



FINAL

Environmental Assessment

SH 71 at FM 1209

From CR 206 to SH 21

Bastrop County, Texas

CSJ: 0265-03-041

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Prepared for Texas Department of Transportation Austin District

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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LIST OF ACRONYMS

Below is a list of acronyms used throughout this Environmental Assessment.

ACS	American Community Survey
AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AOI	Area of Influence
APE	Area of Potential Effects
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
CAMPO	Capital Area Metropolitan Planning Organization
CDP	Census Designated Place
CFR	Code of Federal Regulations
CGP	Construction General Permit
CMP	Congestion Management Process
CO	Carbon Monoxide
CR	County Road
CSJ	control-section-job
CWA	Clean Water Act
DHHS	US Department of Health and Human Services
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMST	Ecological Mapping system of Texas
EO	Executive Order
EPA	Environmental Protection Agency
EPIC	Environmental Permits, Issues, and Commitments
ETC	Estimated Time of Completion
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FM	Farm-to-Market Road
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FWCA	Fish and Wildlife Coordination Act
GIS	Geographic Information Systems
HRSR	Historic Resources Survey Report
IHWCA	Industrial Hazardous Waste Corrective Action

ISA	Initial Site Assessment
LEP	Limited English Proficiency
LOS	Level of Service
LPG	Liquid Petroleum Gas
LPST	Leaking Petroleum Storage Tank
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emissions Simulator
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHL	National Historic Landmarks
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreement
PCN	Pre-construction Notification
PCR	Project Coordination Request
PM	Particulate Matter
PS&E	Plans, Specifications, and Estimates
PST	Petroleum Storage Tank
PWC	Parks and Wildlife Code
ROW	Right-of-way
RRC	Railroad Commission of Texas
RTHL	Recorded Texas Historic Landmarks
SAL	State Archeological Landmarks
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
STIP	State Transportation Improvement Plan
SW3P	Storm Water Pollution Prevention Plan
TAQA	Traffic Air Quality Analysis
TCEQ	Texas Commission on Environmental Quality
TERP	Texas Emissions Reduction Plan

THC	Texas Historical Commission
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TPDES	Texas Pollutant Discharge Elimination System
TPP	Transportation Planning and Programming
TPWD	Texas Parks and Wildlife Department
TSS	Total Suspended Solids
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
US/U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USIBWC	United States International Boundary Water Commission
UTP	Unified Transportation Plan
vpd	vehicles per day

1.0 INTRODUCTION

The Texas Department of Transportation (TxDOT) Austin District is proposing to construct a grade separation and roadway improvements to State Highway (SH) 71 from County Road (CR) 206 to SH 21 in Bastrop County, Texas. The proposed improvements would include constructing new frontage roads, a grade-separation over Farm-to-Market (FM) 1209, and shared use paths. FM 1209 would be widened to include a 12-foot-wide left turn lane in each direction. East/west turnarounds would also be added on either side of the SH 71 and FM 1209 intersection and on the west side of the SH 71 intersection with SH 21. **Figures 1 and 2** in **Appendix A** provide the project location on county base and U.S. Geological Survey (USGS) topographic maps. **Appendix B** provides photos of the project area; **Appendix C** provides the project schematic; and **Appendix D** provides existing and proposed typical sections.

The purpose of this Environmental Assessment (EA) is to evaluate the potential environmental consequences of the proposed project and determine whether such consequences warrant preparation of an Environmental Impact Statement (EIS). This EA has been prepared to comply with both TxDOT's environmental review rules and the National Environmental Protection Act (NEPA). This Final EA will be made available for public review and, following the comment period, TxDOT will consider any comments submitted. If TxDOT determines there are no significant adverse effects, TxDOT will prepare and sign a finding of no significant impacts (FONSI), which will be made available to the public.

2.0 PROJECT DESCRIPTION

2.1 Existing Facility

The existing SH 71 facility consists of two 12-foot-wide travel lanes in each direction with 10-foot-wide outside shoulders and 4-foot-wide inside shoulders. Directions of travel are separated by a grassy depressed median, approximately 68 feet in width. The existing right-of-way (ROW) is approximately 240 feet wide. The existing FM 1209 facility consists of one 12-foot-wide travel lane in each direction. The existing ROW along FM 1209 is approximately 80 feet wide. Photos of the existing facility are included in **Appendix B**. Existing and proposed typical sections are included as **Figures 1.1** through **1.3** in **Appendix D**.

2.2 Proposed Facility

The proposed project along SH 71 from CR 206 to SH 21 would add a grade separation at FM 1209 and construct new frontage roads along SH 71 while maintaining access to adjacent properties. Access to FM 1209 would be provided via ramps to the anticipated signalized intersection. If completed, the mainlanes of the SH 71 facility would consist of two 12-foot-wide lanes in each direction with 4-foot-wide inside shoulders and 10- to 22-foot-wide outside shoulders. Directions of travel would be separated by a grassy median that would be approximately 64 feet in width.

Each frontage road would consist of two 12-foot-wide travel lanes with 2-foot-wide inside and outside curb and gutter. Ramps would have a 14-foot-wide travel lane with a 4-foot-wide inside shoulder, a 6-foot-wide outside shoulder, and 2-foot-wide curb and gutter on both sides.

Median openings would be removed along SH 71 at the CR 206, River Oaks Drive, Blue Flame Road, and Stephen F. Austin Boulevard intersections, and farther east just past the Shell gas station near the eastern project limit. Deceleration and acceleration lanes would be added to the median break along SH 71 just west of the CR 206 intersection.

The proposed improvements to FM 1209 at SH 71 include construction of one 12-foot-wide travel lane and a 12-foot-wide left turn lane in each direction. Twenty-four-foot-wide at-grade turnarounds for east/west traffic would be added at the SH 71/FM 1209 intersection, and an east/west turnaround would be added on the west side of the SH 71/SH 21 intersection. A 10-foot-wide shared-use path would be constructed on each side of SH 71 and FM 1209. Existing and proposed typical sections are included in **Figures 1.1** through **1.3** in **Appendix D**.

The length of the proposed project is approximately 2.5 miles. It is anticipated that the project would require approximately 32.5 acres of additional ROW. Displacements may consist of seven residential displacements, 25 commercial displacements, and 28 other displacements (i.e. billboards, outbuildings, and signs). Displacements would be subject to final design considerations.

Federal regulations require that federally funded transportation projects have logical termini [23 Code of Federal Regulations (CFR) §771.111(f)(1)]. Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. In accordance with 23 CFR §771.111(f)(1), the logical termini of the project have been identified as the significant local traffic generators that use the FM 1209 intersection along SH 71, which include CR 206 to the northwest and SH 21 to the southeast.

Federal regulations require that a project have independent utility and to be a reasonable expenditure even if no other transportation improvements are made in the area [23 CFR §771.111(f)(2)]. This means a project must be able to provide benefit by itself, and that the project not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project can stand on its own without the implementation of other traffic improvements. This project does not irretrievably commit federal funds for other future transportation projects and provides congestion relief between CR 206 and SH 21 by constructing a grade separation along SH 71 over FM 1209; therefore, it has been determined that the project has independent utility.

Federal law prohibits a project from restricting consideration of alternatives for other reasonably foreseeable transportation improvements [23 CFR §771.111(f)(3)]. This means that a project must not dictate or restrict any future roadway alternatives. The proposed project would not predetermine or preclude future work along SH 71, and would not restrict the consideration of future transportation improvements. The proposed project would provide a grade separation and would maintain access to cross streets and abutting properties. The current engineering schematic is included in **Appendix C**.

The proposed project is consistent with the TxDOT 2018 Unified Transportation Program (UTP), the Capital Area Metropolitan Planning Organization (CAMPO) 2019-2022 Transportation Improvement Program (TIP), and the 2019-2022 State Transportation Improvement Plan (STIP) (**Appendix E**). The proposed project would be funded with federal and state funds totaling approximately \$35,000,000 (\$28,000,000 federal funds and \$7,000,000 state funds).

3.0 PURPOSE AND NEED

3.1 Need

The proposed project is needed to address increased congestion along SH 71 due to increased population growth and traffic volumes.

3.2 Supporting Facts and/or Data

The SH 71 roadway is the main traffic route connecting the City of Austin with the City of Bastrop and other cities east of Austin. A traffic operational analysis was conducted to analyze the current level of service (LOS) for the SH 71 existing conditions (2016), as well as the projected level of service for the existing roadway (2040) (Alliance Transportation Group 2018). Level of service (or LOS) is a measure of traffic flow and congestion and is given a ranking from A to F, with A being the best and F being the worst (**Insert 1**).

Insert 1. LOS Definitions

LOS Rating	Definition
LOS A	<ul style="list-style-type: none"> Free-flow operation
LOS B	<ul style="list-style-type: none"> Reasonably free-flow Ability to maneuver is only slightly restricted Effects of minor incidents still easily absorbed
LOS C	<ul style="list-style-type: none"> Speeds at or near free-flow speeds Freedom to maneuver slightly restricted Queues may form behind significant blockages
LOS D	<ul style="list-style-type: none"> Speeds decline slightly with increasing flows Density increases more quickly Freedom to maneuver is more noticeably limited Minor incidents can lead to queuing
LOS E	<ul style="list-style-type: none"> Operation near capacity Limited usable gaps in traffic stream Operations become volatile Any disruption leads to queuing
LOS F	<ul style="list-style-type: none"> Breakdown in flow Queues form behind breakdown points Demand > Capacity

In 2016, data collected for the SH 71 and FM 1209 intersection indicated the SH 71 roadway operated at a LOS F in the morning hours and a LOS E in the afternoon/evening hours. If no improvements were made to the existing SH 71 roadway, the LOS for the year 2040 is projected to be at a LOS F in the morning hours and a LOS F in the evening hours (Alliance Transportation Group 2018).

According to projections approved by TxDOT's Transportation Planning and Programming (TPP) Division, travel demand along SH 71 near the FM 1209 intersection is anticipated to increase over the next 20 years (**Table 1**). In 2020, the average daily traffic (ADT) is expected to reach 36,650 vehicles per day (vpd) along SH 71 from west and east of the FM 1209 intersection, and is expected to reach 51,650 in 2040, an approximately 41 percent increase. Traffic numbers were calculated based on traffic numbers shown directly west and east of the SH 71 and FM 1209 intersection in the stick diagrams of the TxDOT TPP Traffic Memorandum dated March 23, 2017 included in the *Traffic Noise Technical Report* dated February 2019 and the *Air Quality Technical Report* dated February 2019.

Table 1. SH 71 2020 and 2040 Projected ADT

	2020	2040
SH 71 West of FM 1209	18,100	25,500
SH 71 East of FM 1209	18,550	26,150
Total	36,650	51,650

Source: TxDOT TPP Traffic Memorandum dated March 23, 2017

The proposed project is located west of the City of Bastrop near Wyldwood, Texas which is a census designated place (CDP), and near the unincorporated community of Cedar Creek. Wyldwood is directly south and west of the project area. According to the US Census Bureau, the population of the Wyldwood CDP was 2,505 in 2010 and was estimated at 3,536 in 2016, an approximately 41 percent increase. Cedar Creek is a community south and west of the SH 71 and FM 1209 intersection in unincorporated Bastrop County. The population was reported as 11,457 in 2010 and was estimated to be 12,369 in 2016, an approximately 8 percent increase. The city of Bastrop's population in 2010 was reported as 7,218, and was estimated as 7,909 in 2016, an approximately 10 percent increase (**Table 2**).

In 2010, the population of Bastrop County was 74,171 and rose to an estimated 78,286 in 2016, an approximately 6 percent increase. The Texas Water Development Board (TWDB) reported the population of Bastrop County is expected to reach approximately 95,487 by 2020, and 164,648 by the year 2040, an approximately 72 percent increase (TWDB 2018a).

Table 2. Population Growth

	2010	2016
Wyldwood CDP	2,505	3,536
Cedar Creek	11,457	12,369
City of Bastrop	7,218	7,909
Bastrop County	74,171	78,286

Source: U.S. Census Bureau, 2010.

3.3 Purpose

The purpose of the proposed project (the Build Alternative) is to improve mobility and reduce congestion along SH 71 at FM 1209.

4.0 ALTERNATIVES

4.1 Build Alternative

The Build Alternative, as described in **Section 2.2**, would be approximately 2.5 miles long and would require approximately 32.5 acres of additional ROW. This alternative would provide a grade separation along SH 71 over FM 1209 with new frontage roads extending from CR 206 to SH 21. The frontage roads would provide access to adjacent properties and the signalized intersection at FM 1209. The alignment would require additional ROW from the north and south sides of SH 71 west of FM 1209, and would require additional ROW from the north side of SH 71 east of FM 1209. This alternative optimizes proposed ROW needs and would not displace Wyldwood Baptist Church (a community facility), a telecommunication tower to the north, an electric substation to the south, or impact two ponds to the south, which would have required a potential Individual Permit. Also, the Build Alternative is predicted to improve the LOS in 2040 from a LOS F rating for the morning and evening hours to a LOS B rating in the morning hours and a LOS B or C in the evening hours. The Build Alternative would meet the purpose and need of the project by improving mobility and reducing congestion along SH 71.

4.2 No-Build Alternative

Under the No-Build Alternative, SH 71 at FM 1209 would not be modified. The No-Build Alternative assumes that no transportation improvements beyond the continued maintenance of the existing facility would occur. This alternative would not reduce congestion or improve mobility within the study area; therefore, it would not address the purpose and need of the proposed project. The Build Alternative is the preferred alternative; however, the No-Build Alternative is carried forward in this EA to provide a baseline for comparison to the Build Alternative.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

Early concepts considered for SH 71 at FM 1209 included overpass and underpass structures. Underpass structures were eliminated from further consideration because it was determined that any underpass structure would pose substantial issues regarding stormwater flooding events.

Three preliminary alternatives for overpass grade separations were considered for SH 71 at FM 1209. All preliminary alternatives considered extended from CR 206 to SH 21 and included the following:

- Construct grade separation and acquire proposed ROW from north side
- Construct grade separation and acquire proposed ROW from south side
- Construct grade separation and acquired proposed ROW equally on both sides.

Constructing a grade separation to the north would require approximately 34 acres of new ROW and displace seven residences and 24 businesses. In addition, this preliminary alternative would displace a telecommunication tower. This preliminary alternative was eliminated from further consideration based on anticipated displacements, and impact to the telecommunication (cell) tower.

Constructing a grade separation to the south would require approximately 34 acres of new ROW and displace two residences and 20 businesses. This preliminary alternative would also displace the Wyldwood Baptist Church, an electric substation, and require filling or draining two ponds. This preliminary alternative was eliminated from further consideration based on potential impacts to a community facility (i.e. Wyldwood Baptist Church), impacts to the electric substation, and a potential U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit.

Constructing a grade separation while acquiring proposed ROW from both sides of SH 71 equally would require approximately 36 acres of new ROW and displace four residences and 34 businesses. This preliminary alternative would also displace the telecommunication tower, the electric substation, and impact the ponds resulting in a potential Section 404 Individual Permit. This preliminary alternative was eliminated from further consideration based on the highest impacts to businesses, impacts to the electric substation, the telecommunication tower, and a potential Section 404 Individual Permit.

5.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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

- Community Impacts Assessment Technical Report Form
- Archeological Background Study Form
- Project Coordination Request (PCR) for Historical Studies Project Form
- Historic Studies Research Design Report
- Historic Resources Survey Report
- Water Resources Technical Report
- Biological Evaluation Form
- Tier 1 Site Assessment Form
- Air Quality Technical Report
- Hazardous Materials Initial Site Assessment (ISA) Form
- Traffic Noise Analysis Technical Report
- Indirect Impacts Technical Report
- Documentation of Public Meeting
- Documentation of Public Hearing

These technical reports, maps showing the project location and design, and other information regarding the project are on file and available for inspection and may be copied upon request at the TxDOT Austin District Office.

5.1 Right-of Way Acquisition and Displacements

The Build Alternative would require approximately 32.5 acres of additional ROW. See **Appendix C** for the project schematic to see where ROW would be required. Potential displacements would include seven residential displacements and 25 commercial displacements. In addition, the project would result in displacing 14 billboards, 13 outbuildings, and two business signs. Displacements would be subject to final design considerations. Relocation assistance would be provided. ROW acquisition and relocation would be conducted in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 (Uniform Act).

The No-Build Alternative would not require the acquisition of ROW or easements, nor would it result in displacements or relocations.

5.2 Land Use

The proposed project is located along a 2.5 mile stretch of SH 71 in western Bastrop County, Texas. The surrounding area is comprised of scattered residential and commercial properties, as well as some undeveloped properties. Development is concentrated around major intersections, including SH 71 at FM 1209. There are scattered vacant buildings and undeveloped plots of land throughout the project corridor that are available for rent or sale. However, most properties adjacent to the project area are developed.

Under the Build Alternative, some properties adjacent to the project area would be displaced and converted to transportation ROW. This would include residential and commercial properties. Within the project limits, most of the adjacent land is developed. Business owners of displaced properties may choose to relocate their business to undeveloped properties adjacent to the project area or may choose to leave the area.

Under the No-Build Alternative, there would be no changes to land use except for what is already planned by the governing agencies of the area.

5.3 Farmlands

The Farmland Protection Policy Act (FPPA), as detailed in Subtitle I of Title XV of the Agricultural and Food Act of 1981, provides protection to prime and unique farmlands, as well as farmlands of statewide or local importance. Prime farmland soils, as defined by the U.S. Department of Agriculture (USDA), are soils that are best suited to producing food, feed, forage, and oilseed crops. Such soils have properties that are favorable for the production of sustained high yields. Prime farmland can include cropland, pastureland, rangeland, or forestland, but does not include land converted to urban, industrial, transportation, or water uses. The purpose of the FPPA ensures that federal actions are compatible with state, local government, and private programs or policies to protect farmland.

The project area does not fall within a U.S. Census Bureau 2010 Urbanized Area, and the project area contains areas mapped as farmland of statewide importance by the National Resources Conservation Service (NRCS) (Web Soil Survey 2018). Therefore, a NRCS-CPA-106 form was completed to evaluate

potential farmland soil impacts. The proposed project received a score below 60 on Part VI of the form, therefore, coordination with the NRCS is not required under the FPPA. The completed NRCS-CPA-106 form is included in the *Biological Evaluation Form* dated December 2018 on file at the TxDOT Austin District office.

The No-Build Alternative would not result in impacts to prime and unique farmlands or farmlands of statewide or local importance, and therefore would not require coordination with the NRCS.

5.4 Utilities/Emergency Services

Several utilities (including fiber optics, overhead and underground electrical, water, and waste water) are located within or adjacent to the project. Utilities may need to be relocated; the location of utilities would be determined at the detailed design phase, and coordination with utility owners would take place at that time. Adjustment or relocation of these and other utilities would be handled so that no substantial interruption in service would occur, if required.

The Build Alternative would improve congestion and travel times for all vehicles, including emergency service vehicles. The Bastrop County Emergency Services District (ESD) No. 1 Station 4 is located approximately 0.7 mile southwest of the project area on Still Forrest Drive, and Phi Air Medical (an air ambulance provider) is located near the western limit of the project area on SH 71. The proposed project activities are not anticipated to affect travel for the Bastrop County ESD No. 1 Station 4 due to distance from the project area, and Phi Air Medical traffic would not be affected since its main mode of transportation is by helicopter. There are no other local emergency services located within the project area, however, emergency services within the county include law enforcement, fire response, and emergency medical services (or EMS). Temporary detours and changes in access would occur during construction within the project area; however, access to adjacent properties would be maintained throughout the construction phase of the project.

The No-Build Alternative would not impact existing utilities. Existing congestion is expected to increase under the No-Build Alternative due to projected traffic and population increases; therefore, emergency response times could increase under this alternative.

5.5 Bicycle and Pedestrian Facilities

The existing SH 71 facility does not include sidewalks or bicycle lanes. The proposed project would improve pedestrian and bicycle accommodations by constructing a shared-use path along the north and south sides of the proposed SH 71 frontage roads and along both sides of FM 1209.

Under the No-Build Alternative, shared-use paths would not be constructed, and the SH 71 and FM 1209 facilities would function as they currently do.

5.6 Community Impacts Environmental Justice and Limited English Proficiency

The *Community Impacts Assessment Technical Report Form*, dated February 2019, concluded that the Build Alternative would result in residential, commercial, and other displacements (i.e. billboards,

outbuildings, and signs), but is not anticipated to result in substantial adverse impacts to access, travel patterns, or community cohesion.

The proposed project would result in approximately seven residential displacements. Based on a search on the Bastrop County Appraisal District website and Zillow.com, an online real estate website, in November 2018, there are approximately 75 comparable replacement properties (Bastrop CAD 2018; Zillow 2018). No communities would be bisected by the project. The proposed project would result in 25 commercial displacements. Based on a search on LoopNet.com, there are 46 comparable replacement properties. Additionally, based on a search on Indeed.com, there are approximately 274 advertised jobs at similar businesses near the potentially displaced businesses within the community or within 10 miles of the project area, indicating employees of the businesses displaced by the proposed project would be able to find alternative employment, if necessary, and that impacts to displaced employees would be temporary. The proposed project would result in 28 other displacements, consisting of 14 billboards, 12 outbuildings, and two business signs. See **Figures 1.1 through 1.5** in **Appendix F** for maps showing potential displacements.

The proposed project would enhance access and travel patterns and improve mobility by constructing a grade separation over the FM 1209 intersection, and reduce congestion by constructing frontage roads throughout the project limits. Five median breaks would be removed and could result in increased travel distances; however, east/west turnarounds would be added to the SH 71 intersections at FM 1209 and SH 21. The proposed project would also enhance pedestrian and bicycle accommodations by adding shared use paths on each side of SH 71 and FM 1209. Access to adjacent properties would be maintained via the new frontage roads. It is not anticipated that the proposed project would isolate any businesses or distinct neighborhoods.

The proposed project would maintain the existing SH 71 alignment, but would reconstruct the mainlanes for a grade-separation over FM 1209 and construct new frontage roads. Access to FM 1209 would be maintained via ramps to the intersection, and access to adjacent properties would be maintained via the new frontage roads. The removal of five median breaks could increase travel times to access community facilities, but median breaks farther west on SH 71 and proposed turnarounds that would be added at the SH 71 and FM 1209 intersection and the SH 71 and SH 21 intersection would provide ways for the public to access adjacent properties. The proposed project would not isolate any businesses or distinct neighborhoods. The proposed project would not result in new or additional barriers between communities. The proposed project would not result in the division or isolation of any businesses, distinct neighborhoods, ethnic groups, or other specific groups, nor would access be denied to existing facilities. Therefore, direct adverse impacts to the character or community cohesion in the project vicinity are not anticipated since access to all adjacent properties would be maintained throughout the project area.

The No-Build Alternative would not result in displacements or direct adverse impacts to the adjacent communities; however, the projected traffic growth and increased congestion associated with the No-Build Alternative would be expected to impact adjacent communities and drivers.

5.6.1 Environmental Justice

Executive Order (EO) 12898 “Federal Actions to Address Environmental Justice [(EJ)] in Minority Populations and Low-Income Populations” requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

According to EO 12898, a person meeting any of the following criteria is considered a minority: Black: a person having origins in any of the black racial groups of Africa; Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent; American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America, and Central America, who maintains cultural identification through tribal affiliation or community recognition; Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Minority Populations can include any readily identifiable groups of minority persons living in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons, such as migrant workers or Native Americans, similarly affected by a proposed TxDOT project.

The U.S. Census Bureau classifies minority populations as Black; Hispanic or Latino; Asian or Pacific Islander; American Indian, Eskimo, or Aleut; or other non-white persons. Population, race, and ethnicity data from the 2010 US Census was obtained for the state of Texas, Bastrop County, census tracts, block groups, and census blocks within the project area (U.S. Census Bureau 2010). Of the 32 census blocks within the project area, only 16 are populated, including three census blocks with a predominantly minority population. Within these census blocks, there would be one residential displacement, five commercial displacements, and seven other displacements. The proposed project would also result in noise impacts to some adjacent receivers within the census blocks with predominantly minority populations and within census blocks with non-minority populations. Although the project area does contain minority populations, impacts are not expected to be disproportionately high or adverse due to the fact that displacements and noise impacts also take place outside of these census blocks. The improved mobility from the proposed project is expected to benefit the entire community, including minority populations.

The *Community Impacts Assessment Technical Report* also includes data from the 2012-2016 US Census American Community Survey (ACS) regarding median household income within the project area. A low-income person is defined as a person whose median household income is at or below the Department of Health and Human Services poverty guidelines for a family of four for the current year. The poverty level in 2019 in the 48 contiguous states and the District of Columbia is \$25,750 for a household of four (DHHS 2019). Per the ACS, none of the block groups in the project area contain a low-income population.

For additional information, see the *Community Impacts Assessment Technical Report Form* on file at the TxDOT Austin District office.

5.6.2 Limited English Proficiency

EO 13166, “Improving Access to Service for Persons with Limited English Proficiency [(LEP)],” requires federal agencies to examine the services they provide, identify any need for services to those with LEP, and develop and implement a system to provide those services so that LEP persons can have meaningful access to them. The EO also requires federal agencies to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally assisted programs and activities may violate the prohibition under Title VI of the Civil Rights Restoration Act of 1987.

To determine if LEP populations may be affected by the proposed project, census data was collected from the 2012-2016 US Census ACS, defined as populations who speak a language other than English and who speak English “less than very well.” The data are provided in the *Community Impacts Assessment Technical Report Form*. The percentage of Spanish-speaking LEP populations ranged from 5.21 percent in Block Group 2 to 0.65 percent in Block Group 3. The percentage of other Indo-European Languages LEP populations in the project area were reported as 0.65 percent in Block Group 2 and 4.41 percent in Block Group 3. There were no LEP populations speaking Asian and Pacific Island languages or other languages identified within the project area. No LEP populations were listed in Block Group 4.

A public meeting was held on November 15, 2018, and a public hearing was held on April 30, 2019. In order to comply with EO 13166, public meeting and public hearing announcements were published in English in the *Bastrop Advertiser* and in Spanish in *El Mundo*, and letters were sent to adjacent property owners providing the opportunity for individuals to request language interpreters. Meeting and hearing handouts and comment cards were also provided in English and Spanish. Therefore, TxDOT has complied with EO 13166 by offering to meet the needs of persons requiring special communication or accommodations in all public involvement activities and notices.

The No-Build Alternative would have no direct impact on EJ or LEP populations.

5.7 Visual/Aesthetics Impacts

Using the Federal Highway Administration (FHWA) *Visual Impact Assessment for Highway Projects* guidance (FHWA-HI-88-054), an analysis of the potential visual impact of the proposed project was conducted. Visual impacts are defined as a change in the aesthetic value resulting from the introduction of modifications to the landscape. The project vicinity has been evaluated in terms of project impacts on visual character and scenic (visual) quality.

In an effort to determine the visual resource effects of the proposed project, an analysis of the landscape components affected by the proposed project was conducted. The regional landscape in

the project area is relatively rural. No substantial changes to the vegetation surrounding the roadway corridor are anticipated as a direct result of the proposed project.

In order to determine the scale and dominance of the proposed project, the schematic was used to evaluate changes in elevation and potential impacts to the current viewshed in the project vicinity. The scale and dominance of the proposed structures were determined to be compatible with the project surroundings due in large part to the fact that a distinct transportation corridor within the project viewshed has already been established by the existing SH 71 roadway.

Due to the aesthetic compatibility of the proposed improvements to the existing transportation features, the construction of a visual barrier was determined to not be necessary.

The No-Build Alternative would not result in visual impacts.

5.8 Cultural Resources

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

After submittal of the Archeological Background Study and Historic Resources Survey Report, the proposed project design was modified to what is currently described in **Section 2.2**. The new study areas were reviewed and it was determined there would be no new impacts to archeological or historic resources that were not already discussed in the previously submitted reports. A ROW Change Memo for each resource describing the change in project design and explaining that no additional work is required is on file at the TxDOT Austin District Office.

