272 (WHITE OAK RD)	WIDEN FROM 2 TO 4 LANES, DIVIDED	\$16,307,040			\$5,166,900	\$6,108,970	\$1,480,240	\$29,063,150					
F 249	6.1		FM 2275 (GEORGE RICHEY RD.)	US 271 TO TEXAS ST	WIDEN FROM 2 TO 4 LANES, DIVIDED	\$14,781,100			\$4,835,770	\$5,124,610	\$1,480,240	\$26,221,720					
F 132	4.1		W. LOOP 281	COTTON TO FM 2206	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$6,430,850			\$2,283,640	\$7,445,630	\$666,110	\$16,826,230					
F 133	5.3		W. LOOP 281	FM 2205 (JAYCEE DR) TO COTTON	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$6,019,200			\$2,194,310	\$3,596,990	\$666,110	\$12,476,610					
F 134	4.7		W. LOOP 281	FM 2087 TO FM 2205 (JAYCEE DR)	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$16,238,150			\$4,411,830	\$7,374,580	\$740,120	\$28,764,680					
F 135	4.9		W. LOOP 281	BIRDSONG TO FM 2087	WIDEN FROM 4 TO 6 LANES, DIVIDED	\$17,518,260			\$5,281,710	\$16,774,130	\$13,668,580	\$53,242,680					
UNFUNDED PROJECTS TOTAL						\$95,057,530	\$200,000,000		\$29,953,030	\$49,385,400	\$48,306,290	\$422,702,250					

FOOTNOTES 1 = Right of way and relocation of utilities for this project will not be known until schematic & finalized design is determined.
 2 = Preliminary engineering, right of way and utilities are funded through non-construction funding sources.
 3 = Preliminary engineering also includes construction engineering, contingencies & indirect costs.

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Appendix D
Resource Agency Coordination Documentation

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Ryan Blankenship

To: Larry Cox
Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]
Sent: Tuesday, May 10, 2016 11:39 AM
To: Jay Tullos Jr
Subject: FW: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Jay,

Sorry for the delay.

Do you have a schematic?

I'm mostly curious about the site where the curve is being straightened out. Is that an easement just southeast of Jordan Valley Road? It looks like there may be wetlands there.

If you could send me more information about that area, I would appreciate it.

Thank you,

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

From: WHAB_TxDOT
Sent: Tuesday, April 12, 2016 2:00 PM
To: Jay Tullos Jr; WHAB_TxDOT
Cc: Larry Cox (Larry@coxmcclain.com); Sue Reilly
Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Good afternoon,

The TPWD Wildlife Habitat Assessment Program has received your request for Early Coordination and has assigned it project ID #36484. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,
Gloria Garza
Administrative Assistant
Texas Parks and Wildlife Dept
Wildlife Division - [Habitat Assessment Program](#)
4200 Smith School Rd
Austin, TX 78744

Office: (512) 389-4571

Fax: (512) 389-4599

gloria.garza@tpwd.texas.gov

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From: Jay Tullos Jr [<mailto:Jay.Tullos@txdot.gov>]

Sent: Tuesday, April 12, 2016 10:40 AM

To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>

Cc: Larry Cox (Larry@coxmcclain.com) <Larry@coxmcclain.com>

Subject: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Please find attached the early Coordination package for this project.



Ryan Blankenship

To: Larry Cox
Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

----- Original message -----

From: Jay Tullos Jr <Jay.Tullos@txdot.gov>
Date: 5/16/2016 10:43 AM (GMT-06:00)
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Cc: Larry Cox <larry@coxmclain.com>
Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Sue,

Crossing # 7 is an unnamed tributary to Hawkins Creek. It is not within the 100 yr floodplain. The width of the OHWM is approximately 10 feet. Two 48-inch reinforced concrete pipes convey flow under the existing FM 2206 to the south. An adjacent erosional feature is located south of FM 2206 and is likely a result of infrequent, large-magnitude storm water events. No OHWM was observed within the erosional feature. Vegetation along the stream channel is dominated by Mixed Pines and Hardwoods Vegetation. The banks are approximately 1 to 2 feet in height and gently sloping. No adjacent wetlands were observed at this crossing. This unnamed tributary to Hawkins Creek is best described as an intermittent stream channel that conveys flows to the south. It appears that under current USACE guidance Crossing 7 would likely be considered a Water of the U.S. because of a downstream connection to a navigable water (Sabine River).

