



Final Environmental Assessment

I-35 Capital Express South

From: US 290W/SH 71 to SH 45SE

CSJ No. 0015-13-077 & 0016-01-113

Travis and Hays Counties, Texas

December 2021

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

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Acronyms

AAHC	Austin Affordable Housing Authority
ACT	Antiquities Code of Texas
ADA	Americans with Disabilities Act
ADT	Average daily traffic
APE	Area of Potential Effect
AOI	Area of Influence
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices
CAMPO	Capital Area Metropolitan Planning Organization
CBRA	Coastal Barrier Resource Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibels
dB(A)	A-weighted decibels
EA	Environmental Assessment
EB	Eastbound
EJ	Environmental Justice
EMST	Ecological Mapping systems of Texas
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ETJ	Extraterritorial Jurisdiction
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FM	Farm-to-Market
FPPA	Farmland Protection Policy Act
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
HACA	Housing Authority of the City of Austin
HOV	High-occupancy vehicle
I	Interstate
IBWC	International Boundary and Water Commission
IPaC	Information for Planning and Conservation
ISA	Initial Site Assessment
KAST	Kills and Spills Team
LEP	Limited English Speaking
Leq	Average or equivalent sound level
MBTA	Migratory Bird Treaty Act
mi	Miles
mph	Miles per hour
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organizations
MSAT	Mobile Source Air Toxics
MS4	Municipal Separate Storm Sewer System

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NB	northbound
NBML	North Bound Main Lanes
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NPS	National Park Service
NWP	Nationwide Permit
PA	Programmatic Agreement
PCN	Pre-Construction Notification
PCR	Project Coordination Request
PM	Particulate Matter
PPM	Parts-per-million
PS&E	Plans, Specifications, and Estimates
ROW	Right-of-way
RTP	Regional Transportation Plan
RTZ	Road to Zero
SB	southbound
SE	southeast
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
STIP	Statewide Transportation Improvement Program
SUP	Shared-use path
SWP3	Storm Water Pollution Prevention Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality'
THC	Texas Historical Commission
TMDL	Total Maximum Daily Load
TNM	Traffic noise modeling software
TP&P	Transportation Planning and Programming
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TSS	Total suspended solids
TTI	Texas A&M Transportation Institute
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	United States Army Corps of Engineers
USDOI	United States Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UTCTR	University of Texas Center for Transportation Research
UTP	Unified Transportation Program
VE	Value Engineering
VMT	Vehicle miles traveled
VPD	Vehicles per day

WB
WOTUS

westbound
Waters of the United States

1.0 Introduction

The Texas Department of Transportation (TxDOT) is proposing improvements to Interstate-35 (I-35) from United States 290 (US 290) West/State Highway (SH) 71 (SH 71) to SH 45 southeast (SE) in Travis County, with a transition area extending to Main Street in Buda, Hays County. The proposed improvements called “Capital Express South” would add two non-tolled managed high-occupancy vehicle (HOV) lanes in each direction, reconstruct intersections and bridges to increase bridge clearances and east/west mobility, and improve bicycle and pedestrian accommodations along I-35 frontage roads and at east/west crossings. The project length is approximately 10-miles (mi). The project would require the acquisition of approximately 13.45 acres of right-of-way (ROW). Refer to **Appendix A** for the Project Location Map.

2.0 Project Description

This Environmental Assessment (EA) has been prepared to comply with the requirements of the National Environmental Policy Act (NEPA) (42 U.S. Code [U.S.C.] Sections 4321 – 4375) and implementing regulations promulgated by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Part 1500) and the Federal Highway Administration (FHWA) (23 CFR Part 771). 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 (MOU) dated December 9, 2019, and executed by FHWA and TxDOT. The Draft EA was made available for public and agency review and a public hearing was held on April 27, 2021. The public and agency comment period was held from April 27, 2021 through May 26, 2021. After reviewing the public and agency comments, if TxDOT determines that there are no significant adverse effects, it will prepare and sign a Finding of No Significant Impact (FONSI), which will be made available to the public.