5.8.1 Archeological Resources

A background review was conducted of area topographic, soils, and geology maps, as well as National Register of Historic Places (NRHP) properties, State Antiquities Landmarks (SALs), Official Texas Historical Markers, Recorded Texas Historic Landmarks, cemeteries, other previously recorded archeological sites, and previous archeological surveys via the THC restricted-access Online Archeological Sites Atlas, the National Park Service's El Camino Real de Los Tejas National Historic Trail GIS viewer, and United States Geological Survey 7.5-minute topographical maps (1950 and 1956) and aerial photography (1995) of the area. Based on the results of the *Archeological Background Study*, dated December 2018, it was recommended that archeological surveys be performed for portions of the Area of Potential Effects (APE) that coincide with proposed new ROW to

identify potential impacts to archeological resources from the Build Alternative. In December 2018, TxDOT archeologists concurred with this recommendation. Archeological surveys would be conducted prior to project construction. The Archeological Background Study Form is on file at the TxDOT Austin District Office.

The No-Build Alternative would not impact archeological resources.

5.8.2 Historic Resources

According to a review of the THC Texas Historic Sites Atlas, there are no previously identified National Historic Landmarks (NHLs), properties listed on the NRHP, standing structure SALs, or Recorded Texas Historic Landmarks (RTHLs) within the APE or 1,300-foot study area. However, the El Camino Real de Los Tejas National Historic Trail, which was designated by the US Congress in 2004, crosses the proposed project's APE.

In November 2018, a reconnaissance-level historic resources survey (HRSR) of the proposed project was completed. No standing structures associated with the El Camino Real de Los Tejas National Historic Trail were identified within the APE. During the survey, a total of 11 historic-age resources on nine properties were inventoried and were evaluated for their potential NRHP-eligibility. It was recommended that none of the historic-age resources within the historic APE are eligible for listing on the NRHP. In January 2019, TxDOT ENV historians approved the HRSR and completed the Section 106 process. The proposed project would pose no Section 106 impacts to standing structure historic properties. **Figure 2** in **Appendix F** shows the results of the search for historic properties within the project APE and study area. The HRSR and other historic reports conducted for this project are on file at the TxDOT Austin District Office.

The No-Build Alternative would not result in impacts to historic resources.

5.9 DOT Act Section 4(f), Land and Water Conservation Fund (LWCF) Act Section 6(f), and Parks and Wildlife Code (PWC) Chapter 26

The U.S. Department of Transportation Act (DOT) Section 4(f) protects publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, and any land from an historic site of national, state, or local significance. The Land and Water Conservation Fund (LWCF) Act Section 6(f) protects parks and recreation areas improved by Land and Water Conservation Funds. Texas state law contains a statute that is analogous to Section 4(f), Chapter 26 of the Parks and Wildlife Code. Chapter 26 applies to any project that requires the use or taking of any public land designated and used prior to the arrangement of the project as a park, recreation area, scientific area, wildlife refuge, or historic site.

There are no Section 4(f) or Section 6(f) properties present in the project area; therefore, coordination regarding Section 4(f), Section 6(f), or Chapter 26 properties is not required for this project.

The No-Build Alternative would not impact Section 4(f), Section 6(f), or Chapter 26 resources.

5.10 Water Resources

The *Water Resources Technical Report*, submitted to the TxDOT Austin District in November 2018, determined that four waters of the U.S., including three streams and one wetland considered to be a special aquatic site, would be impacted by the proposed project. These waters of the U.S. are discussed in greater detail below.

The No-Build Alternative would not impact water resources.

5.10.1 Clean Water Act Section 404

As detailed in the *Water Resources Technical Report*, streams and wetlands that are expected to be jurisdictional waters of the U.S. subject to regulation under Section 404 of the Clean Water Act (CWA) were identified and delineated at four single and complete crossings, which are listed below in **Table 3** as Crossings 1 through 4. **Figure 3** in **Appendix F** shows the locations of the crossings and **Figures 4.1** through **4.5** shows the boundaries of water features present in the project area at each crossing. **Table 3** summarizes the estimated impacts and anticipated Section 404 permits needed at each crossing. Additionally, one scour feature that is not expected to be a jurisdictional water of the U.S. was identified (**Figure 4.1**).

Table 3. Anticipated Impacts to Waters of the U.S.

Crossing No.	Existing Structure	Proposed Work	Anticipated Permanent Loss ¹		Anticipated Temporary Impacts ^{1,2}		Anticipated Section 404 Permit
			Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	
Crossing 1	4'x2' RCB culvert	Remove and replace with 2-box 5'x2' RCB culvert	0.01 (108 LF)	<0.01	0.01 (117 LF)	<0.01	NWP 14 with PCN
Crossing 2	Two bridges; 5-CMP culvert	Removal and replacement or extension of the two existing bridges and construction of two additional bridges; channel modification and stabilization with concrete riprap. Replace driveway culvert with 8-box 5'x5' RCB culvert	0.08 (177 LF)	N/A	0.20 (355 LF)	N/A	NWP 14 without PCN
Crossing 3	2-box 5'x4' RCB culvert	Remove and replace with 4-box 11'x6' RCB culvert to remain	0.02 (99 LF)	N/A	0.03 (188 LF)	N/A	NWP 14 without PCN

Table 3. Anticipated Impacts to Waters of the U.S.

Crossing No.	Existing Structure	Proposed Work	Anticipated Permanent Loss ¹		Anticipated Temporary Impacts ^{1,2}		Anticipated Section 404 Permit
			Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	
Crossing 4	6'x3' RCB culvert	None; existing 6'x3' RCB culvert to remain	None	None	None	None	None

¹ Includes area within existing right-of-way and estimated area within proposed right-of-way

² Anticipated temporary impacts assumes all waters in the project area that are not permanently impacted may be temporarily impacted.

Note: Impacts were estimated based on preliminary design.

Based on the estimated permanent impacts, the project is expected to be authorized by Nationwide Permit (NWP) 14 Linear Transportation Projects, with a Pre-construction Notification (PCN) being required because the proposed work at Crossing 1 would result in discharge into Wetland 1, a special aquatic site.

5.10.2 Clean Water Act Section 401

Since the proposed construction within waters of the U.S. is expected to be authorized by NWP 14, Section 401 compliance would entail the implementation of at least one approved best management practice (BMP) from each of the three categories identified in the Texas Commission of Environmental Quality’s (TCEQ) 401 Water Quality Certification Conditions for Nationwide Permits. The categories include erosion control, sedimentation control, and post-construction total suspended solids (TSS) control. With the implementation of temporary and permanent BMPs at these crossings, no long-term impacts to water quality in the area are anticipated, and no coordination with TCEQ would be required.

5.10.3 Executive Order 11990 Wetlands

EO 11990, Protection of Wetlands, requires federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands. The EO also prohibits new construction in wetlands unless (1) there is no practicable alternative to such construction, and (2) the project includes all practicable measures minimize harm to wetlands. One wetland (Wetland 1, **Figure 4.2**) would be impacted by the proposed project. Alternatives were reviewed as required by EO 11990, and no practicable alternatives to discharges in Wetland 1 were identified.

The No-Build Alternative would not impact any wetlands; therefore, EO 11990 would not apply.

5.10.4 Rivers and Harbors Act

No water features within the project area are navigable waters under the River and Harbors Act; therefore, Sections 9 and 10 of the Rivers and Harbors Act do not apply.

5.10.5 Clean Water Act Section 303(d)

Runoff from the project area would not discharge directly into a Section 303(d) listed threatened or impaired water, or into a stream within 5 miles upstream of a Section 303(d) listed threatened or impaired water. Therefore, the proposed action is not expected to contribute to a constituent of concern to an impaired water body. The most recent 2014 Texas Integrated Report Index of Water Quality Impairments was utilized in this assessment (TCEQ 2014).

5.10.6 Clean Water Act Section 402

The proposed project would include 5 or more acres of earth disturbance. Since Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) authorization and compliance (and the associated documentation) occur outside of the environmental clearance process, compliance is ensured by the policies and procedures that govern the design and construction phases of the project. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a Storm Water Pollution Prevention Plan (SW3P) be included in the plans of all projects that disturb one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (Notice of Intent or site notice) be completed, posted, and submitted, when required by the CGP, to the TCEQ and the Municipal Separate Storm Sewer System (MS4) operator. It also requires that projects be inspected to ensure compliance with the CGP.

The PS&E Preparation Manual requires that all projects include Standards Specification Item 506 (Temporary Erosion, Sedimentation, and Environmental Controls), and the “Required Specifications Checklists” require Special Provision 506-003 on all projects that need authorization under the CGP. These documents require the project contractor to comply with the CGP and SW3P, and to complete the appropriate authorization documents.

5.10.7 Floodplains

Executive Order 11988 on Floodplain Management requires federal agencies to avoid actions, to the extent practicable, long and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. A portion of the project is located within a Federal Emergency Management Agency (FEMA)-designated 100-year floodplain (**Figure 3**). This project is subject to and will comply with federal Executive Order 11988 on Floodplain Management. The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department’s Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design Manual ensures that this project will not result in a “significant encroachment” as defined by FHWA’s rules implementing Executive Order 11988 at 23 CFR 650.105(q).

5.10.8 Wild and Scenic Rivers

This project is not located in a county that contains resources regulated under the Wild and Scenic Rivers Act. This project is not along and does not affect any wild or scenic river; therefore, the Wild and Scenic Rivers Act is not applicable.

5.10.9 Coastal Barrier Resources

The project is not located within a designated Coastal Barrier Resources Act map unit. Coordination with the United States Fish and Wildlife Service (USFWS) is not required.

5.10.10 Coastal Zone Management

The project is not located within a Texas Coastal Management Plan boundary. Therefore, a consistency determination is not required.

5.10.11 Edwards Aquifer

The proposed project is not located in a county regulated by the Edwards Aquifer Rules.

5.10.12 International Boundary and Water Commission

The proposed project would not cross or encroach upon the floodway of the US Section, International Boundary Water Commission (USIBWC) ROW or a USIBWC flood control project; therefore, coordination with the USIBWC is not required.

5.10.13 Drinking Water Systems

A review of TCEQ and the TWDB records revealed one water well (State Well Number 5853804) within the proposed project area (TWDB 2018b) (**Figure 5** in **Appendix F**). Field investigations and site surveys of the proposed project area did not identify water wells or source water protection areas within the project area.

5.11 Biological Resources

The *Biological Evaluation Form* and *Tier 1 Site Assessment Form* and associated attachments, dated December 2018 (on file at the TxDOT Austin District), describe the Texas Parks and Wildlife Department (TPWD) Ecological Mapping System of Texas (EMST) (**Figures 6.1** through **6.4** in **Appendix F**) and observed, or field-verified, vegetation (**Figures 6.1** through **6.4** in **Appendix F**). The forms also list the federal and state-listed threatened, endangered, and candidate species, as well as those considered species of greatest conservation need (SGCN) by the state and provides an assessment of their habitat requirements and the potential impacts of the proposed project. Provided below is a summary of these findings.

5.11.1 Texas Parks and Wildlife Coordination

According to the Threshold Table Programmatic Agreement (PA) for the Memorandum of Understanding (MOU) between TxDOT and TPWD, the proposed project would exceed the impact coordination threshold for Post Oak Savanna and Riparian MOU Vegetation (TxDOT 2017a). The

proposed project also provides suitable habitat for four SGCN plant species that do not have specified BMPs in the current BMP PA (revised 2017) (TxDOT 2017b). Therefore, coordination with TPWD is required. Coordination with TPWD was completed on February 4, 2019 (**Appendix G**).

5.11.2 Impacts on Vegetation

The project area occurs within the East Central Texas Plains ecoregion (Griffith et al. 2007). This ecoregion, also known as the Post Oak Savanna region, is generally characterized by belts of oak forest crossing strips of prairie grassland. The landscape of the region is gently rolling to hilly, and elevations range from 300 to 800 feet above sea level. According to the EMST vegetation mapping system, the project area is mapped as eight different vegetation types. Based on site visits conducted in August 2018 by qualified biologists, field-verified vegetation types present in the project area include Central Texas: Floodplain Deciduous Shrubland, Central Texas: Riparian Herbaceous Vegetation, Post Oak Savanna: Post Oak Motte and Woodland, Post Oak Savanna: Post Oak/Redcedar Motte and Woodland, Post Oak Savanna: Savanna Grassland, Open Water, and Urban High and Low Intensity, as described in the TPWD's *Draft Descriptions of Systems, Mapping Subsystems, and Vegetation Types for Phase III*. The following paragraphs describe the vegetation within the project area. Photos of the vegetation located within the project area, as well as TPWD EMST vegetation maps and field-verified vegetation maps are located in the *Biological Evaluation Form* and *Tier 1 Site Assessment* dated December 2018.

Central Texas: Floodplain Deciduous Shrubland

This vegetation community is characterized by shrublands of the floodplains of the region that are dominated by deciduous shrubs such as possumhaw (*Ilex decidua*), honey mesquite (*Prosopis glandulosa*), black willow (*Salix nigra*), roughleaf dogwood (*Cornus drummondii*), and/or common buttonbush (*Cephalanthus occidentalis*). This vegetation type may also include areas with sparse woodlands composed of typical deciduous overstory species as described above, or sites in early succession dominated by species such as honey mesquite, huisache (*Acacia farnesiana*), sugar hackberry (*Celtis laevigata*), or Chinese tallow (*Triadica sebifera*) (see **Figures 7.1** through **7.4** in **Appendix F**). Approximately 0.44 acre of this vegetation community occurs within the project area.

Central Texas: Riparian Herbaceous Vegetation

This vegetation community is characterized by riparian sites lacking overstory or shrub canopy but retaining herbaceous cover (see **Figures 7.1** through **7.4** in **Appendix F**). Some sites may be dominated by species such as little bluestem (*Schizachyrium scoparium*) or Indiangrass (*Sorghastrum nutans*), that are more commonly encountered in surrounding uplands. Eastern gamagrass (*Tripsacum dactyloides*) or switchgrass (*Panicum virgatum*) may dominate some lowland areas. Other sites may be dominated by non-natives like giant reed (*Arundo donax*), King Ranch bluestem (*Bothriochloa ischaemum*), or Bermudagrass. Approximately 0.37 acre of this vegetation community occurs within the project area.

Post Oak Savanna: Post Oak Motte and Woodland

This vegetation type generally represents the deciduous woodland component of the East Central Texas Plains ecoregion (see **Figures 7.1** through **7.4** in **Appendix F**). The typical occurrence is

dominated by post oak (*Quercus stellata*), with blackjack oak (*Quercus marilandica*) and/or plateau live oak (*Quercus fusiformis*) (particularly in the south) also present. Black hickory (*Carya texana*) may be a significant component of the overstory, particularly on deep sands. Depending on site history and edaphic conditions, other species may be present in the overstory or may be better represented as shrubs. Such species as sugar hackberry, honey mesquite, water oak (*Quercus nigra*), eastern persimmon (*Diospyros virginiana*), eastern redcedar (*Juniperus virginiana*), winged elm (*Ulmus alata*), and cedar elm (*Ulmus crassifolia*) are often overstory components, and are often stunted (less than 12 meters in height). The shrub layer includes species such as American beautyberry (*Callicarpa americana*), possumhaw, yaupon (*Ilex vomitoria*), gum bumelia (*Sideroxylon lanuginosum*), saw greenbriar (*Smilax bona-nox*), coral-berry (*Symphoricarpos orbiculatus*), farkleberry (*Vaccinium arboreum*), and Hercules' club (*Zanthoxylum clava-herculis*). Herbaceous components are often represented by components of the surrounding prairies, primarily little bluestem, but also Indiangrass, big bluestem (*Andropogon gerardii*), and, to the south and east, brownseed paspalum (*Paspalum plicatulum*). Other grasses may include silver bluestem (*Bothriochloa laguroides* ssp. *torreyana*), Canada wildrye (*Elymus canadensis*), switchgrass, Florida paspalum (*Paspalum floridanum*), thin paspalum (*Paspalum setaceum*), tall dropseed (*Sporobolus compositus*), and purpletop (*Tridens flavus*). Approximately 8.36 acres of this vegetation community occur within the project area.

Post Oak Savanna: Post Oak/Redcedar Motte and Woodland

This vegetation community is characterized by woodland dominated by post oak and/or plateau live oak, with eastern redcedar as either a co-dominant of the overstory or as a conspicuous dominant of the shrub layer (see **Figures 7.1** through **7.4** in **Appendix F**). This vegetation type is particularly well-represented on disturbed sites, particularly where fire is excluded. Dynamics described in Ecological Site Descriptions for Claypan Savannah, Sandy Loam, and Sandy sites in the Post Oak Savanna include this vegetation type in the Oak Scrub - Shrubland Community or the Post Oak - Elm Woodland Community. These communities result from the lack of fire and the presence of heavy continuous grazing. This vegetation type may sometimes be incorrectly mapped as Post Oak / Yaupon Motte and Woodland. The shrub layer may be dominated by eastern redcedar, but yaupon may also be conspicuous. The herbaceous layer is often poorly developed, due to the closed nature of the canopy, resulting in the reduced potential for the development of fire fuels and the consequent maintenance of the redcedar dominance through lack of fire. Loblolly pine (*Pinus taeda*) may be in the overstory near the Bastrop Lost Pines ecoregion. Approximately 1.58 acres of this vegetation community occur within the project area.

Post Oak Savanna: Savanna Grassland

This vegetation type represents the herbaceous expression of the overall system, which is a mosaic of woody and herbaceous cover types as suggested by reference to a savanna (see **Figures 7.1** through **7.4** in **Appendix F**). These grasslands are often dominated by mid- and tallgrass species often present in the understory of woody communities in the region. Dominant species include little bluestem, Indiangrass, and switchgrass. Other grasses present include big bluestem, silver bluestem, brownseed paspalum (to the south), Texas wintergrass (*Nassella leucotricha*), and sand dropseed (*Sporobolus cryptandrus*). Non-native grass species such as King Ranch bluestem, bahiagrass (*Paspalum*

notatum), kleingrass (*Panicum coloratum*), Kleberg bluestem (*Dichanthium annulatum*), and Bermudagrass may dominate some sites. These grasslands may be difficult to differentiate in areas of transition to Blackland Prairie or Coastal Prairie. Claypan Savanna and Claypan Prairie ecoclasses may support occurrences of this vegetation type, particularly where land management practices including prescribed fire and other forms of brush management are implemented. Approximately 6.92 acres of this vegetation community occur within the project area.

Open Water

Open water consists of reservoirs, lakes, rivers, marine waters, and ephemeral ponds. Some areas may support vegetation with pioneering species such as black willow (*Salix nigra*), cottonwood (*Populus deltoides*), Chinese tallow, seepweed (*Suaeda linearis*), rushes (*Juncus* sp.), sedges (*Carex* sp.), cattails (*Typha* sp.), and spikerushes (*Eleocharis* sp.). Approximately 0.27 acre of open water occurs within the project area.

Urban High Intensity

The urban high intensity vegetation type consists of built-up areas and wide transportation corridors that are dominated by impervious cover (see **Figures 7.1** through **7.4** in **Appendix F**). Portions of the project area that extend through commercial and residential developments are characterized by exotic (nonnative) and ornamental plant species that are common to highly disturbed areas. Approximately 4.13 acres of this vegetation community occur within the project area.

Urban Low Intensity

The urban low intensity vegetation type includes areas that are built-up but not entirely covered by impervious cover and includes most of the nonindustrial areas within cities and towns (see **Figures 7.1** through **7.4** in **Appendix F**). Dominant vegetation observed in areas of maintained ROW includes Johnsongrass (*Sorghum halepense*), ragweed (*Ambrosia* spp.), Bermudagrass (*Cynodon dactylon*), and Canada goldenrod (*Solidago canadensis*). Approximately 68.23 acres of this vegetation community occur within the project area.

Table 4 provides the field-verified vegetation types identified in the proposed project area and the Ecological System Type that the vegetation types are classified as according to TPWD's *Draft Descriptions of Systems, Mapping Subsystems, and Vegetation Types for Phase III*. Based on the Crosstab of the Threshold PA for the MOU between TxDOT and TPWD (revised 2017), **Table 4** also provides the TxDOT TPWD MOU vegetation type that corresponds with each vegetation type identified in the project ROW.

Table 4. Potential Impacts to Field-verified MOU Vegetation

EMST Vegetation Type	Ecological System Type	TxDOT/TPWD MOU Vegetation Type	MOU Thresholds (acres)	Acres Within Project Area	Permanent Impacts (acres)
Central Texas: Floodplain Deciduous Shrubland	Southeastern Great Plains Floodplain Forest	Riparian	0.1	0.44	0.15
Central Texas: Riparian Herbaceous Vegetation	Southeastern Great Plains Riparian Forest			0.37	0.03
Total for Riparian MOU Vegetation				0.81	0.18
Post Oak Savanna: Post Oak Motte and Woodland	East-Central Texas Plains Post Oak Savanna and Woodland	Post Oak Savanna	2.0	8.36	3.23
Post Oak Savanna: Post Oak/Redcedar Motte and Woodland				1.58	0.11
Post Oak Savanna: Savanna Grassland				6.92	3.21
Total for Post Oak Savanna MOU Vegetation				16.86	6.55
Open Water	Open Water	Open Water	None	0.27	0.1
Total for Open Water MOU Vegetation				0.27	0.1
Urban High Intensity	Urban	Urban	None	4.13	2.25
Urban Low Intensity				68.23	25.22
Total for Urban MOU Vegetation				72.36	27.47

After submittal of the Biological Evaluation Form and Tier I Site Assessment Form, the proposed project design was modified to what is currently described in **Section 2.2**. The new study area was reviewed, and the impacted vegetation acreage was updated and is shown in this Final Environmental Assessment.

Table 4 summarizes the potential permanent impacts to vegetation in the project area. Permanent impacts are areas where vegetation would be permanently impacted due to the placement of new pavement in areas outside of the existing roadway footprint. According to the Threshold PA between TxDOT and TPWD, the coordination threshold for Post Oak Savanna MOU vegetation is 2 acres, and the coordination threshold for Riparian MOU vegetation is 0.1 acre. Since the proposed project would exceed the thresholds for both Post Oak Savanna and Riparian MOU vegetation, coordination with TPWD is required. Coordination with TPWD was completed on February 4, 2019.

5.11.3 Executive Order 13112 on Invasive Species

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

5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

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

5.11.5 Impacts to Wildlife

The East Central Texas Plains ecoregion supports at least 49 species of mammals, 23 species of amphibians, over 70 species of reptiles, and over 400 species of birds (Blair 1950, Freeman 2012). Mammals that are characteristic of the region include bobcat (*Lynx rufus*), coyote (*Canis latrans*), nine-banded armadillo (*Dasypus novemcinctus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), eastern mole (*Scalopus aquaticus*), fox squirrel (*Sciurus niger*), Baird's pocket gopher (*Geomys breviceps*), fulvous harvest mouse (*Reithrodontomys fulvescens*), northern pygmy mouse (*Baiomys taylori*), hispid cotton rat (*Sigmodon hispidus*), black-tailed jackrabbit (*Lepus californicus*), eastern cottontail (*Sylvilagus floridanus*), and striped skunk (*Mephitis mephitis*). Reptiles in the region include several turtle species, 16 lizard species and 39 snake species. Turtle species characteristic of the region include common box turtle (*Terrapene carolina*), eastern mud turtle (*Kinosternon subrubrum*), eastern snapping turtle (*Chelydra serpentina*), red-eared slider (*Trachemys scripta elegans*), spiny softshell turtle (*Apalone spinifera*), Texas cooter (*Pseudemys texana*), western box turtle (*Terrapene ornata*), and yellow mud turtle (*Kinosternon flavescens flavescens*). Common lizards in the area include green anole (*Anolis carolinensis*), Mediterranean gecko (*Hemidactylus turcicus*), skinks (*Eumeces* spp.), spiny lizards (*Sceloperus* sp.), and whiptails (*Aspidoscelis* spp.). Common snakes in the area include bullsnake (*Pituophis catenifer sayi*), common kingsnake (*Lampropeltis getula*), copperhead (*Agkistrodon contortrix*), cottonmouth (*Agkistrodon piscivorus*), eastern coachwhip (*Masticophis flagellum*), eastern diamondback rattlesnake (*Crotalus adamanteus*), eastern racer (*Coluber constrictor*), ribbon snake (*Thamnophis sauritus*), rat snakes (*Elaphe* spp.), Texas coral snake (*Micrurus fulvius tener*), timber rattlesnake (*Crotalus horridus*), and water snakes (*Nerodia* spp.). Amphibians that are characteristic of the region include American bullfrog (*Rana catesbeiana*), American green tree frog (*Hyla cinerea*), Couch's spadefoot toad (*Scaphiopus couchii*), eastern spadefoot toad (*Scaphiopus holbrookii*), gulf coast toad (*Incilius valliceps*), lesser siren (*Siren intermedia*), northern leopard frog (*Rana pipiens*), small-mouthed salamander (*Ambystoma texanum*), southern cricket frog (*Acris gryllus*), Strecker's chorus frog (*Pseudacris streckeri*), tiger salamander (*Ambystoma tigrinum*), western spadefoot toad (*Scaphiopus hammondi*), and Woodhouse's toad (*Anaxyrus woodhousii*). Common year-round resident bird species in the study area include American coot (*Fulica americana*), black-bellied whistling duck (*Dendrocygna autumnalis*), eastern meadowlark (*Sturnella magna*), eastern phoebe (*Sayornis phoebe*), great-tailed grackle (*Quiscalus mexicanus*), inca dove (*Columbina inca*), killdeer (*Charadrius vociferus*), ladder-backed woodpecker (*Picoides scalaris*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), red-bellied woodpecker (*Melanerpes carolinus*), and white-winged dove (*Zenaida asiatica*). Common migrant/summer resident bird species in the study area include barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), common nighthawk (*Chordeiles minor*), dickcissel (*Spiza americana*), eastern kingbird (*Tyrannus tyrannus*), great crested flycatcher (*Myiarchus crinitus*), indigo

bunting (*Passerina cyanea*), orchard oriole (*Icterus spurius*), scissor-tailed flycatcher (*Tyrannus forficatus*), summer tanager (*Piranga rubra*), and yellow-billed cuckoo (*Coccyzus americanus*). Common migrant/winter resident bird species include American white pelican (*Pelecanus erythrorhynchos*), orange-crowned warbler (*Oreothlypis celata*), savannah sparrow (*Passerculus sandwichensis*), yellow-rumped warbler (*Setophaga coronata*), and many various species of ducks. Other common migrant species in the region include broad-winged hawk (*Buteo platypterus*), Mississippi kite (*Ictinia mississippiensis*), scarlet tanager (*Piranga olivacea*), Wilson's phalarope (*Phalaropus tricolor*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). These species may occur within undeveloped portions of the proposed ROW, and therefore may be impacted by the proposed project.

The following sections provide a summary of potential impacts to wildlife associated with the Build Alternative. Under the No-Build Alternative, the proposed project would have no impact on existing wildlife and habitat in the project area.

5.11.6 Migratory Bird Protections

The Migratory Bird Treaty Act (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. This project will comply with applicable provisions of the MBTA and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federal or state approved options. In addition, it is TxDOT's policy to, where appropriate and practicable:

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

Swallow nests were observed during the site survey, but the nests were not active at the time of the field investigation. While no impacts to migratory birds are expected, TxDOT will take all appropriate actions to prevent the take of migratory birds, their active nests, eggs, or young should they be discovered on the project site. Direction to contractors is provided on the standard Environmental Permits, Issues, and Commitments (EPIC) sheet.

5.11.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1958 requires that federal agencies obtain comments from USFWS and TPWD. This coordination is required whenever a project involves impounding, diverting, or deepening a stream channel or other body of water. However, because the proposed work would be authorized under a NWP, no coordination under FWCA is required.

5.11.8 Bald and Golden Eagle Protection Act of 2007

Within the United States or anywhere within its jurisdiction, bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are protected by the Bald and Golden Eagle Protection Act of

2007. No eagles or potential eagle nests were observed in or adjacent to the project area; therefore, the project does not have the potential to impact bald or golden eagles.

5.11.9 Magnuson-Stevens Fishery Conservation Management Act

The proposed project is not located within a coastal county; therefore, coordination with the National Magnuson-Stevens Fishery Service is not required.

5.11.10 Marine Mammal Protection Act

The proposed project does not contain suitable habitat for marine mammals. Coordination with the National Marine Fisheries Service is not required.

5.11.11 Threatened, Endangered, and Candidate Species

A review of the threatened and endangered species lists for Bastrop County, Texas, maintained by the USFWS and the TPWD, identified federal and state-listed threatened, endangered, and candidate species, as well as species considered rare by the state (USFWS 2018, TPWD 2018a). The *Biological Evaluation Form* dated December 2018 lists these species, describes their habitat requirements, and identifies whether habitat is present in the project area and the potential impacts of the project.