Where the ROW line bumps out to the south is not an easement, it is new ROW. The topography on the south side is very steep in the area of the stream channel. There is an approximate 35 foot difference between the edge of the new pavement and where the new front slope ties in because of the elevation difference. To widen the road and extend the culverts at this location requires more ROW to make it fit.

We are trying to minimize impacts as much as possible with this project and still accomplish safety and design criteria. Only enough ROW will be acquired to safely build the project. Every effort will be made to concentrate the contractor's construction activities in areas where permanent impacts will occur and to locate PSLs in upland and previously disturbed areas. In addition, the project will have an SW3P in place and stormwater BMP's will be maintained and adjusted as site conditions dictate.

Thank you,

jay

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]

Sent: Friday, May 13, 2016 5:09 PM

To: Jay Tullos Jr

Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Can you tell me more about Crossing 7? Is that a temporary easement where the ROW line bumps out to the south?

My request is that TxDOT minimize impacts, both temporary and permanent, to riparian vegetation, woodland habitat, and wetlands. Because there are so many waters in this project, I think it would be helpful to direct contractors to avoid driving through watercourses and wetlands, and to locate any project specific locations (PSLs) such as equipment storage, stockpiles, and borrow areas in uplands, away from riparian areas, and preferably in previously disturbed areas.

Thank you,

Sue Reilly

Transportation Assessment Liaison

TPWD Wildlife Division

512-389-8021

From: Jay Tullos Jr [<mailto:Jay.Tullos@txdot.gov>]

Sent: Friday, May 13, 2016 4:09 PM

To: Sue Reilly

Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Sue,

Please see the attached concerning the additional right-of-way where the curve is being straightened our southeast of Jordan Valley Road. The introduction says Cooke County but the project is in Gregg County. Hopefully this will address your concerns.

Thanks,

Jay

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]

Sent: Tuesday, May 10, 2016 11:39 AM

To: Jay Tullos Jr

Subject: FW: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Jay,

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I'm mostly curious about the site where the curve is being straightened out. Is that an easement just southeast of Jordan Valley Road? It looks like there may be wetlands there.

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Thank you,

Sue Reilly

Transportation Assessment Liaison

TPWD Wildlife Division

512-389-8021

From: WHAB_TxDOT

Sent: Tuesday, April 12, 2016 2:00 PM

To: Jay Tullos Jr; WHAB_TxDOT

Cc: Larry Cox (Larry@coxmcclain.com); Sue Reilly

Subject: RE: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Good afternoon,

The TPWD Wildlife Habitat Assessment Program has received your request for Early Coordination and has assigned it project ID #36484. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

Gloria Garza

Administrative Assistant

Texas Parks and Wildlife Dept

Wildlife Division - [Habitat Assessment Program](#)

4200 Smith School Rd

Austin, TX 78744

Office: (512) 389-4571

Fax: (512) 389-4599

gloria.garza@tpwd.texas.gov

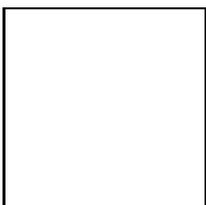
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From: Jay Tullos Jr [<mailto:Jay.Tullos@txdot.gov>]
Sent: Tuesday, April 12, 2016 10:40 AM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Cc: Larry Cox (Larry@coxmcclain.com) <Larry@coxmcclain.com>
Subject: Early Coordination for FM 2206, CSJ: 2073-01-009 & 2073-01-010, Gregg Co.

Please find attached the early Coordination package for this project.



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



600 East John Carpenter Freeway Suite 380
Irving, Texas, 75062
www.coxmclain.com