2.1 Existing Facility

The proposed project location is in an urban to suburban setting. The existing roadway experiences high traffic volumes throughout the day, as I-35 is one of only three north-south oriented controlled-access facilities in the Austin metropolitan area. Other substantial traffic generators in the vicinity of the project area include SH 71, Stassney Lane, William Cannon Drive, Slaughter Lane, Farm-to-Market (FM) 1626, and SH 45SE.

I-35 within the proposed project limits is an access-controlled interstate highway. The facility typically has three to four, 12-foot wide mainlanes (concrete barrier separated) with 2-foot wide inside shoulders, 4-foot wide outside shoulders, and two to three, 11-foot wide frontage road lanes with variable width inside shoulders up to 16 feet wide and variable outside shoulders up to 10 feet wide in each direction. The existing ROW width is typically 300 to 420 feet. The posted speed limit along I-35 in the proposed project area is 70 miles per hour (mph) on the mainlanes and 45 to 55 mph on the frontage roads. Sidewalks and shared-use paths (SUPs) exist intermittently throughout the project area between the frontage roads and adjacent businesses and around the intersections. Drainage along the roadway (mainlanes and frontage roads) is provided by open ditches.

The existing schematic and typical sections are presented in **Appendix C** and **Appendix D**, respectively.

2.2 Proposed Facility

The proposed facility consists of a separated concrete barrier and three to four, 11- to 12-foot wide mainlanes, two, 11- to 12-foot wide managed lanes, a 4-foot to 10-foot wide outside shoulder, 4-foot to 10-foot wide inside shoulder, two to three, 11-foot wide frontage road lanes, and a SUP in each direction. A 4-foot wide buffer would separate the mainlanes from the managed lanes. The proposed ROW would typically be 300 to 420 feet wide. The project schematic is shown in **Appendix C** and the typical sections are shown in **Appendix D**. Storm sewer is proposed to convey stormwater and would replace the ditches in some places. Curb and gutter would be added to frontage roads. The proposed project would require approximately 13.45 acres of additional ROW, including approximately 0.68 acre of proposed permanent drainage easement and 0.89 acres of floodplain management area. The project would require 3.15 acres of temporary construction easements and would require utility relocations.

The managed lanes would be elevated from north of Stassney Lane to south of William Cannon Drive. These lanes would be designed to achieve the most efficient and reliable travel times. Access to frontage roads would be maintained with the mainlanes and ramps would be better optimized for safety and mobility.

The proposed roadway would remain controlled access. Access to the mainlanes would remain, with some reconstruction of existing entrance and exit ramps. Additionally, all overpass/underpass and bridge locations would remain the same as existing, with minor to full reconstruction to accommodate the proposed improvements. Wishbone ramps are the two ramps that lead into the managed lanes. They are separated near the entry to the managed lanes, then come together as they travel in their respective north or south direction. The following ingress/egress points to the proposed managed lanes would be provided:

Southbound

- Ingress
 - At SH 71
 - Between Slaughter Creek Overpass and Onion Creek Parkway
- Egress
 - Between Slaughter Creek Overpass and Onion Creek Parkway
 - At SH 45SE
- Wishbone
 - At SH 71

Northbound

- Ingress
 - At SH 45SE
 - Between Slaughter Creek Overpass and Slaughter Lane

- Egress
 - At SH 71
 - Between Stassney Lane and SH 71
 - Between William Cannon Drive and Stassney Lane
- Wishbone
 - At Slaughter
 - At SH 71

Following completion of the proposed project, vehicles would access the elevated SB managed lane north of Stassney Lane via one 14-foot wishbone lane if they are accessing from the SH 71 interchange. At I-35 and Slaughter Lane, vehicles would be able to access the elevated NB managed lanes from the NB mainlanes. Vehicles traveling SB in the managed lanes would be able to access the SB mainlanes at designated points. There would also be access to the NB and SB managed lanes and mainlanes near SH 45SE.

There is a proposed SB collector-distributor system that begins north of Stassney Lane and ends south of William Cannon Drive. Proposed managed lane wishbone ramps would connect to SH 71/US 290.