The Texas Natural Diversity Database (TXNDD) was reviewed on August 9, 2018, to assess the potential for rare, threatened, or endangered species to occur within 10 miles of the proposed project limits. Four Elements of Occurrence have been recorded within 1.5 miles of the project area (TPWD 2018b). These Elements of Occurrence records include two records of Texas fescue (*Festuca versuta*) and two records of Alfisol Coastal Prairie (*Schizachyrium scoparium* - *Paspalum plicatulum* - *Sorghastrum nutans* - *Dichanthelium oligosanthes* - *Paspalum setaceum* - *Symphotrichum pratense* Alfisol Grassland). There are also no managed areas within 1.5 miles of the project area.

Desktop analysis and field investigations revealed that no suitable habitat exists within the project area for federally listed threatened or endangered species or federal candidate species. However, based on the presence of woodland and grassland habitat within the project area, potential habitat does exist for one state-listed threatened species, the timber rattlesnake, and eight SGCN: western burrowing owl (*Athene cunicularia hypugaea*), cave myotis bat (*Myotis velifer*), plains spotted skunk (*Spilogale putorius interrupta*), Texas garter snake (*Thamnophis sirtalis annectens*), sandhill woollywhite (*Hymenopappus carrizoanus*), Texas fescue, Texas peachbush (*Prunus texana*), and Texas sandmint (*Rhododon ciliatus*). Although much of the project area contains commercial and residential development, there are several patches of native vegetation capable of supporting these species.

For state-listed species and SGCN species, BMPs would be in place to avoid impacts to species, where possible. Contractors would be advised of potential occurrence in the project area, and to avoid harming the species if encountered. The No-Build Alternative would not result in impacts to existing vegetation or wildlife habitat in the project area.

5.12 Air Quality

5.12.1 Transportation Conformity

The project is located in an area in attainment or unclassifiable for all national ambient air quality standards (NAAQS); therefore, the transportation conformity rules do not apply. Copies of the UTP, TIP, and STIP pages are included in **Appendix E**.

5.12.2 Project-level Hot-spot Analysis Requirements

The project is not located within a carbon monoxide (CO) or particulate matter (PM) nonattainment or maintenance area; therefore, a project level hot-spot analysis is not required.

5.12.3 Carbon Monoxide Traffic Air Quality Analysis

Generally, projects such as the proposed action are considered exempt from a transportation air quality analysis (TAQA) because they are intended to enhance traffic safety and improve traffic flow. The proposed action would not add capacity to an existing facility. Current and future emissions should continue to follow existing trends not being affected by this project. Due to the nature of this project, further carbon monoxide analysis was not required.

5.12.4 Mobile Source Air Toxics Analysis

The purpose of this project is to improve mobility and reduce congestion along SH 71 at FM 1209 by constructing a grade separation. This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic (MSAT) concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause a meaningful increase in MSAT impacts of the project from that of the No-Build alternative.

Moreover, Environmental Protection Agency (EPA) regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's analysis of national trends with EPA's MOVES2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 0250 while vehicle-miles of travel are projected to increase by over 45 percent (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016 - http://www.fhwa.dot.gov/environmental/air_quality/air_toxics/policy_and_guidance/msat/index.cfm). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

5.12.5 Congestion Management Process (CMP)

This project is within an attainment or unclassifiable area for ozone and CO; therefore, a project-level CMP analysis is not required.

5.12.6 Construction-related Emissions Reduction Strategies

During the construction phase of this project, temporary increases in PM and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust

from site preparation, and the primary construction-related emissions of MSAT are diesel particulate matter from diesel powered construction equipment and vehicles.

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

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

5.13 Hazardous Materials

An initial site assessment (ISA) was conducted to identify potential hazardous materials within the proposed project area. The ISA consisted of reviewing project design and ROW requirements, existing and previous land use, a site survey, and federal and state regulatory databases and files. A copy of the *Hazardous Materials ISA Report* dated February 2019 and is on file at the TxDOT Austin District Office.

During preliminary investigations, USGS topographic maps, current and past aerial imagery, the project schematic, and a bridge layout plan were reviewed. The project schematic indicated the proposed improvements would acquire ROW from or displace three auto shops and a salvage yard. No other hazardous materials concerns were identified. Additional information would be needed to determine if there would be any potential hazardous materials concerns. Coordination with property owners would be conducted as needed.

During the site survey, multiple aboveground storage tanks (ASTs), a water monitoring well at the Sunny Food Mart/Phillips 66 gas station, patches of dead vegetation at the Sunny Food Mart/Phillips 66 gas station, electric transformers, a 55-gallon drum behind the Hunan Tiger Chinese and Vietnamese Restaurant, the Cedar Creek Dry Cleaners, septic systems, piles of metal, stacks of rusted drum brakes, stacks of vehicle tires, and signs for a gas pipeline were observed along the project corridor. The proposed improvements would displace the Cedar Creek Dry Cleaners. Coordination with property owners would be conducted as needed.

The Railroad Commission of Texas (RRC) Public Geographic Information System (GIS) viewer identified six liquid petroleum gas (LPG) sites along the project corridor that the project would require ROW from or would displace. Coordination with property owners would be conducted as needed. All 14 LPG sites identified by the RRC Public GIS Viewer were considered to have a low to no hazardous materials impact on the proposed project due to distance or the nature of the LPG site. According to the RRC Public GIS viewer, there is a jet fuel pipeline that runs along the middle and north side of the project area. The RRC could not confirm or deny the existence of this pipeline. However, after utility

investigations, it was confirmed that a permit was approved for this pipeline, but the pipeline has not been installed. Therefore, there are no pipeline concerns.

A database search for potential hazardous materials was conducted in August 2018 in accordance with the American Society of Testing and Materials (ASTM) 1527 standards. A copy of the GeoSearch Database Radius Report is included as an appendix to the *Hazardous Materials ISA Report* dated February 2019 and is on file at the TxDOT Austin District Office. The 2018 GeoSearch Database Radius Report identified seven petroleum storage tank (PST) sites within the existing and/or proposed ROW (project ROW), or adjacent to the project ROW. One PST site (MAP ID #1) would be displaced by the proposed improvements, while ROW would be required from two of the listed PST sites (MAP IDs #2 and #4). One PST site (MAP ID #3) was listed as within the existing ROW. MAP ID #2 - the Sunny Food Mart/Phillips 66 gas station is also listed as a leaking petroleum storage tank (LPST) site with soil contamination reported. Additional information is needed to determine if there would be any potential hazardous materials concerns with these sites. Three other PST sites (MAP IDs #9, #10, and #11) and one inactive industrial hazardous waste corrective action (IHWCA) site (MAP ID #14) were considered to have low to no impact on the proposed project due to distance and/or no other spills or violations reported for these sites. These sites are discussed in more detail in the *Hazardous Materials Initial Site Assessment (ISA)* dated February 2019 on file at the TxDOT Austin District Office.

Any unanticipated hazardous material and/or petroleum contamination encountered during construction of the proposed project would be handled according to applicable federal and state regulations per TxDOT Standard Specifications.

The No-Build Alternative would not result in hazardous materials impacts.

5.14 Traffic Noise

A traffic noise analysis was conducted in accordance with TxDOT’s (FHWA-approved) Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011). Traffic Noise Model version 2.5 (TNM 2.5) was utilized in the assessment.

Existing and predicted traffic noise levels were modeled at 23 representative receiver locations (**Figures 8.1 through 8.4 in Appendix F**), including residences and an outdoor activity area. The analysis revealed that the project would result in traffic noise impacts to five receivers (**Table 5**).

Table 5. Traffic Noise Levels dB(A) Leq

Representative Receiver	NAC Category	NAC Level	Existing	Predicted 2040	Change (+/-)	Noise Impact
R1 Residence	B	67	60	63	+3	No
R2 Residence	B	67	57	59	+2	No
R3 Residence	B	67	57	57	-	No
R4 Residence	B	67	61	63	+2	No
R5 Residence	B	67	58	60	+2	No

Table 5. Traffic Noise Levels dB(A) Leq

Representative Receiver	NAC Category	NAC Level	Existing	Predicted 2040	Change (+/-)	Noise Impact
R6 Church (playground)	C	67	59	63	+4	No
R7 Residence	B	67	61	64	+3	No
R8 Residence	B	67	62	66	+4	Yes
R9 Residence	B	67	59	60	+1	No
R10 Residence	B	67	65	66	+1	Yes
R11 Residence	B	67	64	63	-1	No
R12 Residence	B	67	64	63	-1	No
R13 Residence	B	67	64	65	+1	No
R14 Residence	B	67	64	64	-	No
R15 Residence	B	67	65	67	+2	Yes
R16 Residence	B	67	61	64	+3	No
R17 Residence	B	67	58	63	+5	No
R18 Residence	B	67	61	65	+4	No
R19 Residence	B	67	63	67	+4	Yes
R20 Residence	B	67	58	62	+4	No
R21 Residence	B	67	63	66	+3	Yes
R22 Residence	B	67	61	63	+2	No
R23 Residence	B	67	61	63	+2	No

Noise barriers were evaluated for each of the impacted receiver locations. A noise barrier would not be feasible and reasonable for any of the impacted receiver locations and, therefore, is not proposed for incorporation into the project. Additional details about the noise analysis can be found in the *Traffic Noise Analysis Technical Report*, dated February 2019, on file at the TxDOT Austin District Office.

To avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2040) noise impact contours (Table 6).

Table 6. Predicted Noise Impact Contours

Land Use	Impact Contour	Distance from ROW
NAC Category B & C	66 dB(A)	100 feet
NAC Category E	71 dB(A)	Inside ROW

Source: SH 71 at FM 1209 Noise Technical Report dated February 2019

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

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

The No-Build Alternative may maintain existing traffic noise levels or noise levels may change as traffic volumes increase with time.

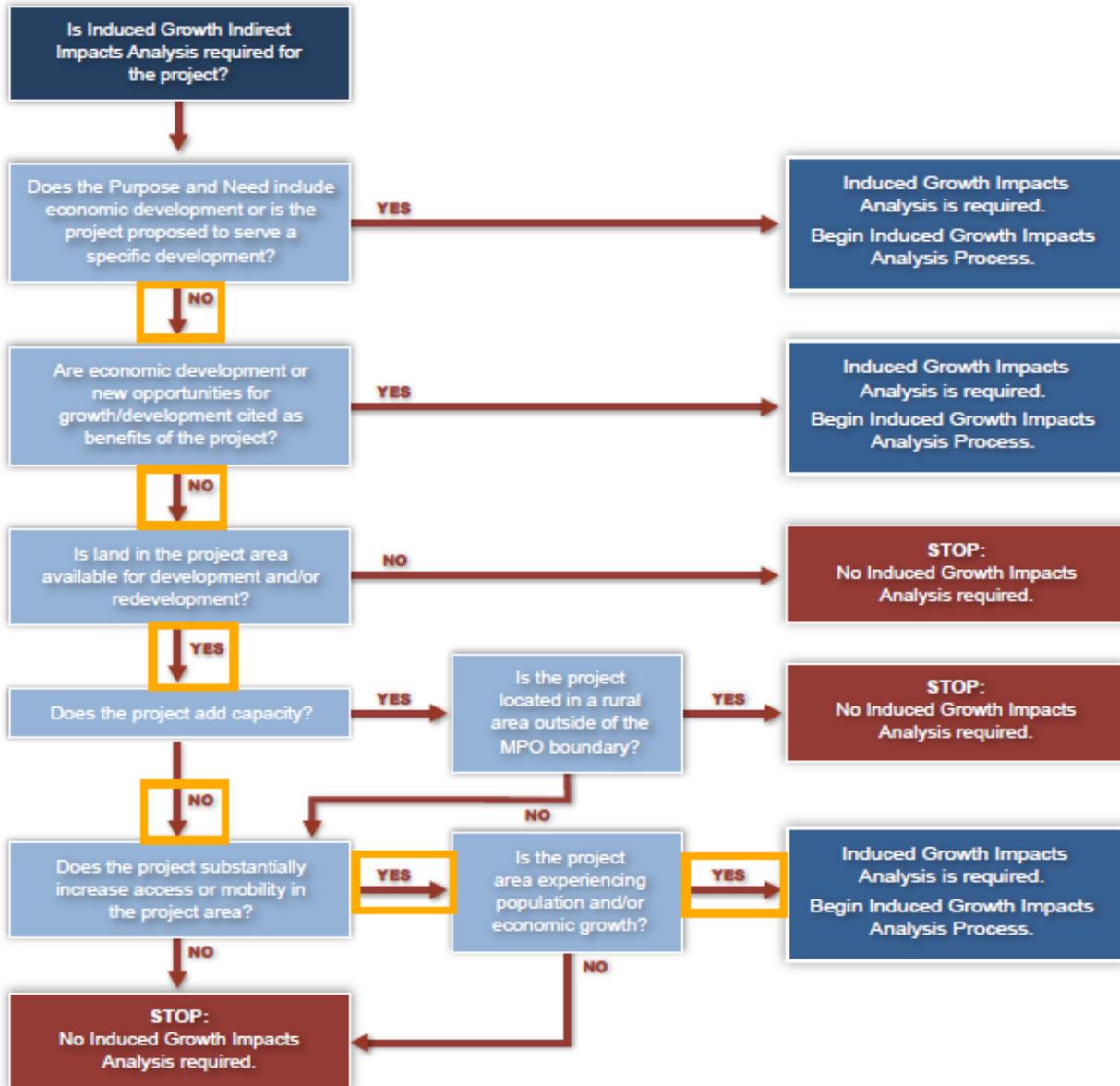
5.15 Induced Growth

By utilizing TxDOT's *Induced Growth Indirect Impacts Decision Tree* (TxDOT 2014a), it was determined that an induced growth impacts analysis was required because the proposed project could substantially increase mobility in the project area and the project area is experiencing population growth (**Insert 2**). Indirect impacts are defined as those caused by an action and are later in time or farther removed in distance, but still reasonably foreseeable.

Insert 2. Induced Growth Indirect Impacts Decision Tree



Induced Growth Indirect Impacts Decision Tree



An indirect impacts analysis was conducted using TxDOT's *Indirect Impacts Analysis Guidance* (TxDOT 2016) to determine if the proposed project would induce growth in the project area. Due to the mix of suburban and rural land use within the project area and the scope of the proposed project activities, a combination of the planning judgement and cartographic methods were used to identify indirect impacts. The study area for this analysis (referred to as the Area of Influence [AOI]) was developed based on an evaluation of existing land use and in consideration of the components of the proposed project. The AOI was analyzed to determine what areas would be most likely to experience induced growth if the proposed project was constructed. Constraints on development were identified within the AOI using cartographic techniques and GIS layers gathered for land use, floodplains, parks, schools, churches, and other features of the area that were then categorized as areas that would be less likely to be developed. Historic aerial images were also reviewed to determine historic growth in the area. Past population growth and predicted future growth indicate the area has experienced population growth and the population is expected to continue to grow. Planned development in the area is also anticipated to attract more residential and commercial development within the AOI.

Based on data gathered and input received as part of this analysis, growth within the AOI is expected to continue. However, induced development associated with the SH 71 intersection improvement would be limited. The proposed project would consist of constructing a grade separation along an existing roadway and would not provide additional access to portions of the AOI that are currently lacking access to SH 71 or another major roadway. The proposed improvements are intended to address existing growth and demand in the nearby cities and communities, and while the project could potentially influence the location of development along the roadway corridor, it would not be expected to influence the current pace and nature of development within the AOI. In addition, due to the limited amount of available or suitable developable land adjacent to the SH 71 corridor, induced growth impacts associated with the project are not anticipated.

5.16 Cumulative Impacts

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

Environmental studies regarding the potential direct impacts of the proposed project on the natural and human environment revealed potential impacts to the community, water resources, and biological resources. Regulations of several agencies protect and minimize impacts to water resources, biological resources, and hazardous materials sites within the study area, including the USACE, TCEQ, USFWS, and TPWD.

Impacts to the community include residential and commercial displacements. However, it is anticipated residents and property owners of the displaced residential and commercial properties would be able to relocate within the community. The project would also change access by constructing a new grade separation and removing five median breaks. The removal of median breaks could potentially increase travel times; however, east/west turnarounds would be added to the

SH 71/FM 1209 and SH 71/SH 21 intersections to allow traffic to turn around and/or access the other side of SH 71. Access to all adjacent properties would be maintained and the proposed project would not isolate any businesses or distinct neighborhoods. Data collected from the U.S. Census Bureau indicate census blocks adjacent to the proposed project include EJ populations. Within these predominantly minority census blocks, there would be one residential displacement and five commercial displacements. The proposed project would also result in noise impacts to some adjacent receivers within the predominantly minority census blocks and within census blocks with non-minority populations. Although the project area does contain minority populations, impacts are not expected to be disproportionately high or adverse due to the fact that displacements and noise impacts are not isolated to these predominantly minority population census blocks and occur throughout the project length. The proposed project is anticipated to improve mobility for all members of the community, including minority populations.

Impacts to water resources would result from proposed work at three stream crossings and one wetland associated with one of these stream crossings. However, impacts to water resources would be minimized by use of BMPs and would be authorized by a NWP 14 with a PCN to the USACE.

Impacts to vegetation consist of permanent disturbance of Riparian, Post Oak Savanna, and Urban vegetation types. Coordination with TPWD was conducted for impacts to Riparian and Post Oak Savanna vegetation types.

No habitat for federally listed threatened or endangered species was identified in the project area; therefore, there were no species of poor and declining health identified in the project area. The project does contain potential habitat for one state-listed threatened species, the timber rattlesnake, and eight SGCN: western burrowing owl, cave myotis bat, plains spotted skunk, Texas garter snake, sandhill woollywhite, Texas fescue, and Texas sandmint. For the state-listed species and SGCN species, BMPs would be in place to avoid impacts to species, where possible. Contractors would be advised of potential occurrence in the project area, and to avoid harming the species if encountered. No BMPs are specified for plant SGCN in the current BMP PA (revised 2017) (TxDOT 2017b); therefore, coordination with TPWD will be conducted for impacts to these species. Coordination with TPWD was completed on February 4, 2019.

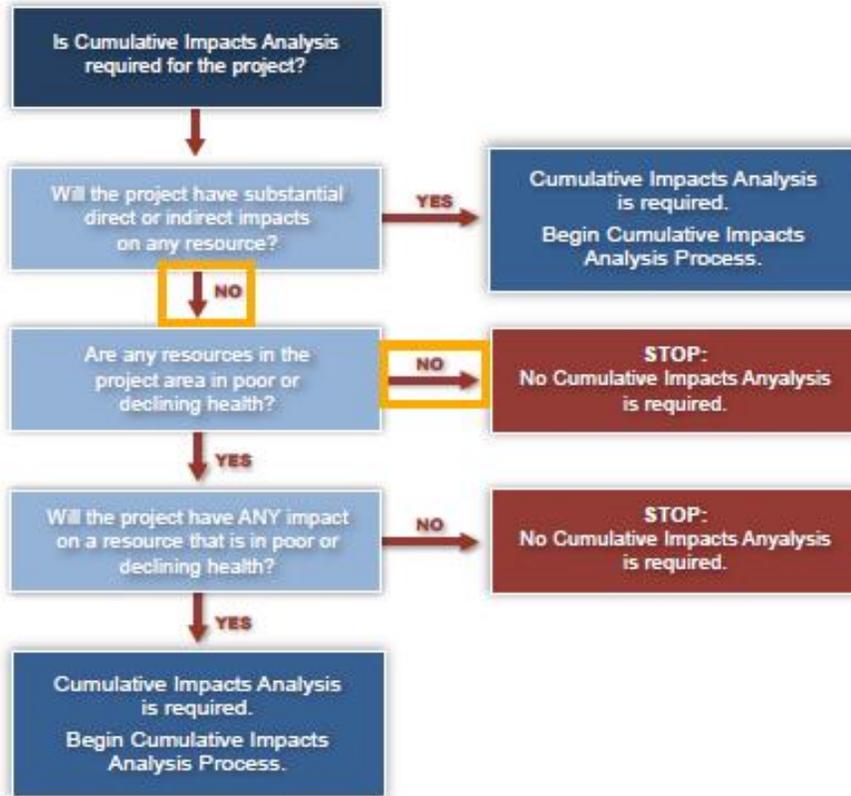
Due to the avoidance, minimization, and mitigation measures implemented for these resources, the potential impacts associated with this project were determined to not be substantial. Although resources within the study area do require regulatory consideration, the nature of the potential project impacts,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

The proposed project would not have substantial direct or indirect impacts on any resource and it was determined that resources in the project area are not in poor or declining health; therefore, based on TxDOT's *Cumulative Impacts Decision Tree* (TxDOT 2014b), it was determined that a cumulative impacts analysis was not required (**Insert 3**).

Insert 3. Cumulative Impacts Decision Tree



Cumulative Impacts Decision Tree



5.17 Construction Phase Impacts

Construction of the proposed project may require temporary lane closures and detours. However, these are expected to be of short duration with no major traffic flow disruptions on the existing roadways. Construction of the proposed project is not anticipated to prevent access to any adjacent property during construction. TxDOT will work with community members to notify them of closures and limited access. **Section 5.12.6** further discusses the construction related air emissions, and **Section 5.14** further discusses the construction noise impacts.

Under the No-Build Alternative, no construction would occur, therefore, no construction impacts would occur.

6.0 AGENCY COORDINATION

Over the course of project development, TxDOT has or it is anticipated TxDOT will coordinate with the following agencies regarding the proposed project.

- TxDOT has coordinated with the TxDOT TPP division for the Draft TxDOT TPP Traffic Memo approved March 23, 2017.
- TxDOT has coordinated with the TPWD for impacts to four SGCN plant species and for exceeding impact thresholds for Post Oak Savanna and Riparian MOU Vegetation types.
- TxDOT will coordinate with the THC to approve the Antiquities Permit Application and the archeological survey report required for the proposed project.
- TxDOT will coordinate with the Bastrop County Historical Commission and the Texas State Historical Preservation Officer to meet the requirements of Section 106.
- TxDOT has coordinated with the THC to approve the HRSR.
- TxDOT will coordinate with Native American tribes who may have an interest in the area of the proposed project.
- TxDOT will coordinate with the local Floodplain Administrator since part of the proposed project activities are within a FEMA-designated 100-year floodplain.
- TxDOT will coordinate with the USACE by sending a PCN for a NWP 14.

Coordination with these agencies will be included in the project record on file at TxDOT Austin District office when coordination is complete.

7.0 PUBLIC INVOLVEMENT

TxDOT held a public meeting to present proposed project details on November 15, 2018, at the Bastrop Convention and Exhibit Center. Notices for the public meeting were published in English in the *Bastrop Advertiser* and in Spanish in *El Mundo* on Thursday, November 1, 2018. Meeting handouts were available in both English and Spanish. The meeting was attended by TxDOT representatives, consultants, local officials and representatives, and interested individuals for a total of 171 attendees. Comments received mostly consisted of the following: design suggestions to SH 71 and/or FM 1209,

an eastbound to westbound turnaround at the SH 71 and SH 21 intersection, requesting one on one meetings with TxDOT staff, changes in access, drainage issues, displacements, supporting the project, and infrastructure. As a result of these comments, an eastbound to westbound turnaround at the SH 71 and SH 21 intersection and drainage improvements near Halfway Creek were added to the proposed project design. The *Public Meeting Summary Report* is available for review at the TxDOT Austin District Office.

TxDOT held a public hearing to present the proposed project details on April 30, 2019, at the Bastrop Convention and Exhibit Center. Notices of the hearing and availability of the Draft Environmental Assessment were published in English in the *Bastrop Advertiser* and in Spanish in *El Mundo* on Thursday, April 11, 2019, as well as published online at <https://www.txdot.gov/inside-txdot/get-involved/about/hearings-meetings/austin/043019.html>. Hearing handouts were available in both English and Spanish. There were 244 people that attended the hearing. Attendees included interested individuals, local officials and representatives, TxDOT representatives, and consultants. Comments received included: concerns about access changes; land use impacts, including displacing multiple small businesses; design suggestions; project timing; congestion; safety; and increased emergency services travel times and distances. No changes were made to the proposed project design based on the comments received. The *Public Hearing Summary Report* is available for review at the TxDOT Austin District Office.

8.0 Post-Environmental Clearance Activities and Contractor Communications

8.1 Post-Environmental Clearance Activities

After issuance of a FONSI, there will be unresolved environmental activities that will need to be performed and finalized. These activities are detailed below.

- 1) As stated in **Section 5.8.1**, additional archeological surveys will need to be conducted in areas where new ROW is needed once right-of-entry is granted or the new ROW is purchased before project construction.
- 2) The Build Alternative would include 5 or more acres of earth disturbance. TxDOT would comply with TCEQ's Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be prepared and implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required. The proposed project is located within the boundaries of a regulated Municipal Separate Storm Sewer System (MS4), and would comply with the applicable MS4 requirements.

8.2 Contractor Communications

Project-specific avoidance measures and special instructions, including BMPs are provided on the standard EPIC sheet and detailed below.

- 1) In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area would cease, and TxDOT archeological staff would be contacted to initiate post-review discovery procedures.
- 2) The Build Alternative would be authorized by NWP 14 and would require a PCN to the USACE.
- 3) Compliance with Section 401 of the Clean Water Act would entail the implementation of at least one approved BMP from each of the three categories identified in the TCEQ's 401 Water Quality Certification Conditions for Nationwide Permits. The categories include erosion control, sedimentation control, and post-construction total suspended solids (TSS) control.
- 4) In accordance with the EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, 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. Therefore, seeding and replanting with TxDOT approved seeding specifications would be performed where possible.
- 5) In the event that migratory birds are encountered on-site during project construction, every effort would be made to avoid protected birds, active nests, eggs, and/or young. Contractors would not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.
- 6) The proposed project contains potential habitat for the timber rattlesnake and the Texas garter snake. Terrestrial Reptile BMPs will be implemented and contractors would be advised of the potential occurrence in the project area, and to avoid harming these species if encountered.
- 7) The proposed project contains potential habitat for the western burrowing owl; therefore, Bird BMPs will be implemented.
- 8) The proposed project contains potential habitat for the cave myotis bat; therefore, Bat BMPs will be implemented.
- 9) The proposed project contains potential habitat for the plains spotted skunk. Contractors will be advised of the potential occurrence in the project area, to avoid harming these species if encountered, and to avoid unnecessary impacts to dens.
- 10) The potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. TxDOT encourages construction contractors to use TERP and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions.
- 11) Some properties with LPG tanks or PSTs would be displaced. Coordination with property owners would be conducted as needed. Any unanticipated hazardous material and/or petroleum contamination encountered during construction of the proposed project would be handled according to applicable federal and state regulations per TxDOT Standard Specifications.

12) Construction of the proposed project may require temporary closures and detours. However, these are expected to be of short duration with no major traffic flow disruptions on the existing roadways. TxDOT will work with community members to notify them of closures and limited access.

9.0 CONCLUSION

The analysis of alternatives for the proposed project determined that improvements proposed under the Build Alternative would meet the purpose and need of the project. Specifically, the Build Alternative would reduce congestion and improve mobility along SH 71 within the project limits.

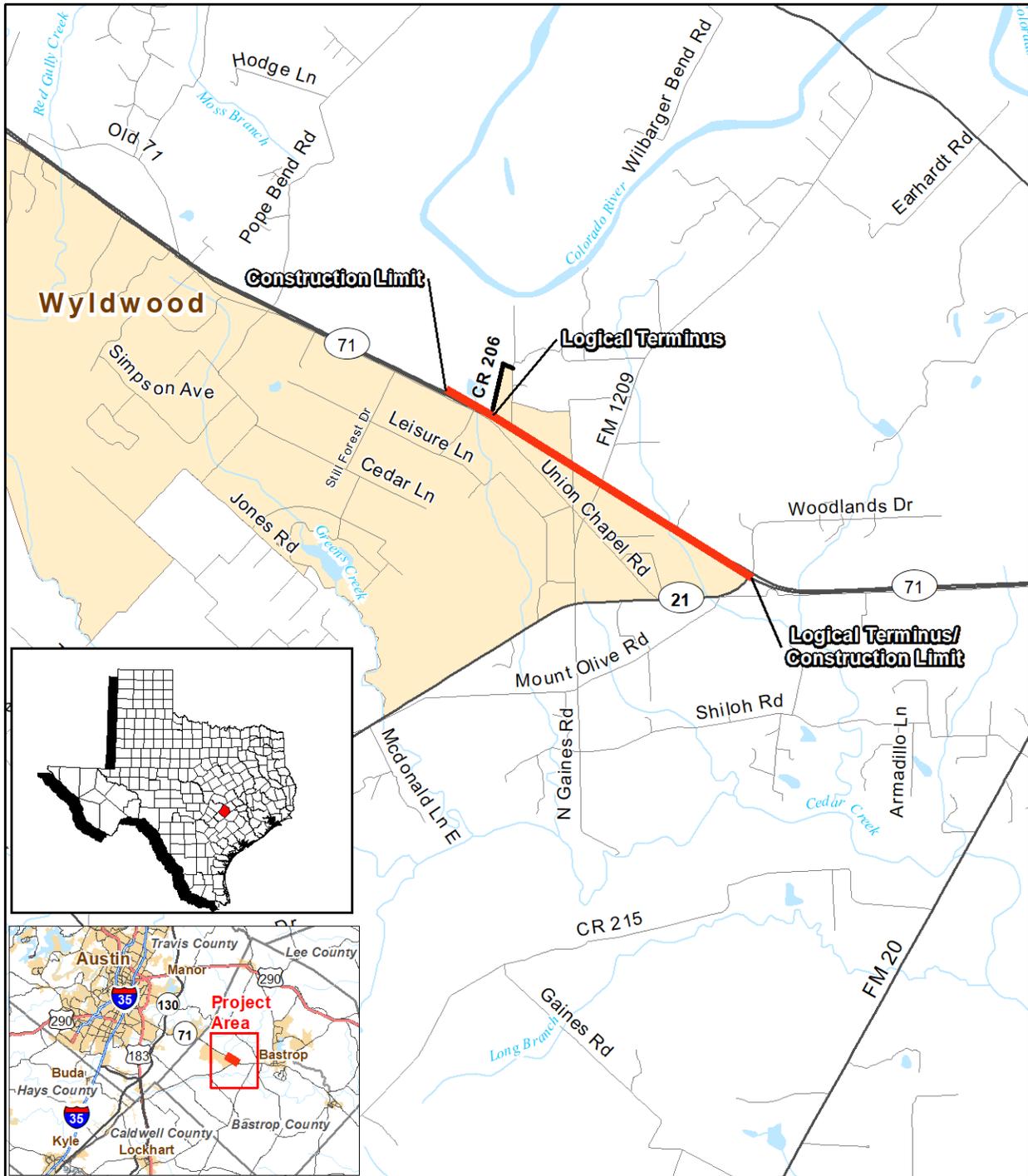
The engineering, social, economic, and environmental studies conducted on the improvements proposed by the Build Alternative indicate that the project would result in no significant adverse impacts on the human or natural environment at a level that would warrant an Environmental Impact Statement; therefore, a FONSI is recommended.

10.0 REFERENCES

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Appendix A
Project Location Maps

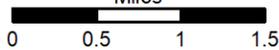


Base Map: ESRI - US Base Map;



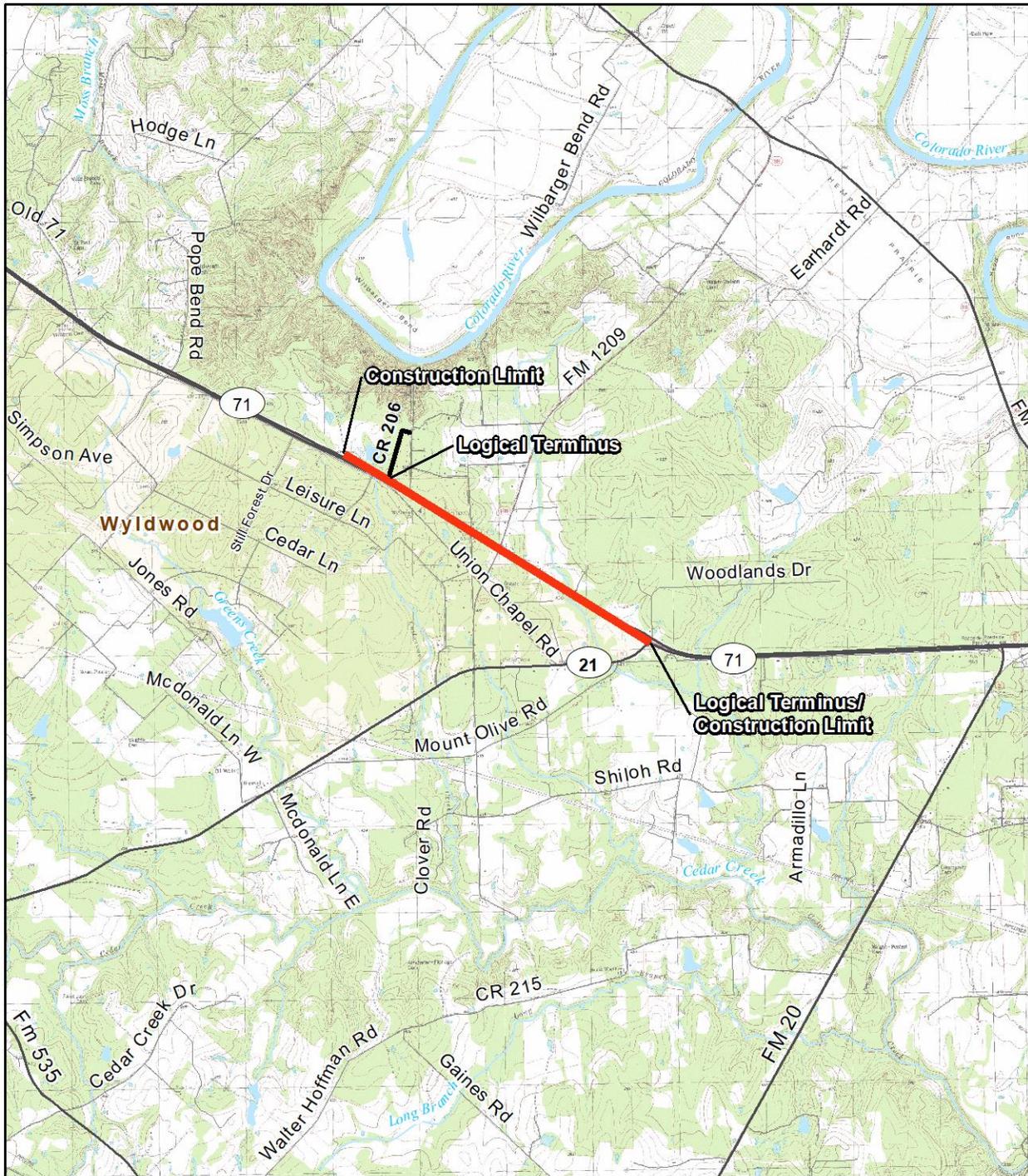
1:72,000

Miles



Project Location

Figure 1
 Project Location on County Map
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041

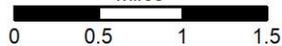


Base Map: 7.5' USGS topographic quadrangle:
 Webberville, Texas
 (1987, Map ID No. 30097-B5)
 Utley, Texas
 (1982, Map ID No. 30097-B4)
 Bastrop SW, Texas
 (1982, Map ID No. 30097-A4)
 Lytton Springs, Texas
 (1968, Map ID No. 30097-A5)



1:72,000

Miles



█ Project Location

Figure 2
 Project Location on Topographic Map
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041

Appendix B
Project Photos



Photo 1. SH 71 at FM 1209 intersection, facing northeast



Photo 2. SH 71 at FM 1209 intersection, facing southwest



Photo 3. Western limit of the proposed project, facing southeast



Photo 4. Eastern limit of the proposed project, facing northwest



Photo 5. Existing ROW along south side of SH 71, facing northwest



Photo 6. Existing ROW along south side of SH 71, facing southeast



Photo 7. Existing ROW along south side of SH 71, facing northwest



Photo 8. Existing ROW along south side of SH 71, facing southeast



Photo 9. Representative photo of residence along SH 71, facing south



Photo 10. Representative photo of residences along SH 71, facing north



Photo 11. Representative photo of commercial business along SH 71, facing north



Photo 12. Representative photo of commercial business along SH 71, facing north

Appendix C

Schematic

LEGEND

	SH 71 PROPOSED ROADWAY		RETAINING WALL
	SHARED USED PATH (SUP)		UTILITY COMMUNICATION/FIBER OPTIC
	EXISTING ROW		UTILITY ELECTRIC
	PROPOSED ROW		UTILITY SANITARY SEWER
	PROPOSED ACCESS DENIAL		UTILITY WATER
	PROPOSED TRAFFIC FLOW		DRIVERLY LICENSE NEEDED
	PAVEMENT REMOVAL		

BASTROP COUNTY
CITY OF BASTROP
AUSTIN DISTRICT
CSJ: 0265-03-041

SH 71 AT FM 1209

AUSTIN DISTRICT ENGINEER
TERRY MCCOY, P.E.

SCHEMATIC DESIGN FOR NEW OVERPASS OF SH 71 AT FM 1209

FROM CS 206 COLORADO CIR TO FM 1209

ROADWAY LENGTH 2.09 MI
TRANSITIONS 0.32 MI

TOTAL LENGTH 2.50 MI

FUNCTIONAL CLASSIFICATION
PRINCIPAL ARTERIAL/URBAN FREEWAY

DESIGN SPEED

MAINLINE	60 MPH
FRONTAGE ROADS	45 MPH
RAMP	50 MPH
CROSS STREETS	30 MPH
FM 1209 LOCAL URBAN STREET	45 MPH

MAX = 6%

TRAFFIC DATA

LOCATION	2014	2040	BASE YEAR
KELLAM RD TO SH 21	34,600	49,700	9.5%

PERCENT TRUCKS (ADT)

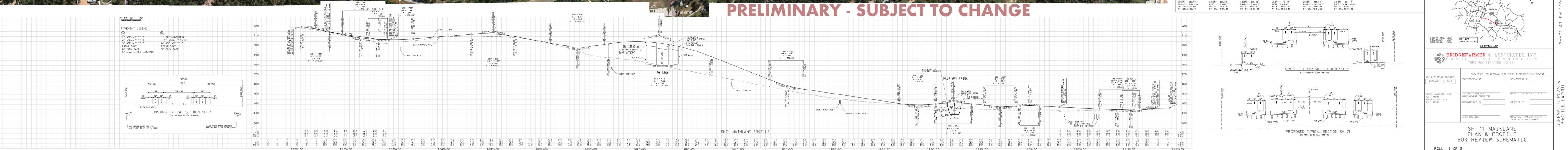
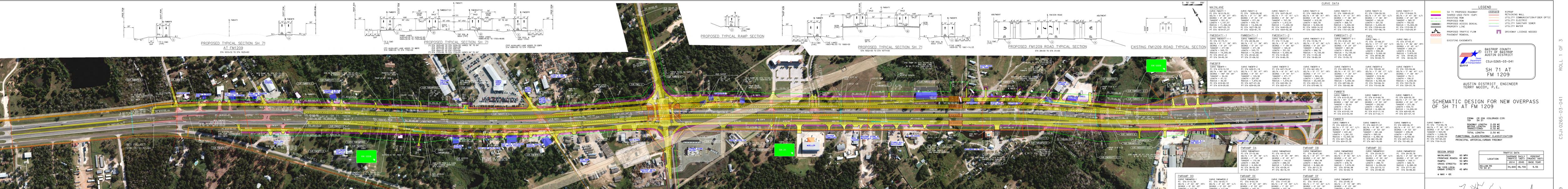
BRIDGEFARMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
TYPE REGISTRATION NO. 284

COORDINATES AND DISTANCES ARE IN US SURVEY FEET, DISPLAYED IN SURFACE VALUES UTILIZING A SURFACE ADJUSTMENT FACTOR OF 1.00012.

HORIZONTAL CONTROL IS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NAD-83 (2011), CENTRAL ZONE (4203).

ELEVATIONS ARE BASED ON GPS DERIVED ELLIPSOID HEIGHTS AND ADJUSTED TO NAVD-88 ELEVATIONS UTILIZING GEOID 128.

SH 71 MAINLINE PLAN & PROFILE 90% REVIEW SCHEMATIC



LEGEND

	SH 71 PROPOSED ROADWAY		RETAINING WALL
	SHARED USED PATH (SUP)		UTILITY COMMUNICATION/FIBER OPTIC
	EXISTING ROW		UTILITY ELECTRIC
	PROPOSED ROW		UTILITY SANITARY SEWER
	PROPOSED ACCESS DENIAL		UTILITY WATER
	PROPOSED TRAFFIC FLOW		DRIVERLY LICENSE NEEDED
	PAVEMENT REMOVAL		

BASTROP COUNTY
CITY OF BASTROP
AUSTIN DISTRICT
CSJ: 0265-03-041

SH 71 AT FM 1209

AUSTIN DISTRICT ENGINEER
TERRY MCCOY, P.E.

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PERCENT TRUCKS (ADT)

BRIDGEFARMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
TYPE REGISTRATION NO. 284

NOT A BIDDING DOCUMENT
FEBRUARY 11, 2019

SUBMITTED FOR APPROVAL FOR FURTHER PROJECT DEVELOPMENT

RECOMMENDED BY: [] RECOMMENDED BY: []

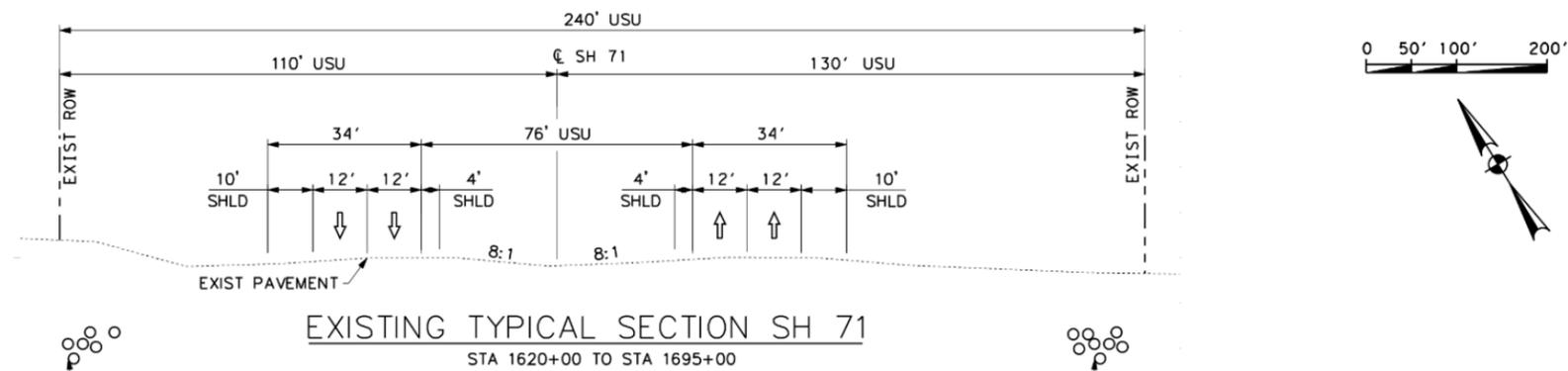
ADVANCED PROJECT DEVELOPMENT DIRECTOR: [] DISTRICT DESIGN ENGINEER: []

RECOMMENDED BY: [] APPROVED BY: []

AREA ENGINEER: [] DIRECTOR, TRANSPORTATION PLANNING & DEVELOPMENT: []

SH 71 MAINLINE PLAN & PROFILE 90% REVIEW SCHEMATIC

Appendix D
Typical Sections



MASS FIBER OPTIC UTILITIES AND WATER (EAST OF FM 1209)

MASS FIBER OPTIC UTILITIES AND WATER (EAST OF FM 1209)

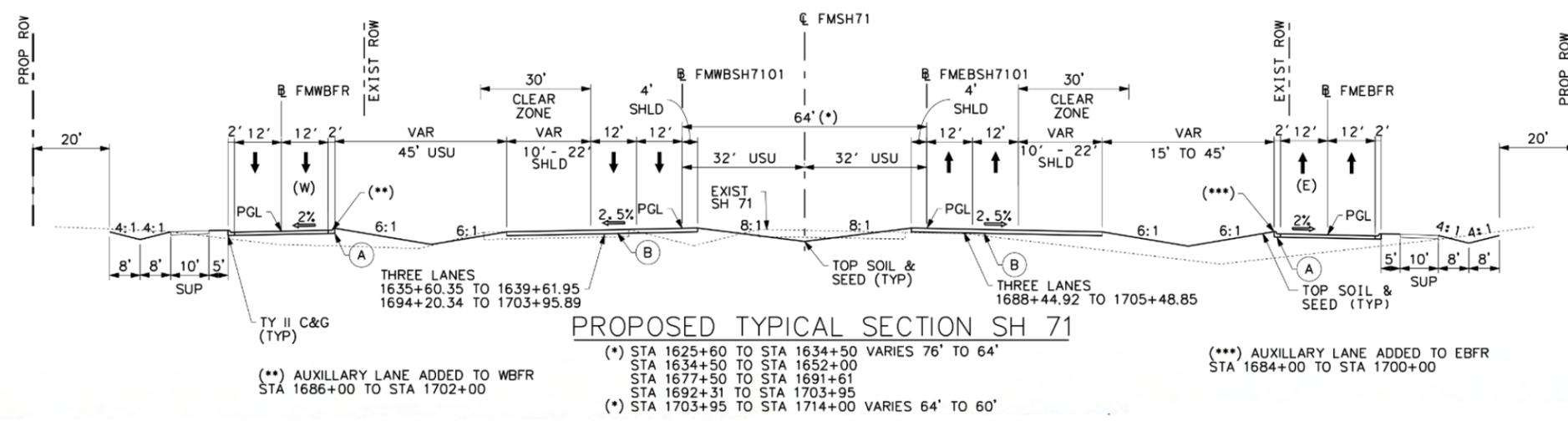
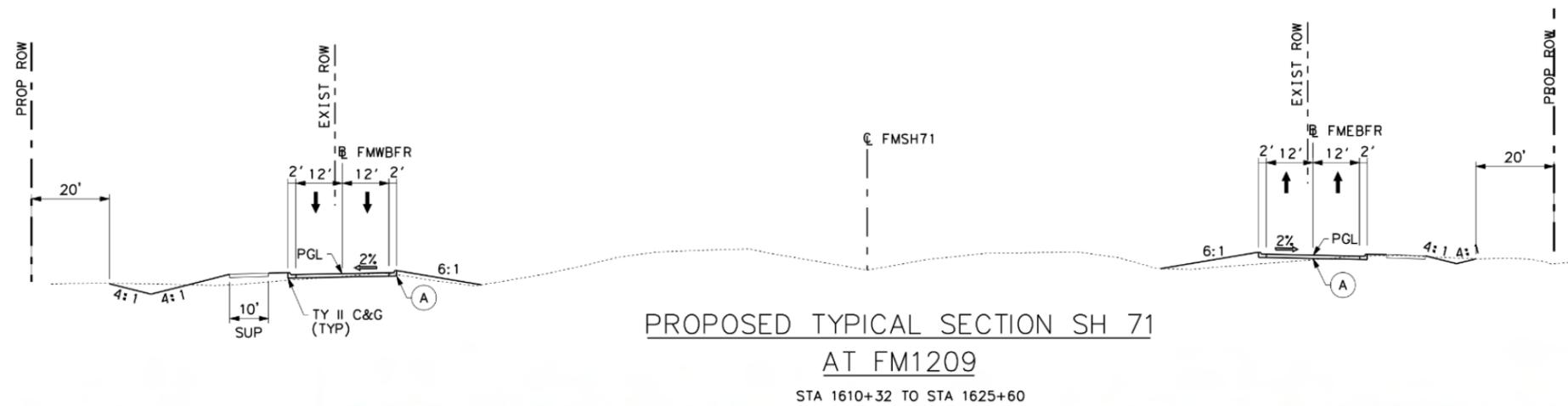


Figure 1.1
Existing and Proposed Typical Sections
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

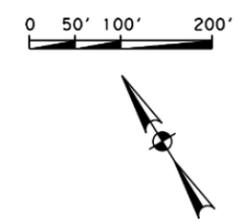
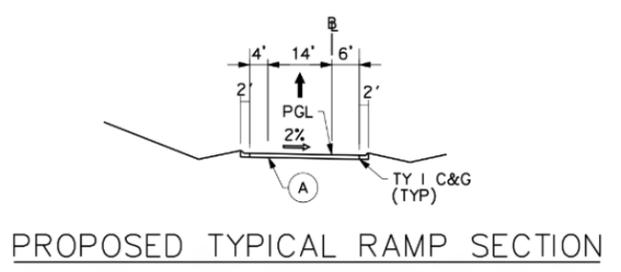
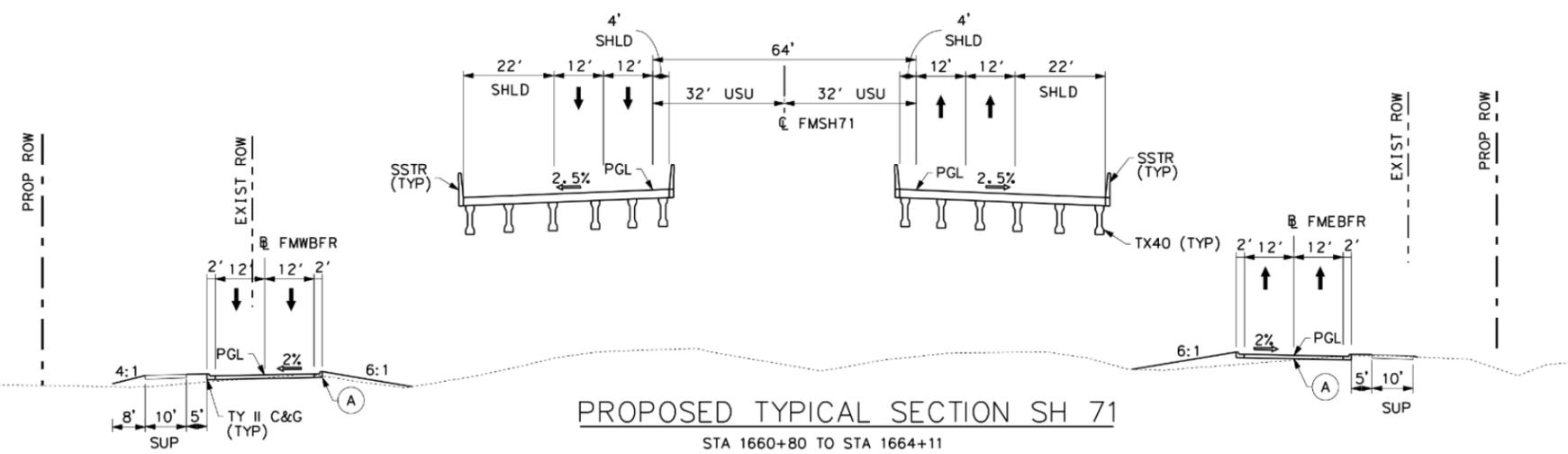
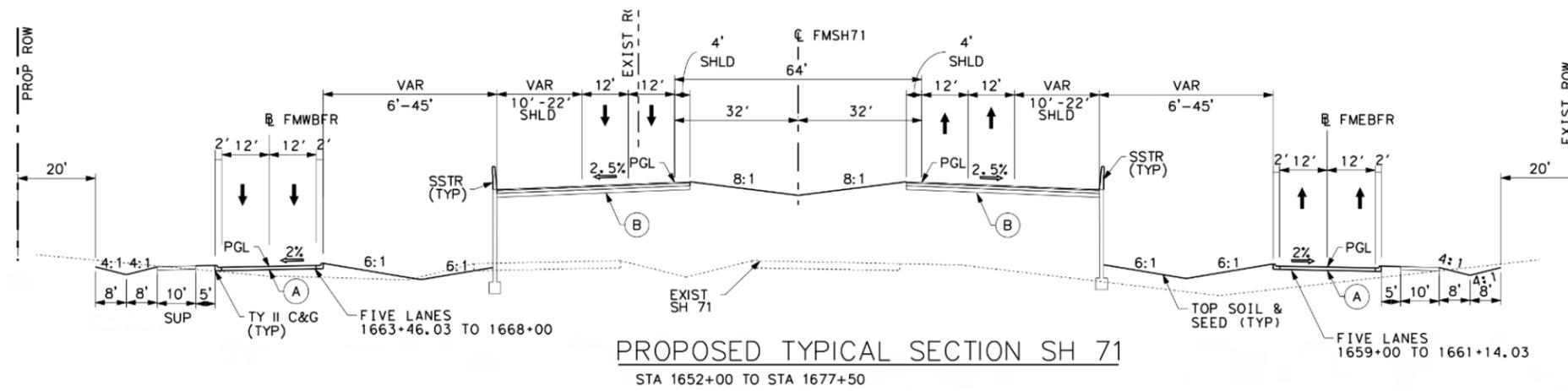
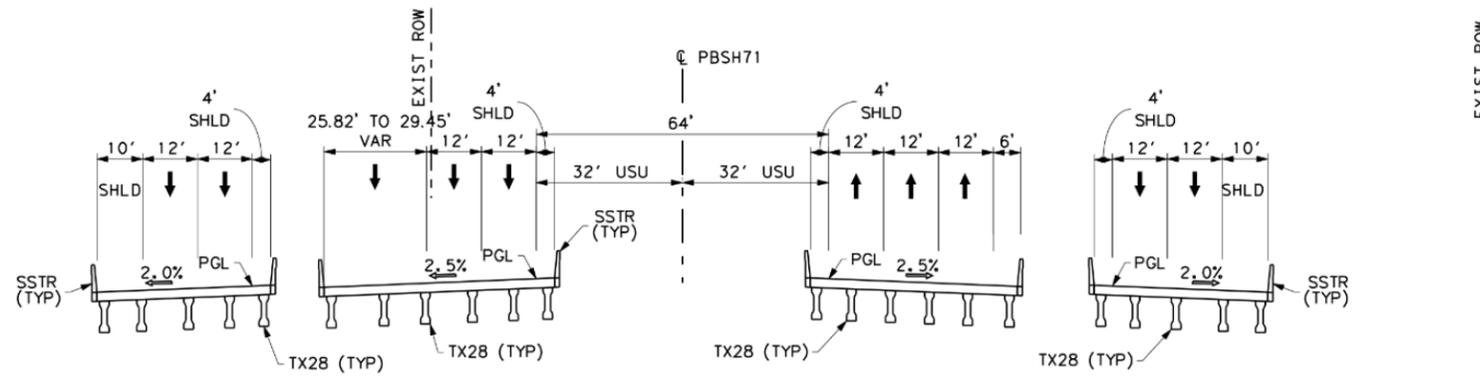
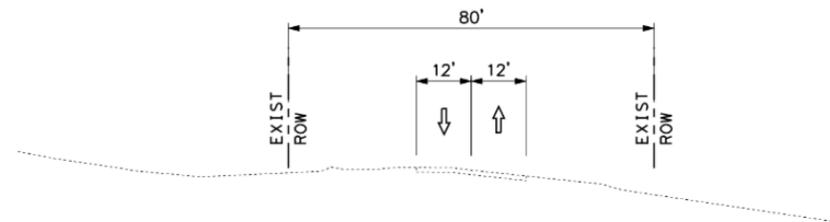


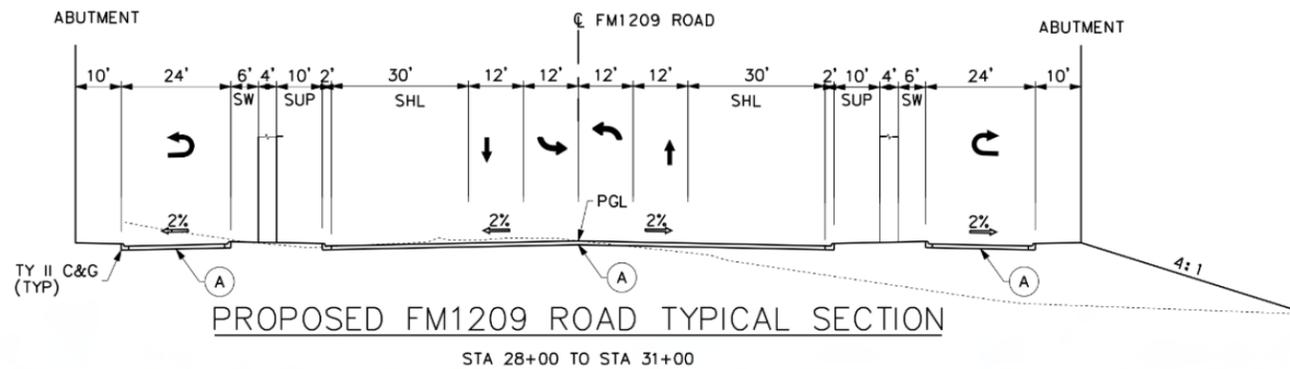
Figure 1.2
Existing and Proposed Typical Sections
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



PROPOSED TYPICAL SECTION SH 71
STA 1691+60 TO STA 1693+00



EXISTING FM1209 ROAD TYPICAL SECTION



PROPOSED FM1209 ROAD TYPICAL SECTION
STA 28+00 TO STA 31+00

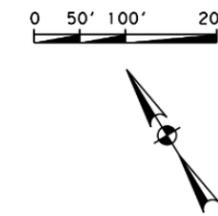


Figure 1.3
Existing and Proposed Typical Sections
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

Appendix E

Plan and Program Excerpts

2018 Unified Transportation Program **Austin**

Bastrop County

CSJ 0114-05-037 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Let** **TOLL No** **US 290** **Ranking Tier 1**

Limits From 1.0 MI E OF FM 696
 Limits To 8.864 MI E OF FM 696
 Project Description WIDEN TO 4 LANE DIVIDED Est Const Cost: \$34,790,787

Programmed Construction Funding

Category	Description	Authorized	Other	Total
4	URBAN CONNECTIVITY	\$19,600,000	\$0	\$19,600,000
2M	METRO CORRIDOR	\$20,400,000	\$0	\$20,400,000
Total		\$40,000,000	\$0	\$40,000,000

Previously Authorized

CSJ 0114-06-029 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Let** **TOLL No** **US 290** **Ranking Tier 1**

Limits From FM 2104
 Limits To LEE C/L
 Project Description WIDEN TO 4 LANE DIVIDED Est Const Cost: \$16,845,289

Programmed Construction Funding

Category	Description	Authorized	Other	Total
4	URBAN CONNECTIVITY	\$17,000,000	\$0	\$17,000,000
Total		\$17,000,000	\$0	\$17,000,000

Previously Authorized

CSJ 0265-04-062 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Let** **TOLL No** **SH 21** **Ranking Tier 1**

Limits From 1.187 MI W OF SH 95
 Limits To 0.668 MI W OF SH 95
 Project Description CONSTRUCT FRONTAGE ROADS AND BRIDGE Est Const Cost: \$29,762,007

Programmed Construction Funding

Category	Description	Authorized	Other	Total
2M	METRO CORRIDOR	\$29,762,006	\$0	\$29,762,006
Total		\$29,762,006	\$0	\$29,762,006

Funding Adjustment

CSJ 0265-05-076 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Let** **TOLL No** **SH 21** **Ranking Tier 1**

Limits From 0.668 MI. WEST OF SH 95
 Limits To 0.268 MI. WEST OF SH 95
 Project Description CONSTRUCT BRIDGES, MAIN LANES, AND FRONTAGE ROADS Est Const Cost: \$18,665,337

Programmed Construction Funding

Category	Description	Authorized	Other	Total
3	LOCAL	\$0	\$32,600	\$32,600
2M	METRO CORRIDOR	\$18,665,337	\$0	\$18,665,337
Total		\$18,665,337	\$32,600	\$18,697,937

Funding Adjustment

CSJ 0265-03-041 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Construct** **TOLL No** **SH 71** **Ranking Tier 1**

Limits From AT FM 1209
 Limits To .
 Project Description CONSTRUCT OVERPASS Est Const Cost: \$35,000,000

Programmed Construction Funding

Category	Description	Authorized	Other	Total
4	URBAN CONNECTIVITY	\$35,000,000	\$0	\$35,000,000
Total		\$35,000,000	\$0	\$35,000,000

Previously Authorized

CSJ 0265-03-042 **District AUSTIN** **COUNTY BASTROP** **UTP AUTHORITY Construct** **TOLL No** **SH 71** **Ranking Tier 1**

Limits From AT POPE BEND RD.
 Limits To .
 Project Description CONSTRUCT OVERPASS Est Const Cost: \$25,000,000

Programmed Construction Funding

Category	Description	Authorized	Other	Total
4	URBAN CONNECTIVITY	\$25,000,000	\$0	\$25,000,000
Total		\$25,000,000	\$0	\$25,000,000

Previously Authorized

Transportation Improvement Program

2019-2022



Grouped Projects

MPO ID	CSJ	County	Roadway	Limits (From)	Limits (To)	Description	Sponsor(s)	FY	Total Cost
14-00026-00	0265-0-3--043	Bastrop	SH 71	At Tucker Hill Lane (CR 214)		Construct Overpass	TxDOT	2021	\$41,622,836.00
14-00029-00	0265-0-3--041	Bastrop	SH 71	At FM 1209		Construct Overpass	TxDOT	2021	\$47,300,406.00
14-00030-00	0265-0-3--042	Bastrop	SH 71	At Pope Bend Rd.		Construct Overpass	TxDOT	2021	\$33,786,290.00
64-00006-00	0914-05-181	Williamson	CR	On CR 456	At Brushy Creek	Realign Roadway & Replace Bridge	TxDOT	2021	\$1,019,347.00
64-00017-00	1566-02-019	Williamson	FM 1660	King Lane in Hutto	FM 973	Rehab Rdwy	TxDOT	2021	\$13,022,000.00
64-00034-00	0683-01-056	Williamson	RM 620	Deepwood Drive	IH 35 (DOT No. 439705H)	Construct Railroad Grade Separation Structure	TxDOT	2021	\$37,000,000.00
75-00001-00			FM 1626/RM 957 Intersection			Land use and transportation nodal	CAMPO	2021	\$200,000.00
75-00002-00			Garlic Creek Parkway			Corridor and connectivity analysis	CAMPO	2021	\$350,000.00
75-00003-00		Travis	Bergstrom Spur			Feasibility analysis of an abandoned rail corridor	CAMPO	2021	\$350,000.00
64-00011-00	0334-01-047	Williamson	FM 112	SH 95	US 79	Rehabilitate Roadway	TxDOT	2022	\$6,990,000.00
75-00004-00		Hays	US 290/RM 12 & Mercer District			Land use, corridor and node analysis	CAMPO	2022	\$450,000.00
75-00006-00		Hays	San Marcos - Southwestern			Land use, corridor and node analysis	CAMPO	2022	\$1,000,000.00

STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
CAMPO - HIGHWAY PROJECTS
FY 2021

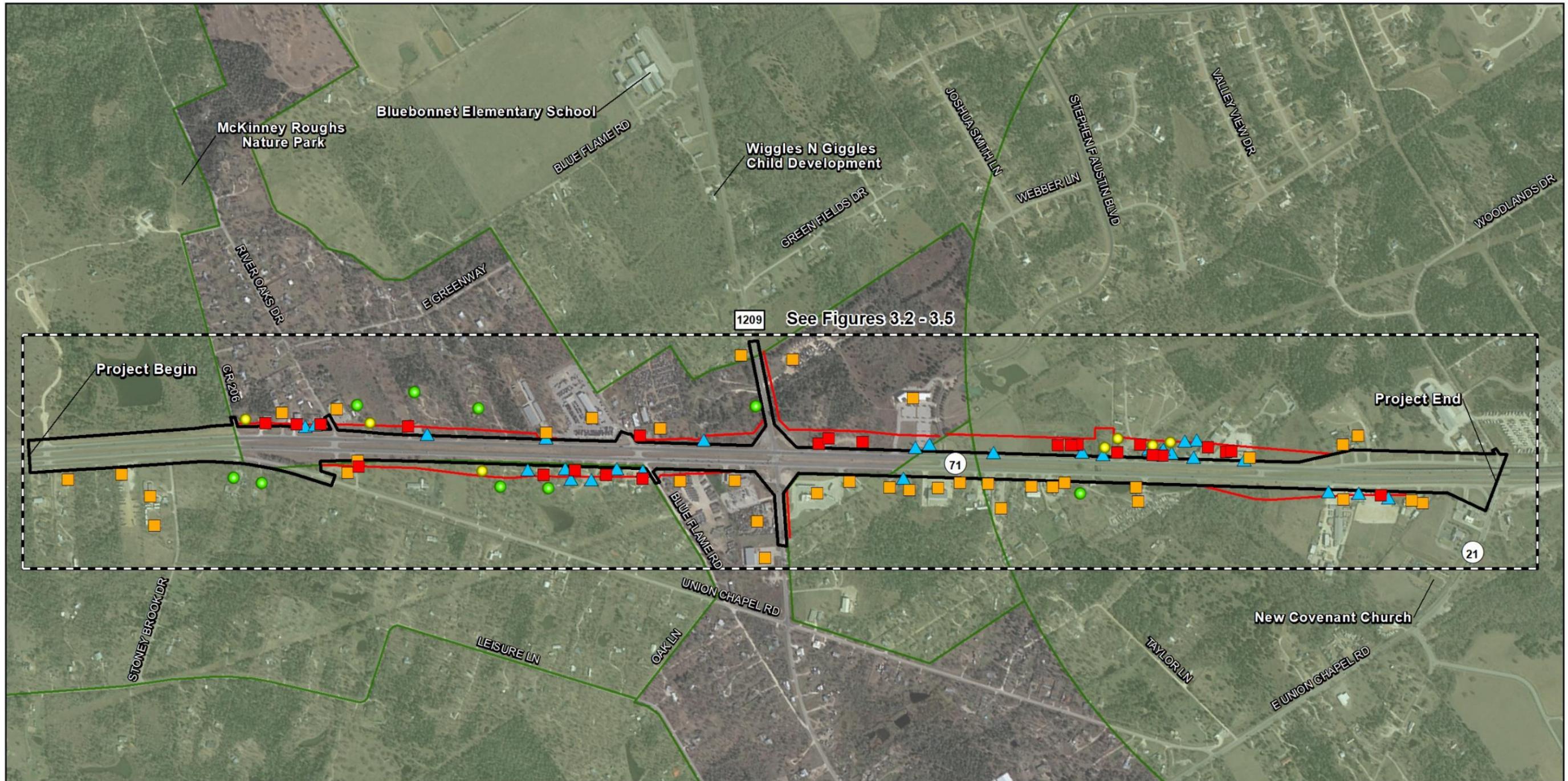
2019-2022 STIP		07/2018 Revision: Pending Approval							
DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST	
AUSTIN	CAMPO	WILLIAMSON	0000-00-000	2021	RM 2243	C	OTHER	\$ 6,850,000	
LIMITS FROM		Norwood Drive		PROJECT SPONSOR				City of Georgetown	
LIMITS TO		SW Bypass		REVISION DATE				07/2018	
PROJECT		Upgrade to a four-lane divided with new traffic signals and pedestrian improve				MPO PROJ NUM			61-00128-00
DESCR		nts				FUNDING CAT(S)			2M
REMARKS		P7		PROJECT HISTORY					
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE					
PREL ENG \$	1,200,000	CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL	
ROW PURCH \$	748,000	2M	\$ 0	\$ 4,500,000	\$ 0	\$ 2,350,000	\$ 0	\$ 6,850,000	
CONSTR \$	6,850,000	TOTAL	\$ 0	\$ 4,500,000	\$ 0	\$ 2,350,000	\$ 0	\$ 6,850,000	
CONST ENG \$	120,000	COST OF APPROVED PHASES							
CONTING \$	665,000	\$ 6,850,000							
INDIRECT \$	0								
BOND FIN \$	0								
PT CHG ORD \$	0								
TOTAL CST \$	9,583,000								

2019-2022 STIP		07/2018 Revision: Pending Approval							
DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST	
AUSTIN	CAMPO	BASTROP	0265-03-041	2021	SH 71	C	OTHER	\$ 35,000,000	
LIMITS FROM		At FM 1209		PROJECT SPONSOR				TxDOT	
LIMITS TO						REVISION DATE			07/2018
PROJECT		Construct 2-Lane Overpass				MPO PROJ NUM			11-00030-00
DESCR						FUNDING CAT(S)			4
REMARKS		P7		PROJECT HISTORY					
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE					
PREL ENG \$	1,941,285	CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL	
ROW PURCH \$	1,000	4	\$ 28,000,000	\$ 7,000,000	\$ 0	\$ 0	\$ 0	\$ 35,000,000	
CONSTR \$	39,618,077	TOTAL	\$ 28,000,000	\$ 7,000,000	\$ 0	\$ 0	\$ 0	\$ 35,000,000	
CONST ENG \$	1,858,087	COST OF APPROVED PHASES							
CONTING \$	1,184,580	\$ 35,000,000							
INDIRECT \$	0								
BOND FIN \$	0								
PT CHG ORD \$	1,778,851								
TOTAL CST \$	46,381,880								

2019-2022 STIP		07/2018 Revision: Pending Approval							
DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST	
AUSTIN	CAMPO	TRAVIS	0265-02-042	2021	SH 71	C,E,R	OTHER	\$ 11,000,000	
LIMITS FROM		.85 Miles West of Tucker Hill Lane		PROJECT SPONSOR				TxDOT	
LIMITS TO		Travis / Bastrop County Line		REVISION DATE				07/2018	
PROJECT		Construct Overpass and Add 2 Lane One-Way Eastbound And Westbound Frontage Roads				MPO PROJ NUM			51-00194-00
DESCR						FUNDING CAT(S)			4
REMARKS		P7		PROJECT HISTORY					
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE					
PREL ENG \$	594,527	CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL	
ROW PURCH \$	0	4	\$ 8,800,000	\$ 2,200,000	\$ 0	\$ 0	\$ 0	\$ 11,000,000	
CONSTR \$	12,133,218	TOTAL	\$ 8,800,000	\$ 2,200,000	\$ 0	\$ 0	\$ 0	\$ 11,000,000	
CONST ENG \$	569,047	COST OF APPROVED PHASES							
CONTING \$	362,783	\$ 11,000,000							
INDIRECT \$	0								
BOND FIN \$	0								
PT CHG ORD \$	544,781								
TOTAL CST \$	14,204,356								

Appendix F

Resource-specific Maps



- Existing Right-of-way
- Proposed Right-of-way
- City of Bastrop ETJ
- Residential Site
- Commercial Site
- Potential Displaced Residential Site
- Potential Displaced Commercial Site
- Potential Displaced Other Site

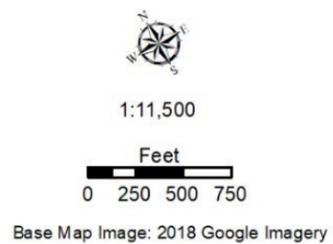


Figure 1.1
 Adjacent Properties
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
- Proposed Right-of-way
- City of Bastrop ETJ
- Residential Site
- Commercial Site
- Potential Displaced Residential Site
- Potential Displaced Commercial Site
- ▲ Potential Displaced Other Site

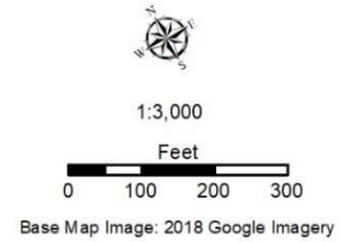
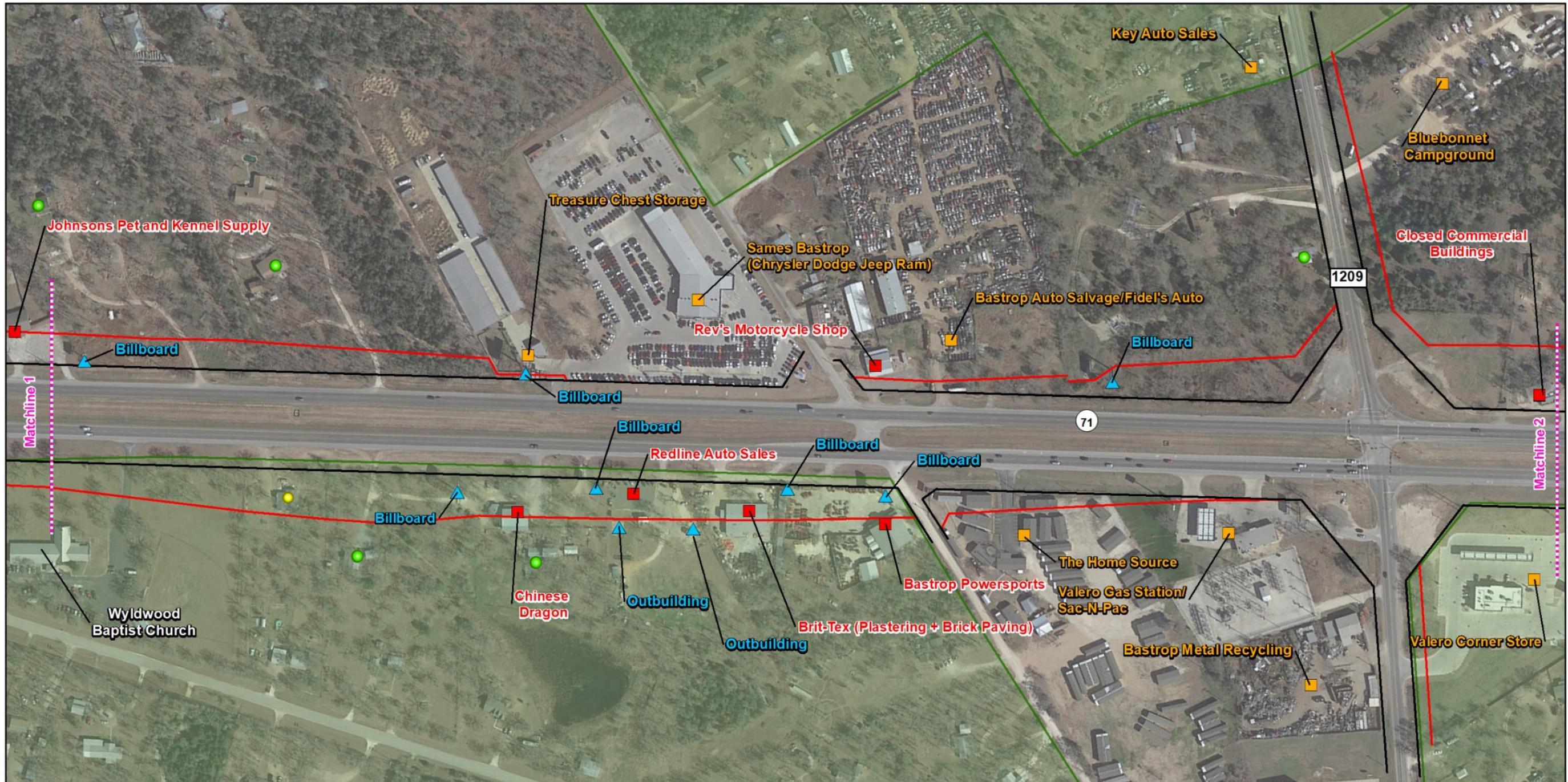


Figure 1.2
 Adjacent Properties
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
- Proposed Right-of-way
- City of Bastrop ETJ
- Residential Site
- Commercial Site
- Potential Displaced Residential Site
- Potential Displaced Commercial Site
- ▲ Potential Displaced Other Site

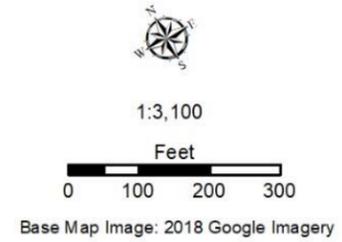
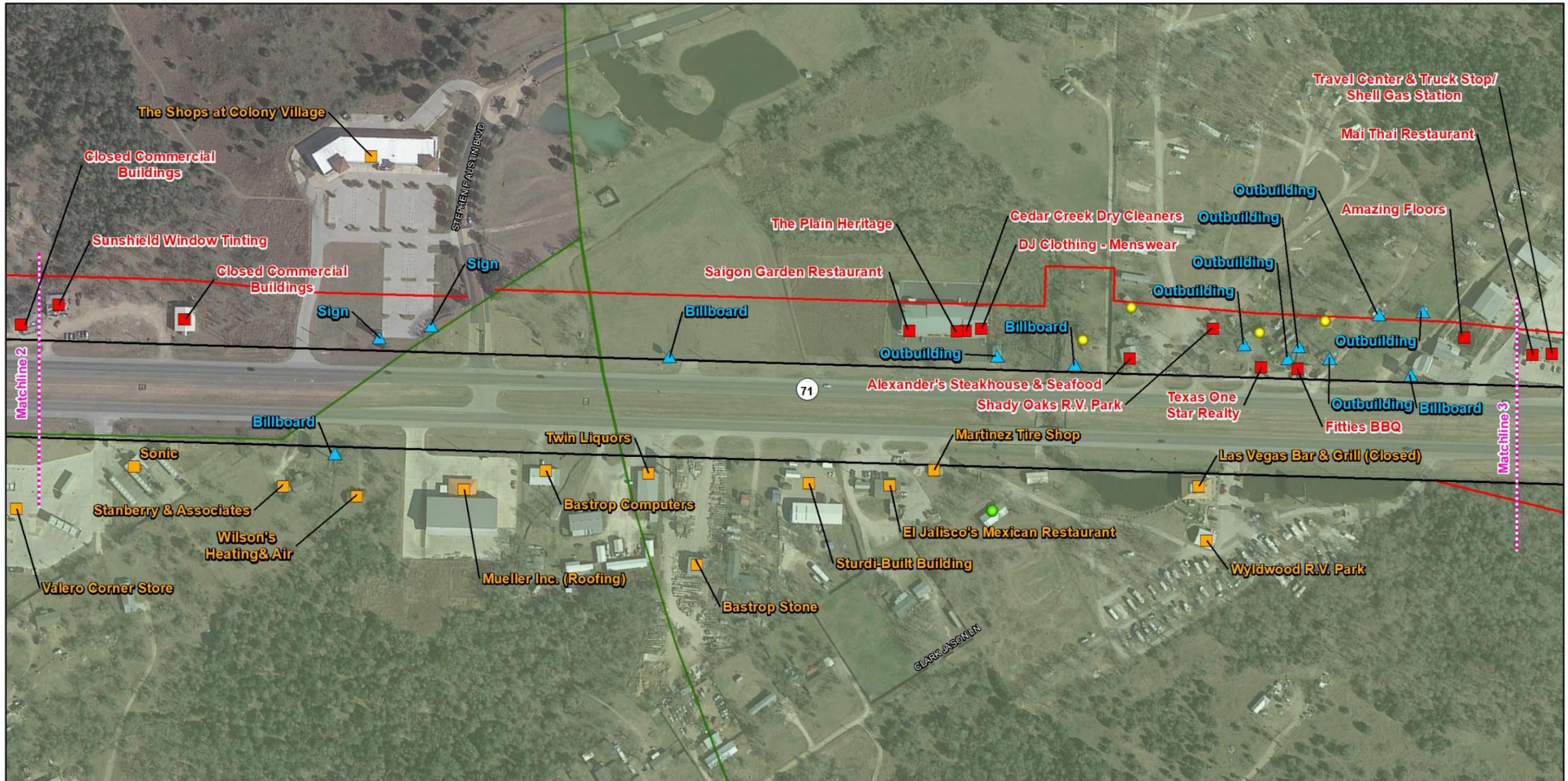


Figure 1.3
 Adjacent Properties
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
- Proposed Right-of-way
- City of Bastrop ETJ
- Residential Site
- Commercial Site
- Potential Displaced Residential Site
- Potential Displaced Commercial Site
- ▲ Potential Displaced Other Site

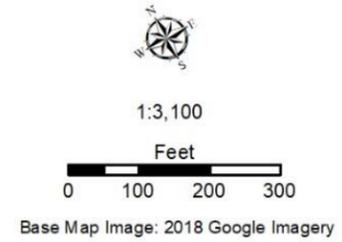
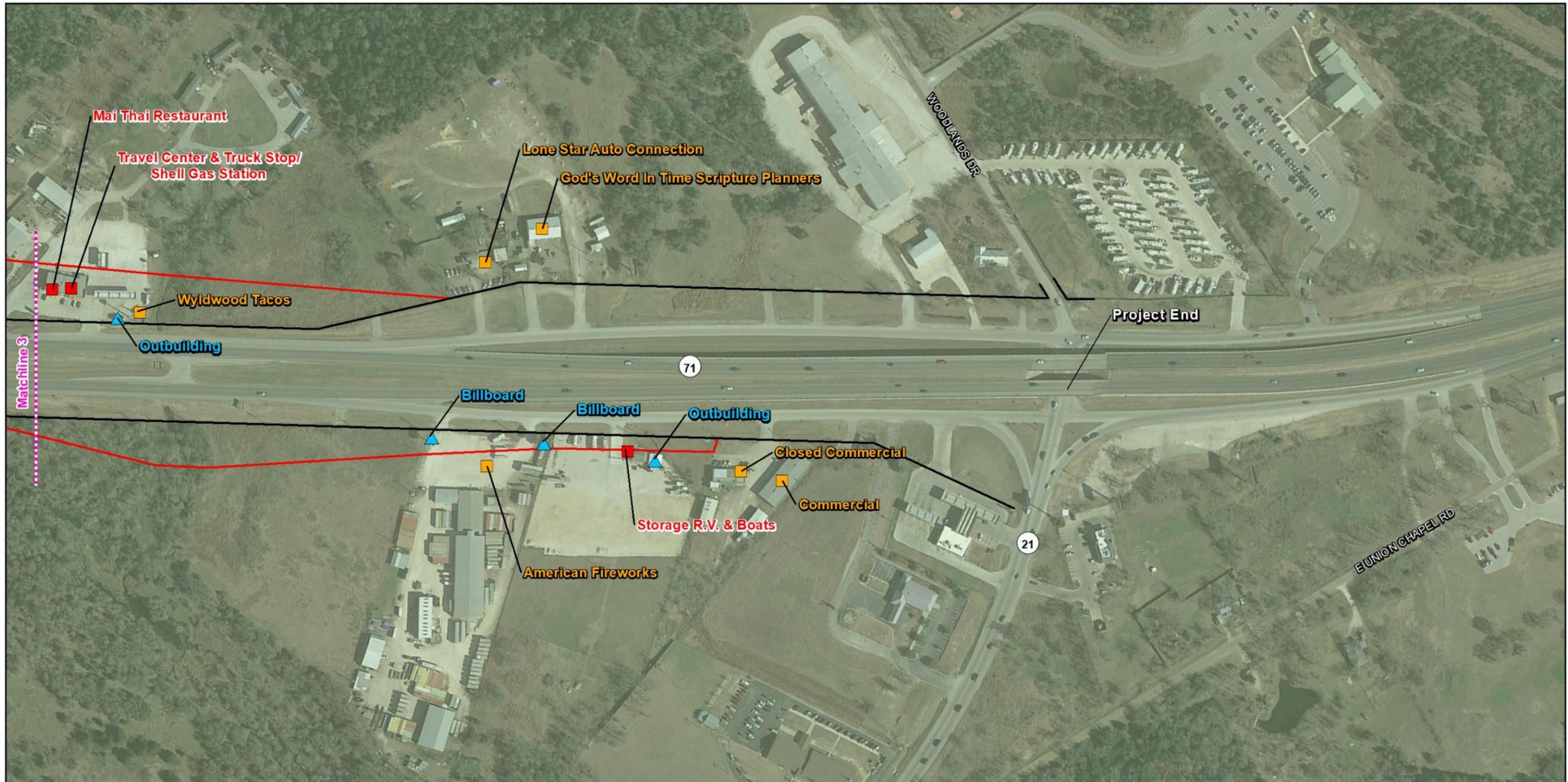
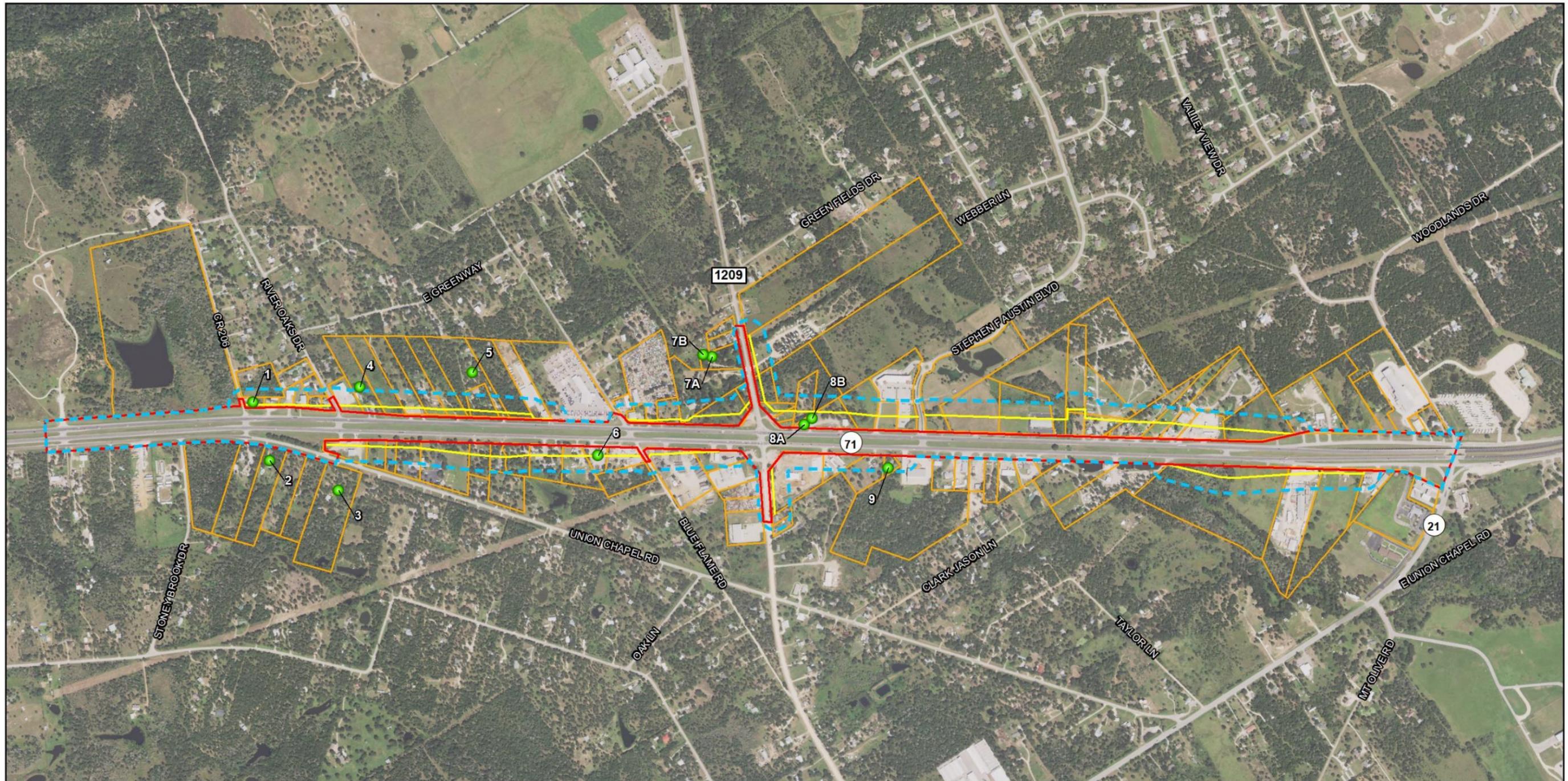


Figure 1.4
 Adjacent Properties
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



<ul style="list-style-type: none"> — Existing Right-of-way — Proposed Right-of-way City of Bastrop ETJ 	<ul style="list-style-type: none"> ● Residential Site ■ Commercial Site ● Potential Displaced Residential Site ■ Potential Displaced Commercial Site ▲ Potential Displaced Other Site 		<p>1:3,100</p> <p>Feet</p> <p>0 100 200 300</p> <p>Base Map Image: 2018 Google Imagery</p>	<p>Figure 1.5 Adjacent Properties SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041</p>
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- Inventoried Resource #
- Existing Right-of-way
- Proposed Right-of-way
- Area of Potential Effect (Variable)
- Parcels within the APE

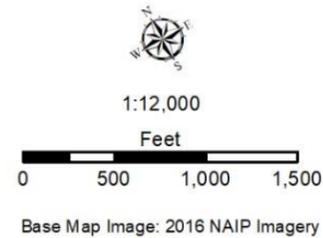
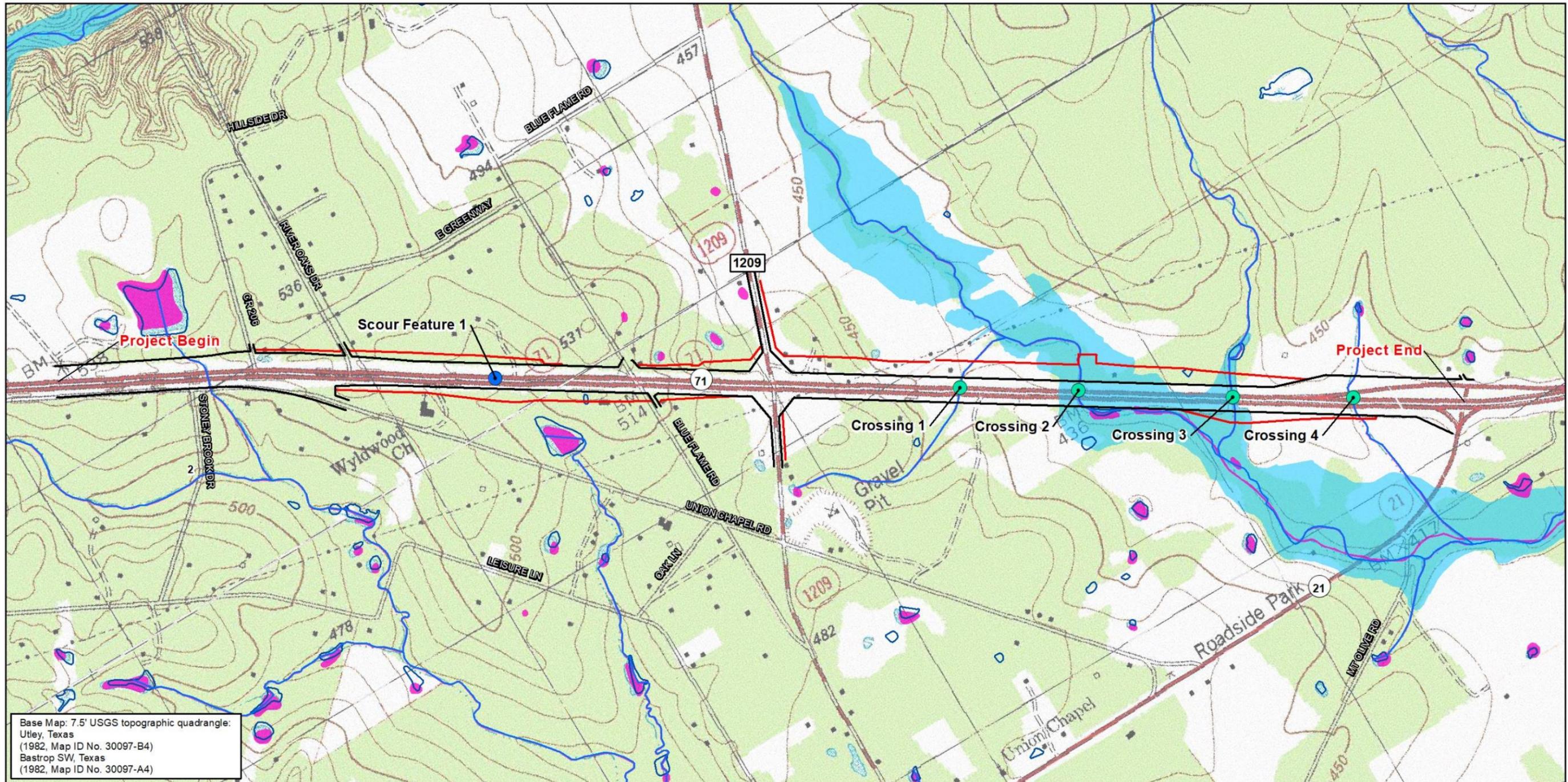


Figure 2
 Inventoried Resources
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



Base Map: 7.5' USGS topographic quadrangle:
 Utley, Texas
 (1982, Map ID No. 30097-B4)
 Bastrop SW, Texas
 (1982, Map ID No. 30097-A4)

- Scour Feature 1 (Not a Water of the U.S.)
- Waters of the U.S. Crossing
- Existing Right-of-way
- Proposed Right-of-way
- River/Stream (NHD)
- Waterbody (NHD)
- National Wetlands Inventory Feature (NWI)
- 100-year Floodplain

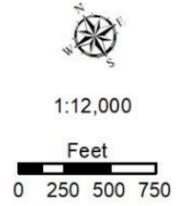


Figure 3
 Water Resources
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Observation Point
- Existing Right-of-way
- Proposed Right-of-way
- Scour Feature 1 (Not a Water of the U.S.)

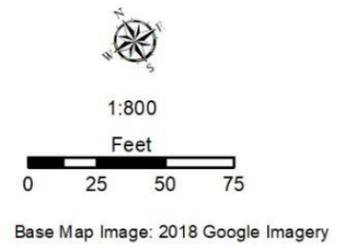
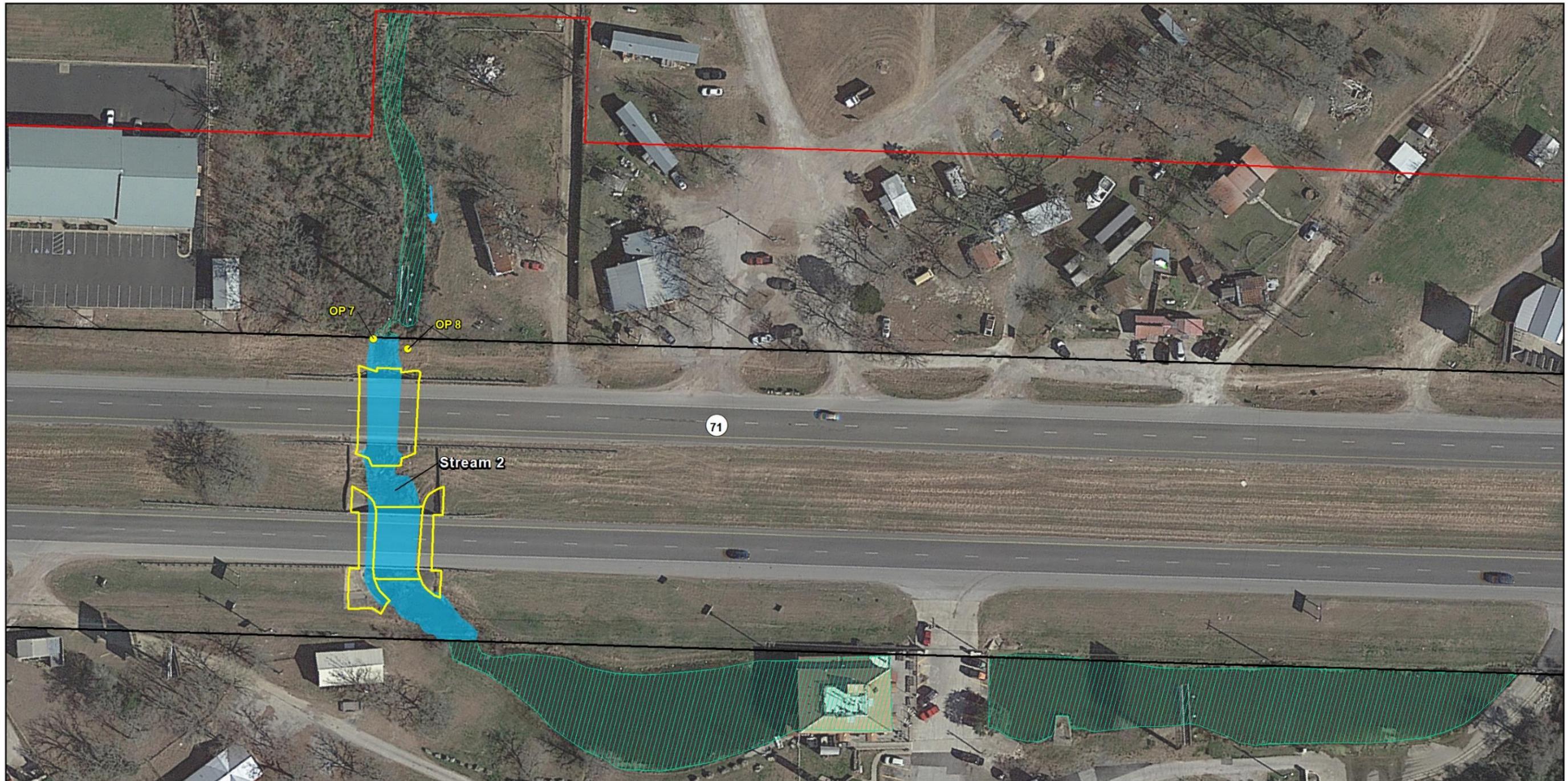


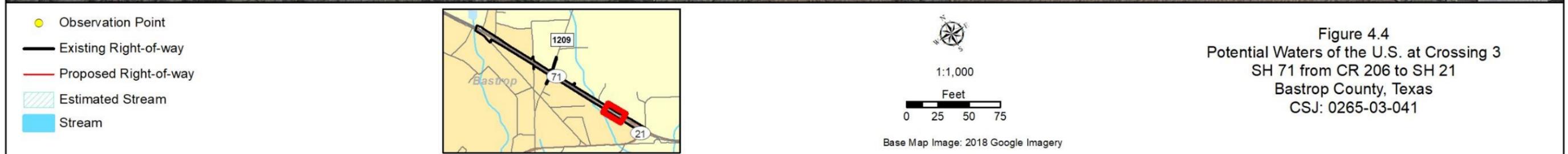
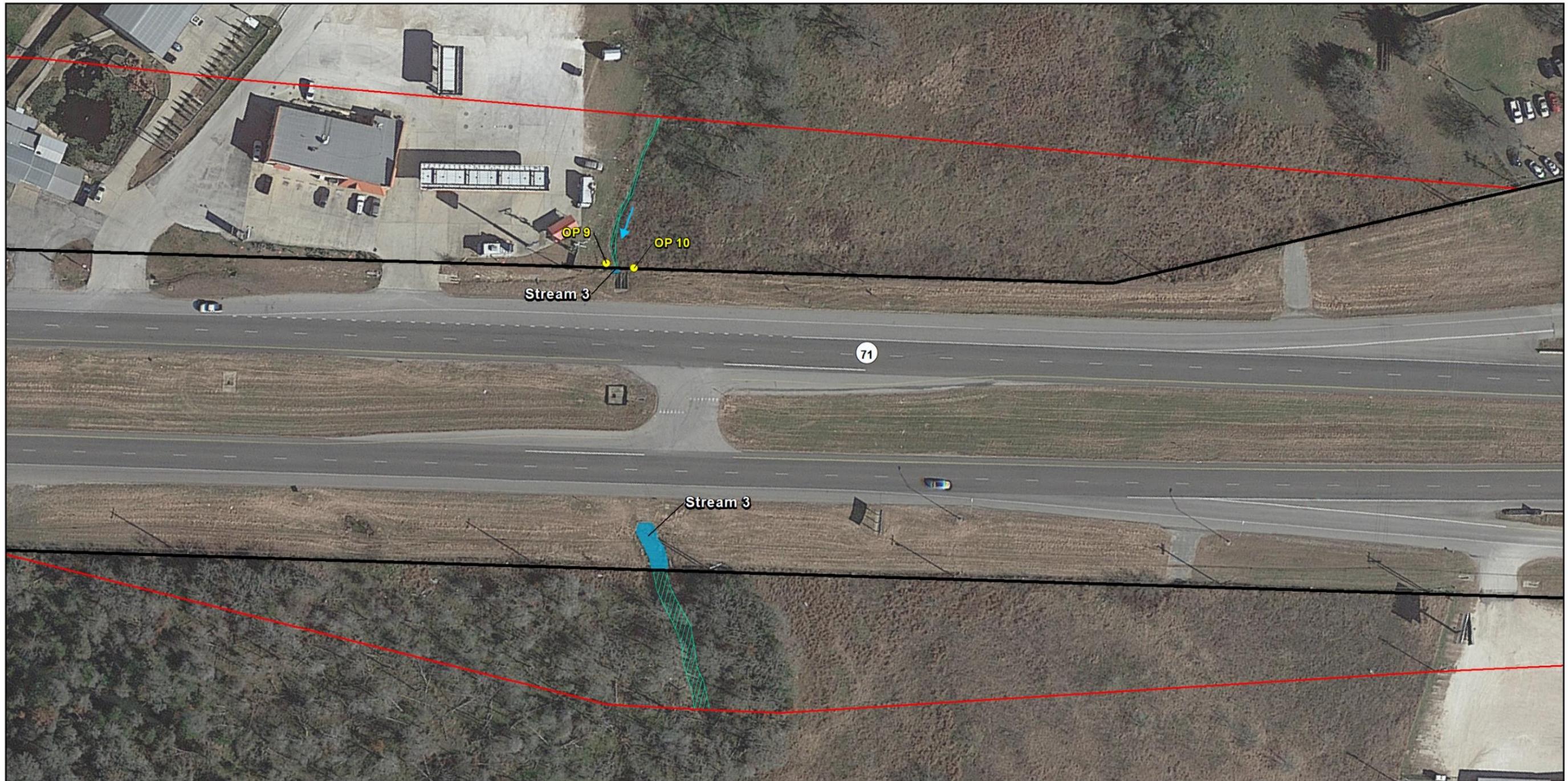
Figure 4.1
 Scour Feature 1
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041

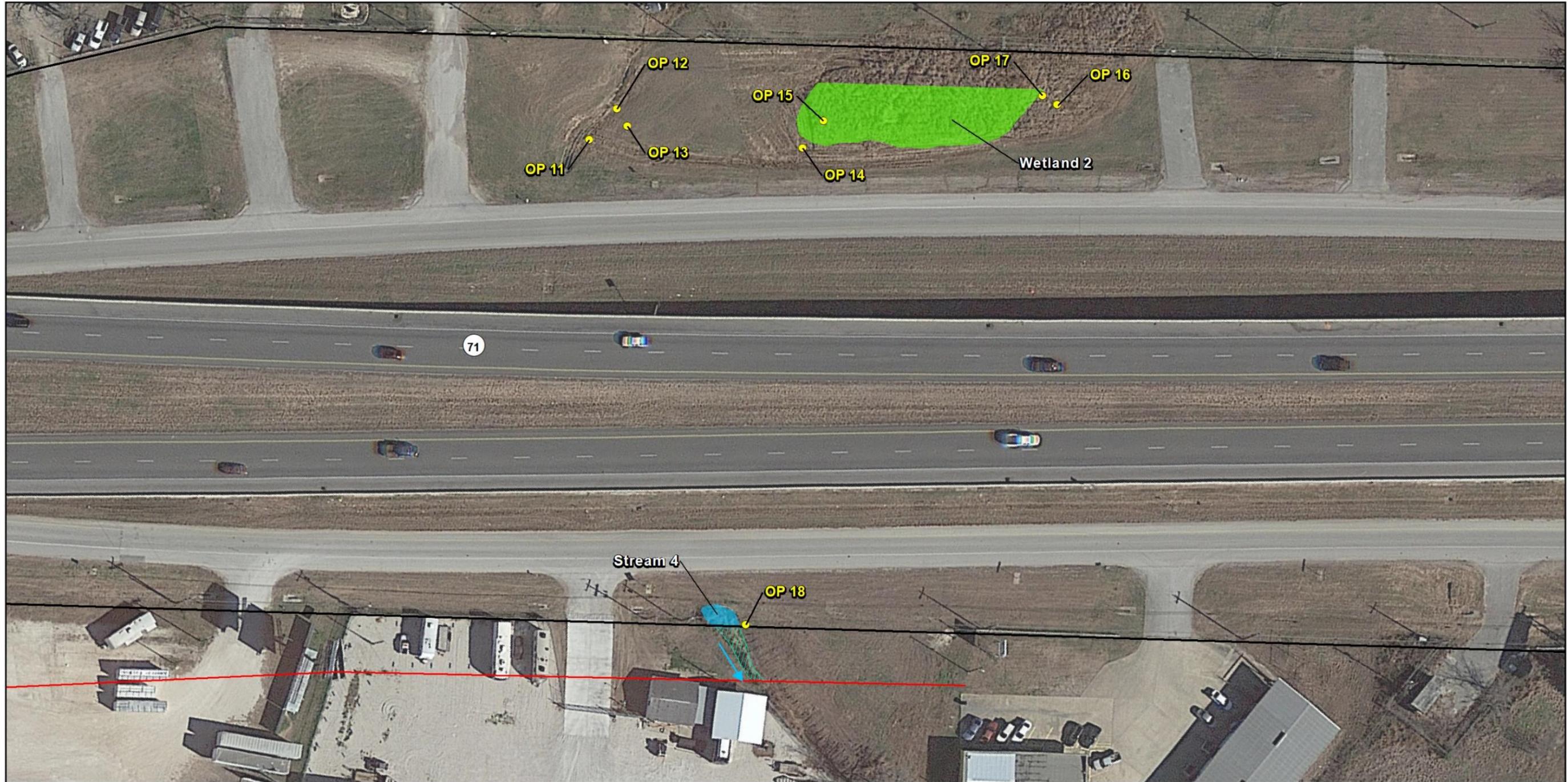


Figure 4.2
 Potential Waters of the U.S. at Crossing 1
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041

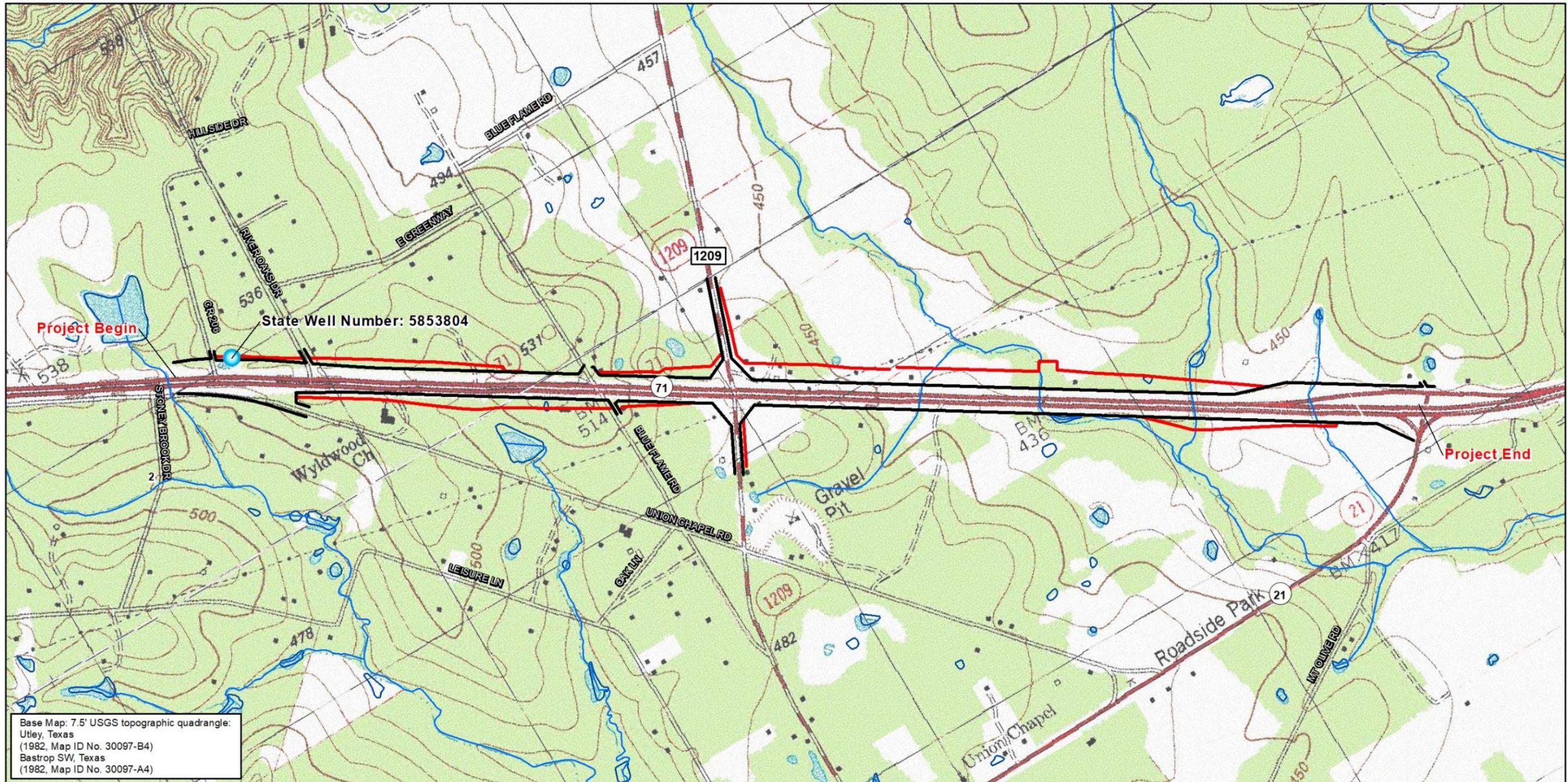


<ul style="list-style-type: none"> ● Observation Point Existing Right-of-way Proposed Right-of-way Existing Concrete Riprap Estimated Stream Stream 		<div style="text-align: center;"> <p>1:1,000</p> <p>Feet</p> <p>0 25 50 75</p> <p>Base Map Image: 2018 Google Imagery</p> </div>	<p style="text-align: center;"> Figure 4.3 Potential Waters of the U.S. at Crossing 2 SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041 </p>
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<ul style="list-style-type: none"> ● Observation Point — Existing Right-of-way — Proposed Right-of-way Estimated Stream Stream Wetland 		<div style="text-align: center;"> <p>1:800</p> <p>Feet</p> <p>Base Map Image: 2018 Google Imagery</p> </div>	<p style="text-align: center;"> Figure 4.5 Potential Waters of the U.S. at Crossing 4 SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041 </p>
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Base Map: 7.5' USGS topographic quadrangle:
 Utley, Texas
 (1982, Map ID No. 30097-B4)
 Bastrop SW, Texas
 (1982, Map ID No. 30097-A4)

- Water Well
- River/Stream (NHD)
- Existing Right-of-way
- Waterbody (NHD)
- Proposed Right-of-way

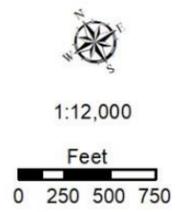
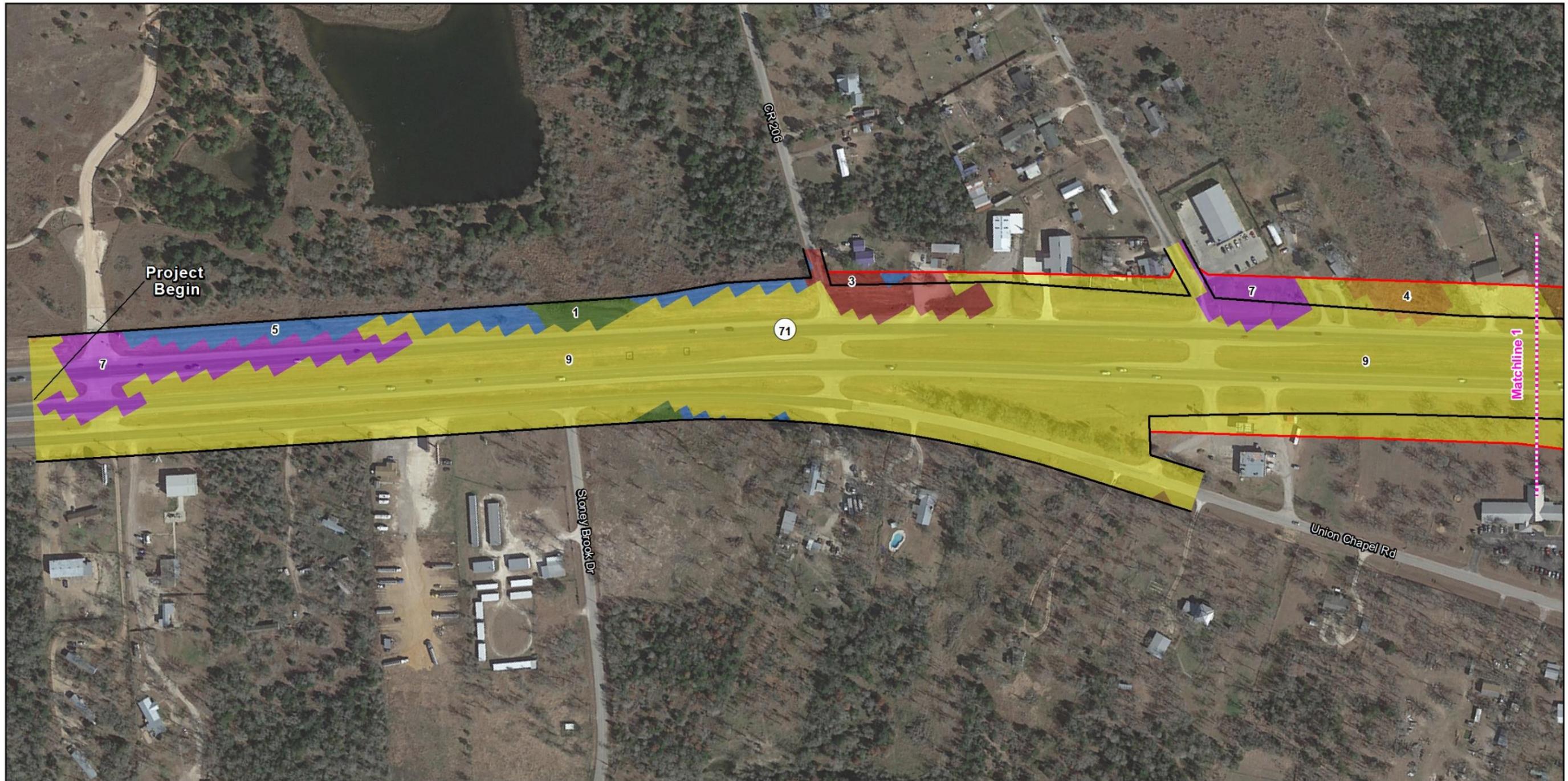


Figure 5
 Water Wells
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
- Proposed Right-of-way
- EMST**
- 1: Central Texas: Riparian Hardwood / Evergreen Forest
- 2: Central Texas: Post Oak / Yaupon Motte and Woodland
- 3: Native Invasive: Juniper Shrubland
- 4: Native Invasive: Mesquite Shrubland
- 5: Post Oak Savanna: Post Oak / Yaupon Motte and Woodland
- 6: Post Oak Savanna: Post Oak Motte and Woodland
- 7: Post Oak Savanna: Savanna Grassland
- 8: Post Oak Savanna: Post Oak / Yaupon Motte and Woodland
- 9: Urban Low Intensity

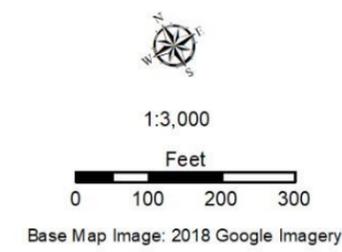
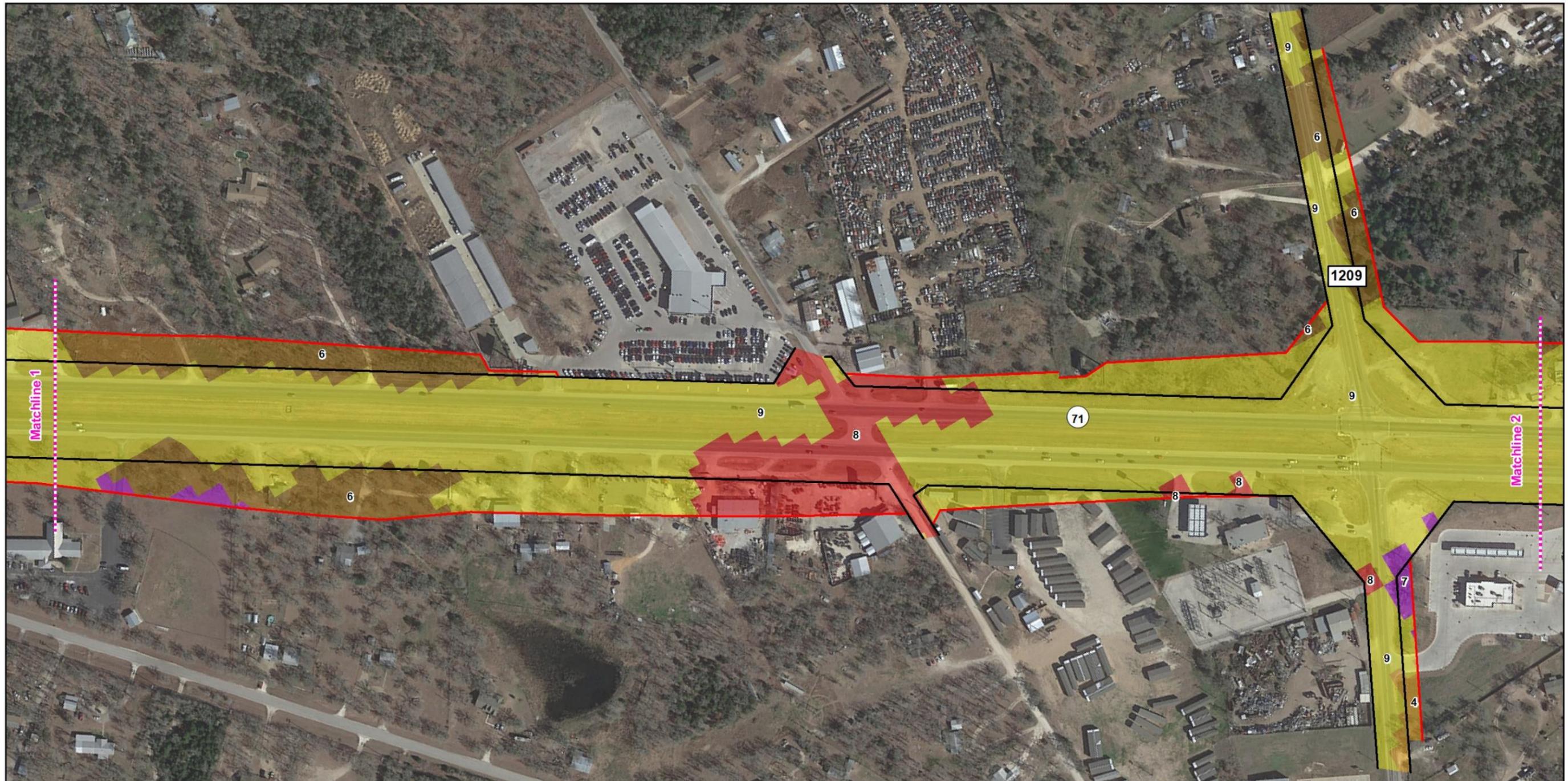


Figure 6.1
 Ecological Mapping Systems of Texas
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
 - Proposed Right-of-way
- EMST**
- 4: Native Invasive: Mesquite Shrubland
 - 6: Post Oak Savanna: Post Oak Motte and Woodland
 - 7: Post Oak Savanna: Savanna Grassland
 - 8: Urban High Intensity
 - 9: Urban Low Intensity

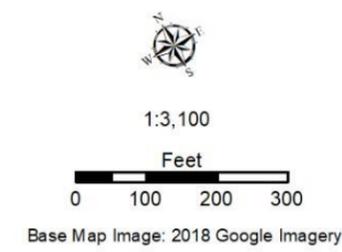
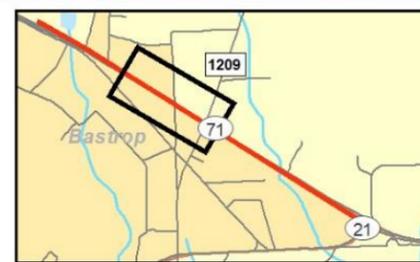
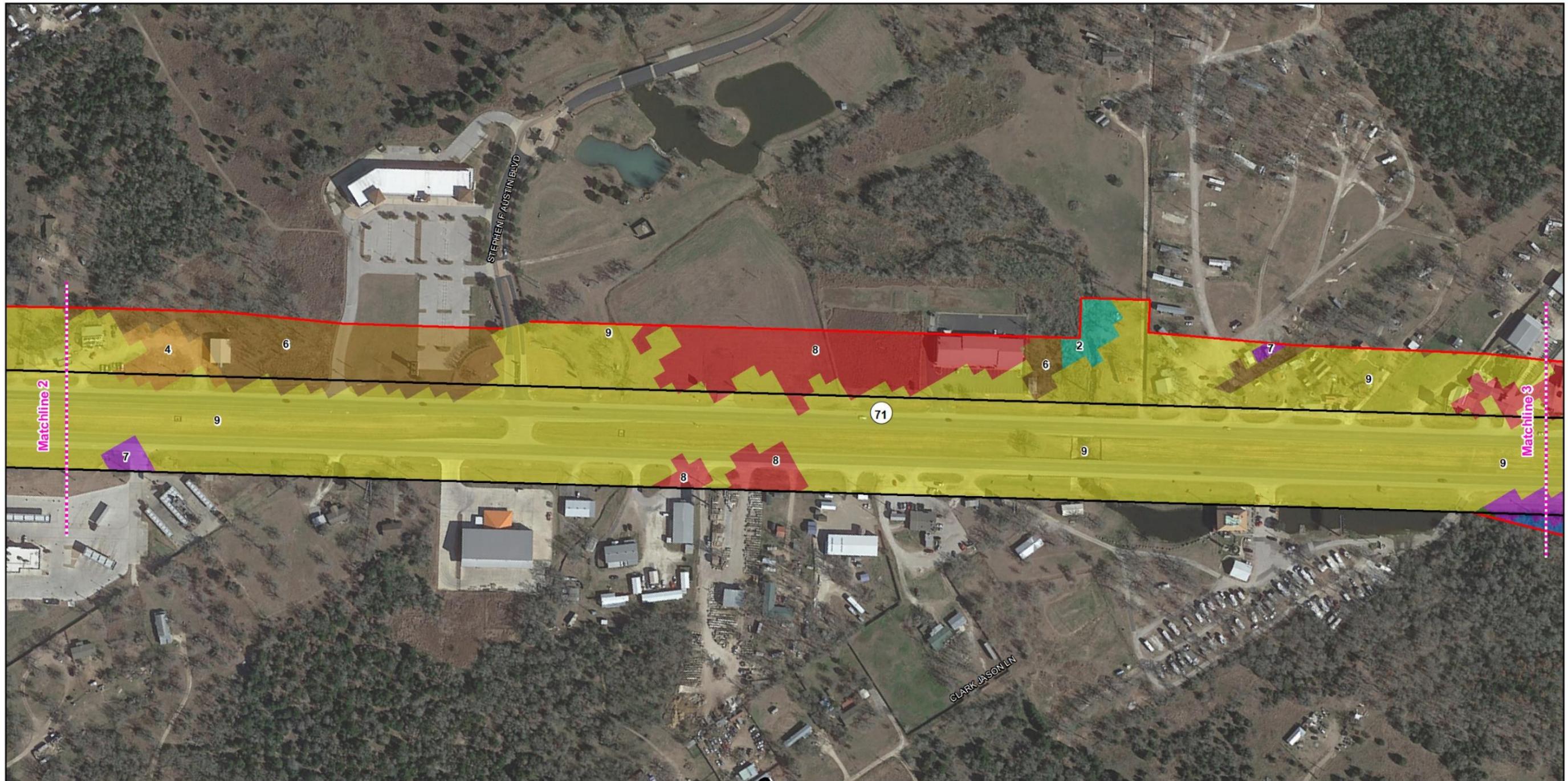
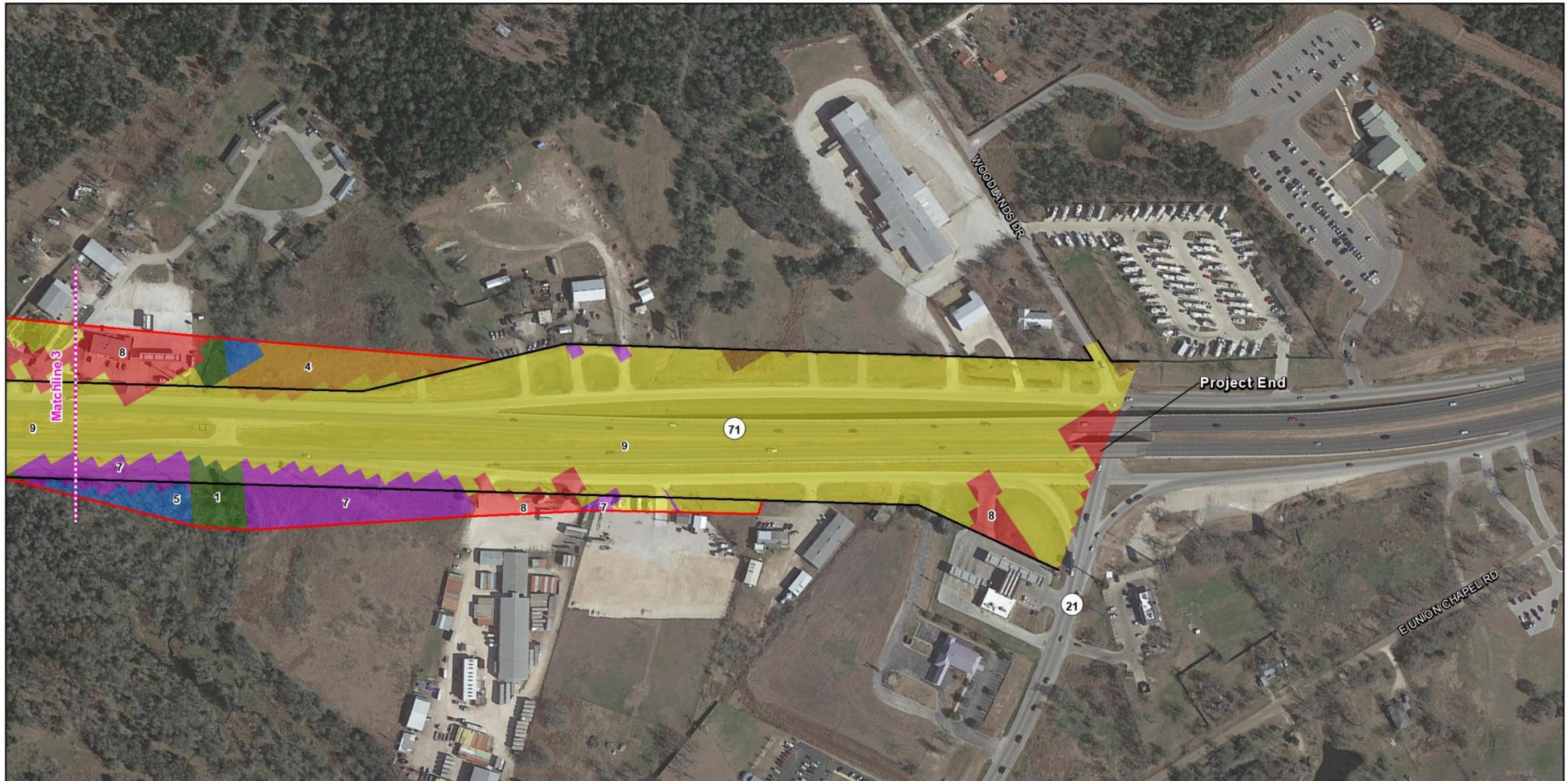


Figure 6.2
 Ecological Mapping Systems of Texas
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



<p>— Existing Right-of-way</p> <p>— Proposed Right-of-way</p> <p>EMST</p> <p>1: Central Texas: Riparian Hardwood / Evergreen Forest</p> <p>2: Central Texas: Riparian Hardwood</p> <p>4: Native Invasive: Mesquite Shrubland</p>	<p>5: Post Oak Savanna: Post Oak / Yaupon Motte and Woodland</p> <p>6: Post Oak Savanna: Post Oak Motte and Woodland</p> <p>7: Post Oak Savanna: Savanna Grassland</p> <p>8: Urban High Intensity</p> <p>9: Urban Low Intensity</p>		<p>1:3,100</p> <p>Feet</p> <p>0 100 200 300</p> <p>Base Map Image: 2018 Google Imagery</p>	<p>Figure 6.3 Ecological Mapping Systems of Texas SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041</p>
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- Existing Right-of-way
 - Proposed Right-of-way
- EMST**
- 1: Central Texas: Riparian Hardwood / Evergreen Forest
 - 4: Native Invasive: Mesquite Shrubland
 - 5: Post Oak Savanna: Post Oak / Yaupon Motte and Woodland
 - 6: Post Oak Savanna: Post Oak Motte and Woodland
 - 7: Post Oak Savanna: Savanna Grassland
 - 8: Urban High Intensity
 - 9: Urban Low Intensity

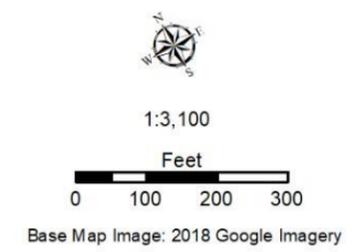
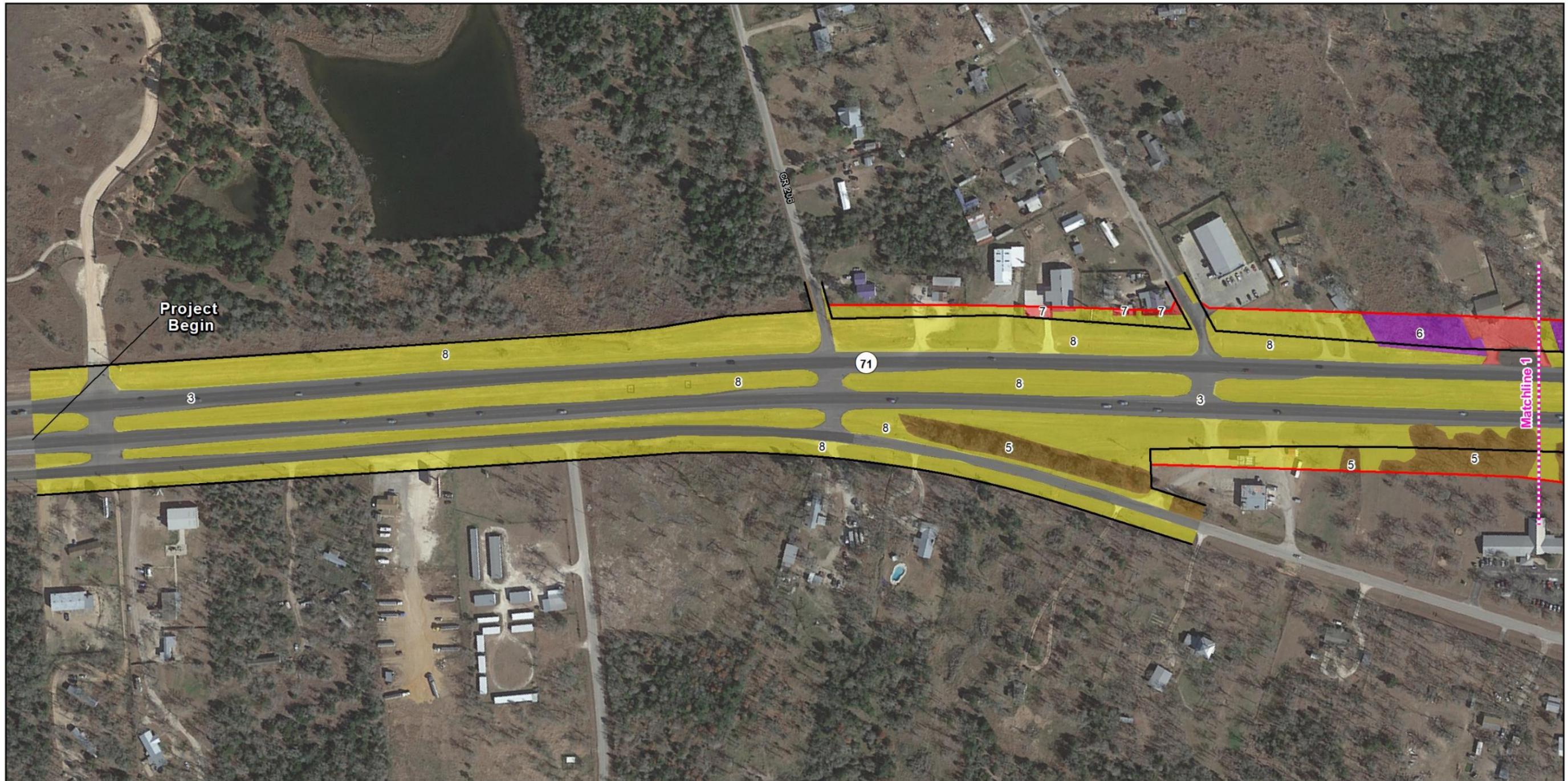


Figure 6.4
 Ecological Mapping Systems of Texas
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Existing Right-of-way
- Proposed Right-of-way
- Field-Verified Vegetation Types**
- 3: Existing Transportation
- 5: Post Oak Savanna: Post Oak Motte and Woodland
- 6: Post Oak Savanna: Savanna Grassland
- 7: Urban High Intensity
- 8: Urban Low Intensity

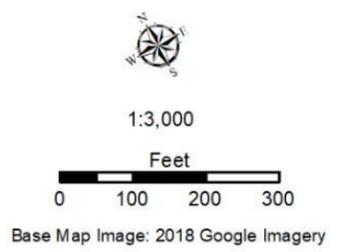
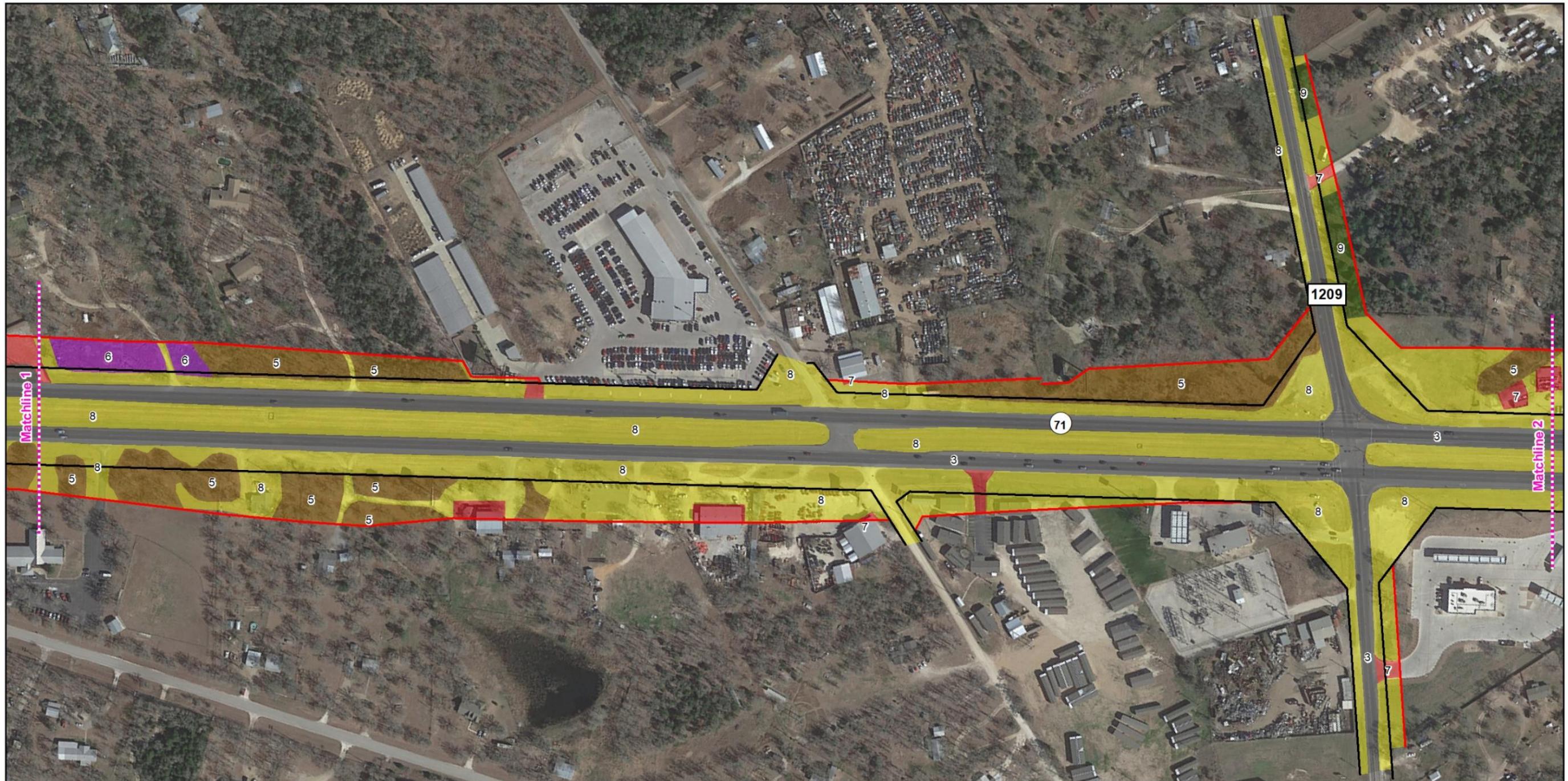
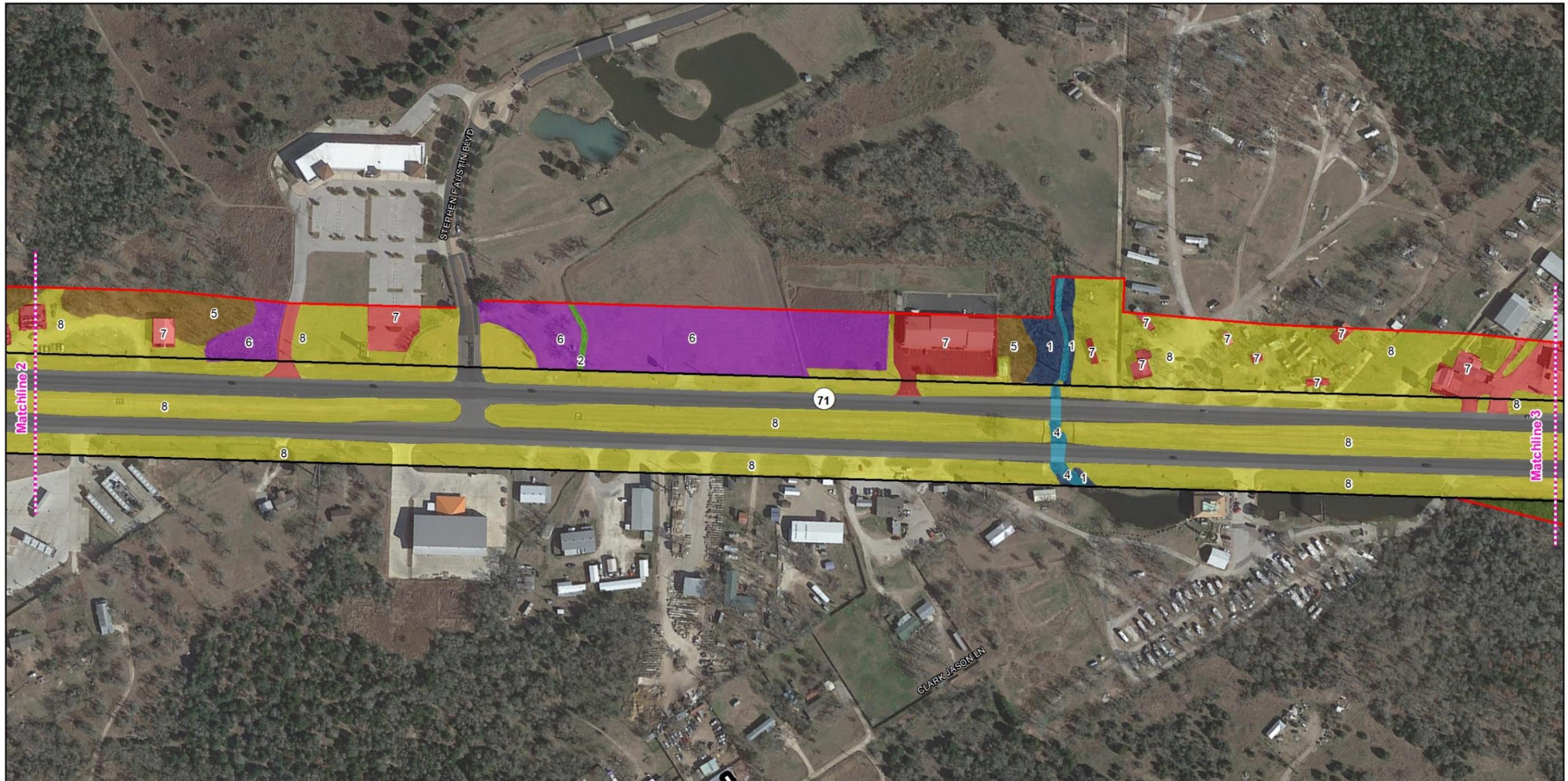


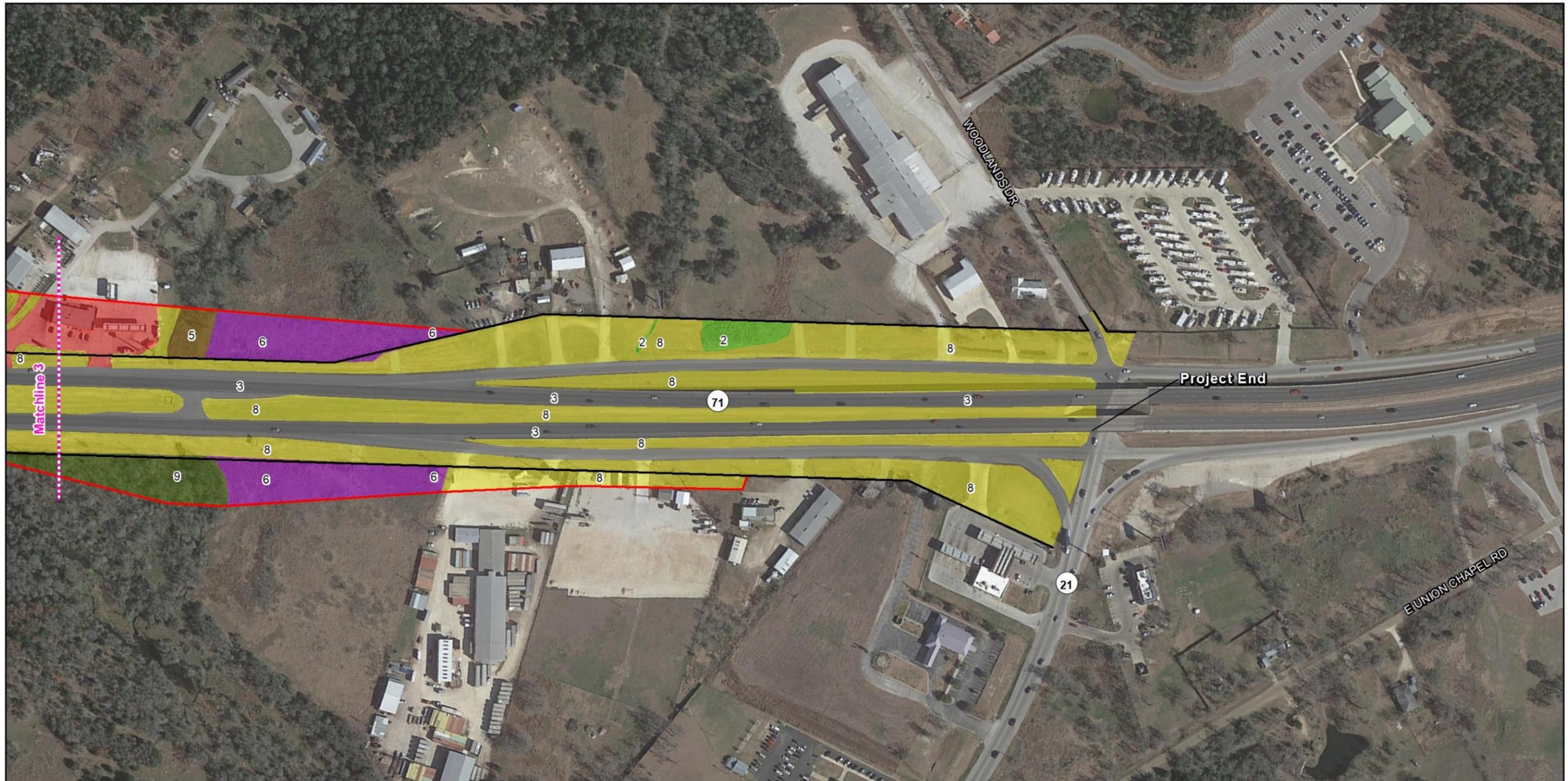
Figure 7.1
 Field-Verified Vegetation Types in the Project Area
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



<ul style="list-style-type: none"> — Existing Right-of-way — Proposed Right-of-way <p>Field-Verified Vegetation Types</p> <ul style="list-style-type: none"> 3: Existing Transportation 5: Post Oak Savanna: Post Oak Motte and Woodland 	<ul style="list-style-type: none"> 6: Post Oak Savanna: Savanna Grassland 7: Urban High Intensity 8: Urban Low Intensity 9: Post Oak Savanna: Post Oak/Red Cedar Motte and Woodland 		<p>1:3,100 Feet 0 100 200 300 Base Map Image: 2018 Google Imagery</p>	<p>Figure 7.2 Field-Verified Vegetation Types in the Project Area SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041</p>
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<ul style="list-style-type: none"> — Existing Right-of-way — Proposed Right-of-way <p>Field-Verified Vegetation Types</p> <ul style="list-style-type: none"> 1: Central Texas: Floodplain Deciduous Shrubland 2: Central Texas: Riparian Herbaceous Vegetation 3: Existing Transportation 4: Open Water 	<ul style="list-style-type: none"> 5: Post Oak Savanna: Post Oak Motte and Woodland 6: Post Oak Savanna: Savanna Grassland 7: Urban High Intensity 8: Urban Low Intensity 9: Post Oak Savanna: Post Oak/Red Cedar Motte and Woodland 		<p>1:3,000 Feet 0 100 200 300 Base Map Image: 2018 Google Imagery</p>	<p>Figure 7.3 Field-Verified Vegetation Types in the Project Area SH 71 from CR 206 to SH 21 Bastrop County, Texas CSJ: 0265-03-041</p>
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- Existing Right-of-way
- Proposed Right-of-way
- Field-Verified Vegetation Types**
- 2: Central Texas: Riparian Herbaceous Vegetation
- 3: Existing Transportation
- 5: Post Oak Savanna: Post Oak Motte and Woodland
- 6: Post Oak Savanna: Savanna Grassland
- 7: Urban High Intensity
- 8: Urban Low Intensity
- 9: Post Oak Savanna: Post Oak/Red Cedar Motte and Woodland

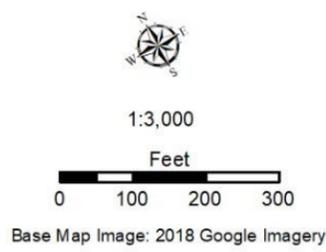
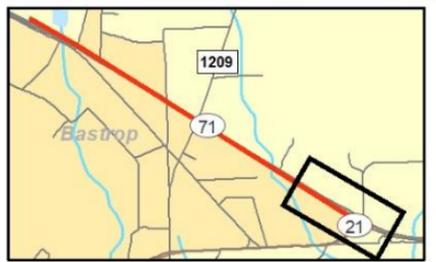
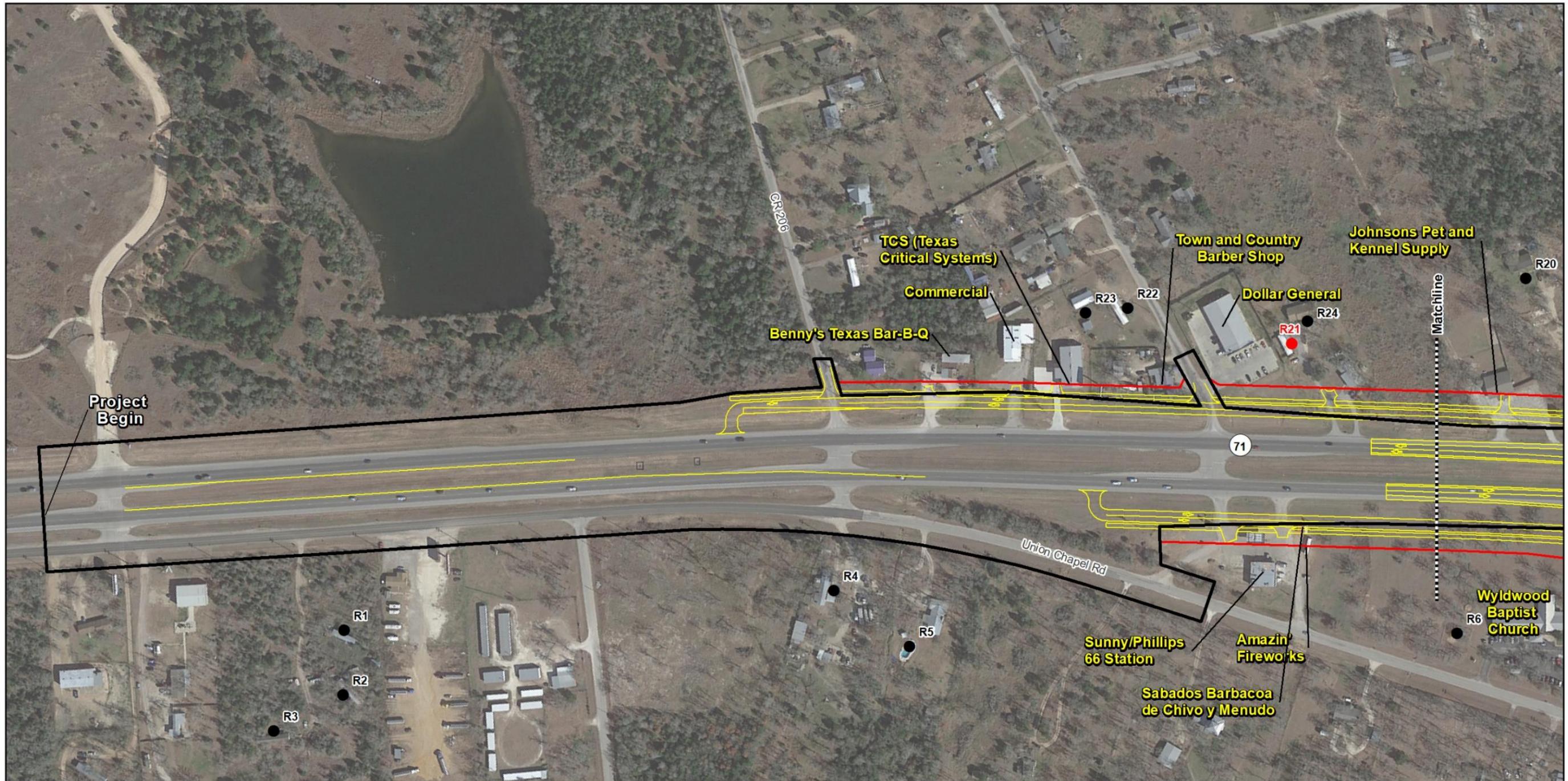


Figure 7.4
 Field-Verified Vegetation Types in the Project Area
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Non-impacted Receiver (R#)
- Impacted Receiver (R#)
- Proposed Right-of-way
- ▭ Existing Right-of-way
- Project Plan



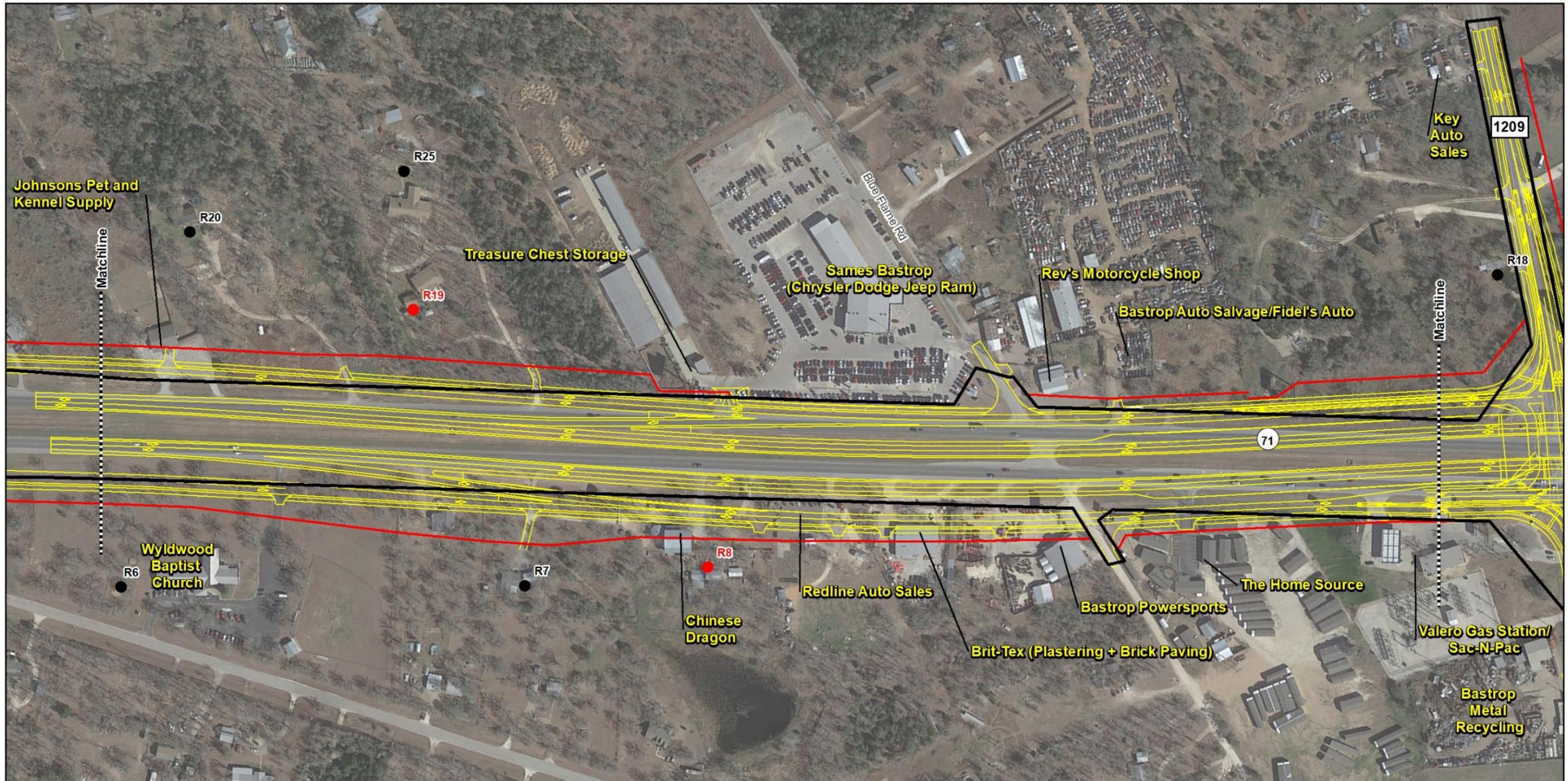
1:3,000

Feet



Base Map Image: Google Aerial Imagery 2018, provided by the Texas Imagery Service

Figure 8.1
 Noise Receiver Locations and Land Use
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Non-impacted Receiver (R#)
- Impacted Receiver (R#)
- Proposed Right-of-way
- Existing Right-of-way
- Project Plan

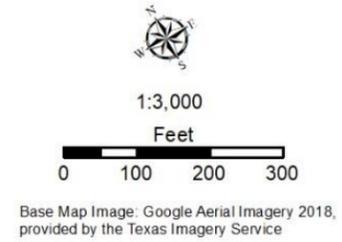
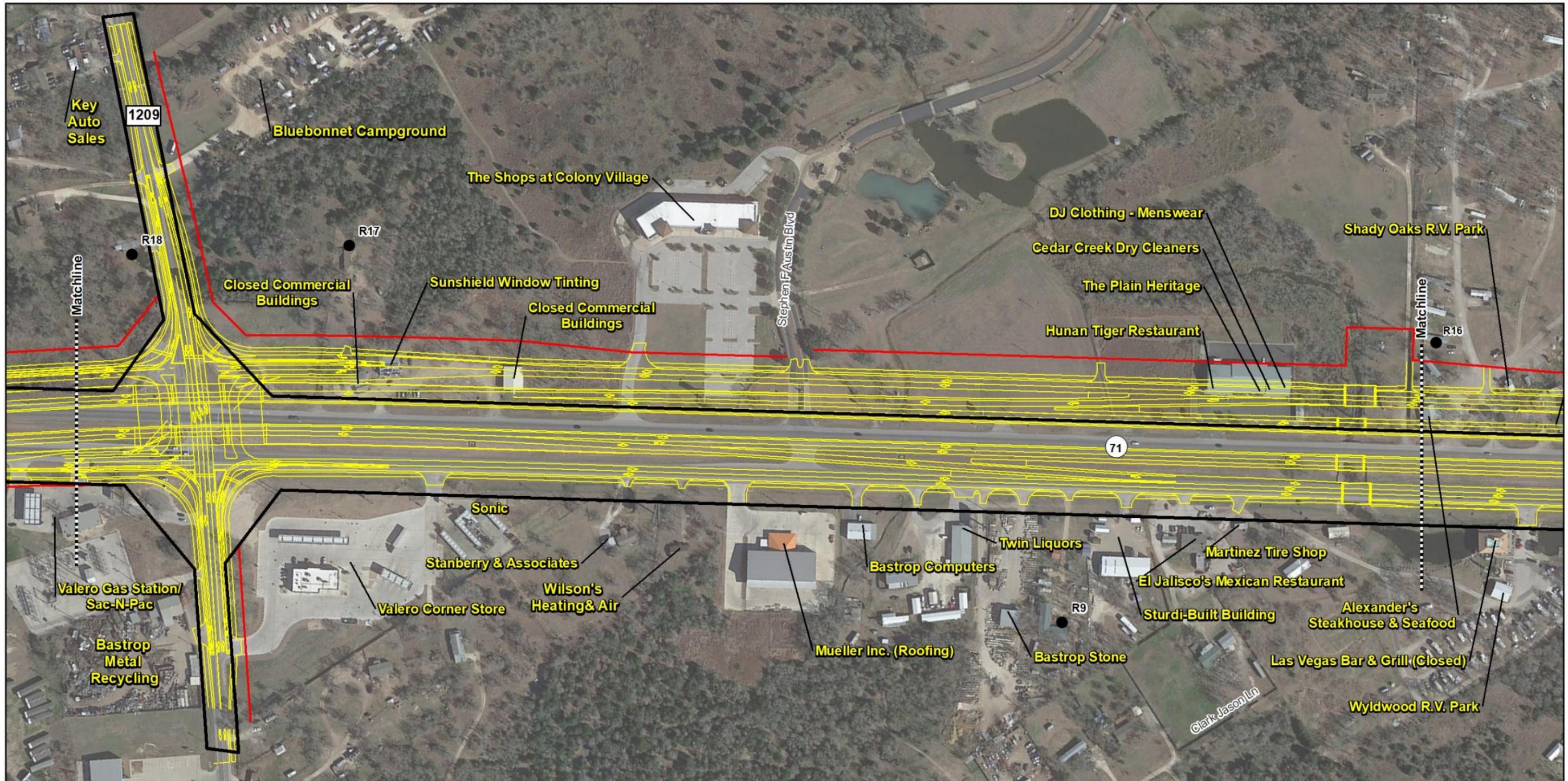
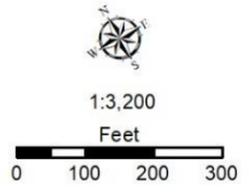


Figure 8.2
Noise Receiver Locations and Land Use
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

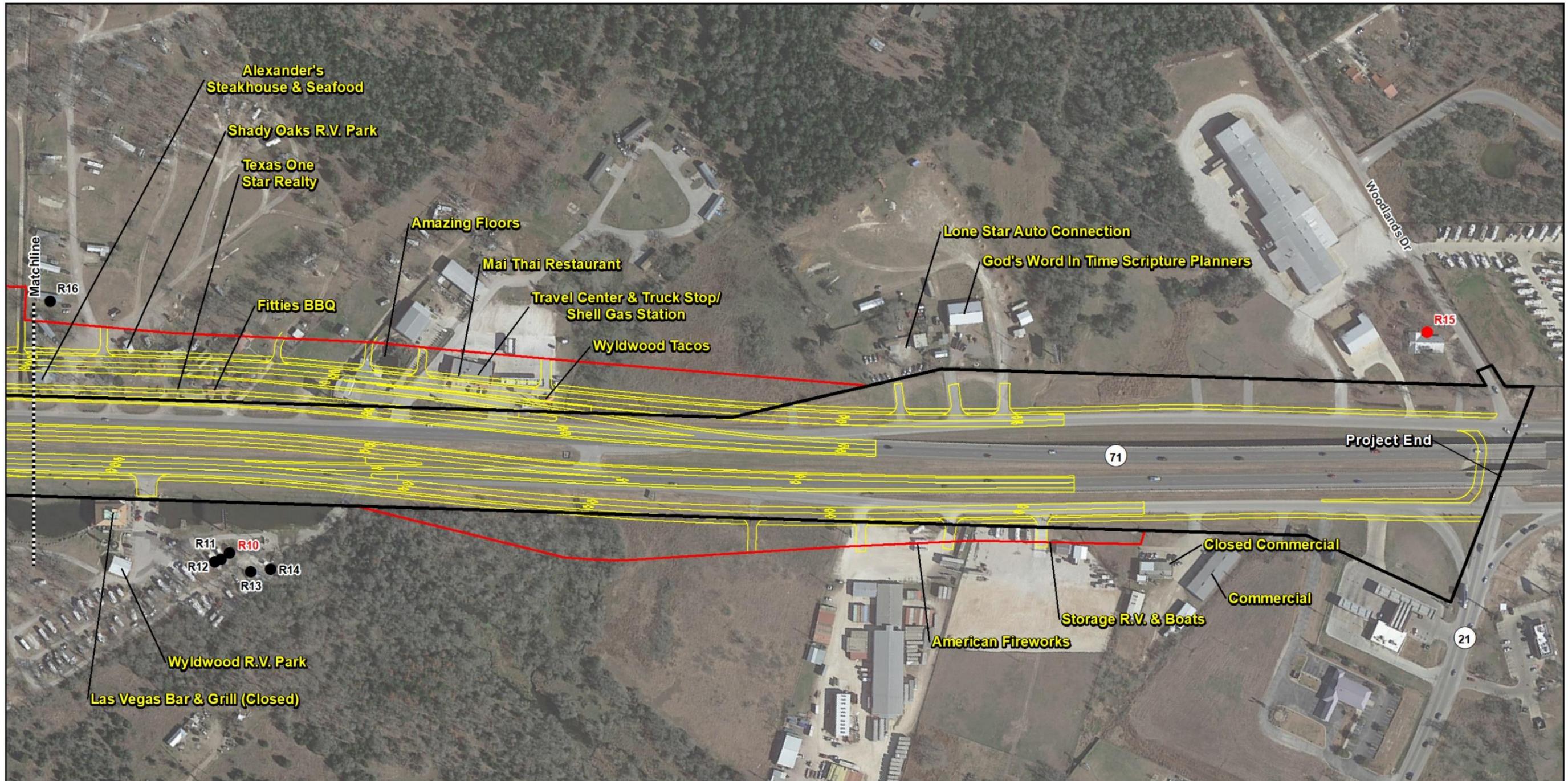


- Non-impacted Receiver (R#)
- Impacted Receiver (R#)
- Proposed Right-of-way
- Existing Right-of-way
- Project Plan

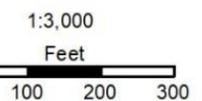


Base Map Image: Google Aerial Imagery 2018, provided by the Texas Imagery Service

Figure 8.3
 Noise Receiver Locations and Land Use
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041



- Non-impacted Receiver (R#)
- Impacted Receiver (R#)
- Proposed Right-of-way
- ▭ Existing Right-of-way
- Project Plan



Base Map Image: Google Aerial Imagery 2018, provided by the Texas Imagery Service

Figure 8.4
 Noise Receiver Locations and Land Use
 SH 71 from CR 206 to SH 21
 Bastrop County, Texas
 CSJ: 0265-03-041

Appendix G

Resource Agency Coordination

(Documentation of coordination with resource agencies will be added to this document as it becomes available)

Subject: FW: Early coordination request - SH 71 at FM 1209 - 0265-03-041

From: Jon Geiselbrecht <Jon.Geiselbrecht@txdot.gov>
Sent: Tuesday, February 5, 2019 8:47 AM
To: Dean Tesmer <dtesmer@blantonassociates.com>; Jim Langston, P.E. (langston@bridgefarmer.com) <langston@bridgefarmer.com>
Cc: Giuly Caceres <Giuly.Caceres@txdot.gov>
Subject: FW: Early coordination request - SH 71 at FM 1209 - 0265-03-041

Fyi – TPWD clear

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]
Sent: Monday, February 04, 2019 5:08 PM
To: Jon Geiselbrecht
Subject: RE: Early coordination request - SH 71 at FM 1209 - 0265-03-041

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

Jon,

Thank you for the KMZ and the information about the detention pond. I do not have any comments on the project. Thank you for applying the species BMPs.

Thank you for submitting the following project for early coordination: SH 71 grade separation at FM 1209 in Bastrop County (CSJ 0265-03-041). TPWD appreciates TxDOT's commitment to implement the practices listed in the Tier I Site Assessment submitted on December 17, 2018 and in subsequent emails. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife. According to §2.204(g) of the 2013 TxDOT-TPWD MOU, TxDOT agreed to provide TXNDD reporting forms for observations of tracked SGCN (which includes federal- and state-listed species) occurrences within TxDOT project areas. Please keep this mind when completing project due diligence tasks. For TXNDD submission guidelines, please visit the following link: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/submit.phtml

Thank you,

Sue Reilly
Transportation Assessment Liaison
Texas Parks and Wildlife
Wildlife Division
512-389-8021

From: Jon Geiselbrecht <Jon.Geiselbrecht@txdot.gov>
Sent: Wednesday, January 23, 2019 7:48 PM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: Early coordination request - SH 71 at FM 1209 - 0265-03-041

Here's a .kmz file. We were able to revise the drainage and remove the one detention pond on the north side of SH 71. Let me know if you need anything else. Thanks, Jon

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]
Sent: Friday, January 18, 2019 3:12 PM
To: Jon Geiselbrecht
Subject: RE: Early coordination request - SH 71 at FM 1209 - 0265-03-041

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

Jon,
Can you please send a schematic or KMZ that shows where the project impacts are, including the detention ponds?

Thank you,

Sue Reilly
Transportation Assessment Liaison
Texas Parks and Wildlife
Wildlife Division
512-389-8021

From: WHAB_TxDOT
Sent: Monday, December 17, 2018 1:44 PM
To: Jon Geiselbrecht <Jon.Geiselbrecht@txdot.gov>
Cc: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: Early coordination request - SH 71 at FM 1209 - 0265-03-041

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 41169. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

John Ney
Administrative Assistant
Texas Parks & Wildlife Department

Wildlife Diversity Program – Habitat Assessment Program
4200 Smith School Road
Austin, TX 78744
Office: (512) 389-4571

From: Jon Geiselbrecht [<mailto:Jon.Geiselbrecht@txdot.gov>]
Sent: Monday, December 17, 2018 12:08 PM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Subject: Early coordination request - SH 71 at FM 1209 - 0265-03-041

Please see attached Tier I Site Assessment for Early Coordination. Thanks,

Jon Geiselbrecht
TxDOT Austin District
512-832-7218