The proposed project includes additional auxiliary lanes. Currently, there is a single auxiliary lane for both NB and SB directions between Stassney and William Cannon Drive. The proposed project would add an additional 12-foot wide auxiliary lane to the NB direction, starting around William Cannon Drive and continuing to Stassney, to bring the configuration to a total of two 12-foot wide auxiliary lanes. The SB direction would continue to have a single auxiliary lane in this section of the project corridor. Currently, there are no auxiliary lanes south of Slaughter Lane in either the NB or SB direction. The proposed project would add a single 12-foot wide auxiliary lane south of Slaughter Lane to both the NB and SB directions.

Additionally, new turn lanes at Slaughter Lane and Onion Creek Parkway would allow vehicles to travel more quickly through the intersections because they would not need to wait as long at traffic lights to reach the other side of the frontage road. A proposed south to north turnaround at SH 45SE would also allow vehicles to bypass the intersection and decrease travel times.

The proposed project would add through lane capacity to the following areas:

- Two northbound and two south bound non-tolled managed lanes from SH 71 to SH 45SE
- One additional frontage road in each direction from Slaughter Lane to SH 45SE

The proposed project would be constructed in two phases. The first phase would involve constructing the entirety of the project with the exception of the third NB and SB frontage road lanes between Onion Creek Parkway and FM 1327 and the proposed south to north turnaround at SH45 SE. The first phase would have intermittent widenings at various ramp locations between Onion Creek Parkway and FM 1327 and at the NB frontage road approach to Onion Creek Parkway. The first phase would be letting for construction in 2022. The second phase, which consists of building a continuous NB and SB third frontage lane between Onion Creek Parkway and FM 1327 and the proposed south to north turnaround at SH45 SE, would be built at a later date as funding becomes available.

The proposed project would add new sidewalks and SUPs along the I-35 NB and SB frontage roads from SH 71/US 290 to SH 45SE. Public transit would also be benefited as transit vehicles would be allowed on the managed lanes and it is anticipated that this access would decrease transit commute times.

2.3 Logical Termini and Independent Utility

Federal regulations require that federally funded transportation projects have logical termini (23 CFR 771.111(f)(1)). Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. The logical termini for the project are US 290W/SH 71 and SH 45SE. Due to the fact that they are major traffic generators, these termini were chosen to meet the demands of increased traffic along this corridor.

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area (23 CFR 771.111 (f)(2)). This means a project must be able to provide benefit by itself, and that the project does not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project has independent utility and would not preclude other foreseeable transportation improvements within the project area. The project provides congestion relief by widening and improving the existing roadway, which satisfies the project's need, and this would be true even if no other transportation improvements occur. Because the project stands alone, it cannot and does not irretrievably commit future federal funds. 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. This project has independent utility and would not restrict the consideration of alternatives for other foreseeable transportation improvements.

2.4 Planning Consistency

The anticipated total cost of the proposed project is approximately \$388 million including federal and state funding. The proposed project is described in the TxDOT 2021- 2024 Statewide Transportation Improvement Program (STIP) and the Capital Area Metropolitan Planning Organization (CAMPO) 2045 Regional Transportation Plan (RTP) (TxDOT, 2021a; CAMPO, 2020). See **Appendix E—Plan and Program Excerpts**.

3.0 Need and Purpose

3.1 Need

The I-35 Capital Express South project is needed because the capacity of I-35 between US 290W/SH 71 and SH 45SE is inadequate to meet current and future traffic volumes, resulting in congestion, reduced mobility, and reduced safety.

3.2 Supporting Facts and/or Data

The population in the vicinity of the proposed project area has experienced rapid growth in the past two decades. According to population counts in 2010–2014, the population in Austin has increased by 31.6 percent since the year 2000 (USA.com, 2020). For comparison, the State of Texas as a whole grew 25.1 percent in the same time period (USA.com, 2020).

This increased population growth led to an increase in traffic volume. Traffic analysis data projects the average daily traffic (ADT) for the project limits to increase 35.3 percent from 246,445 to 333,441 vehicles per day from the year 2024 to 2045. Furthermore, the Texas A&M Transportation Institute (TTI) produces an annual list of the 100 most congested road sections in Texas, and for 2020 I-35 from SH 71 to Slaughter Lane was ranked number 12 and I-35 from Slaughter lane to SH 45SE was ranked number 45 (TTI, 2020).

As shown in **Table 1**, 2030 traffic modeling data forecasts that the proposed project would result in time savings during morning rush-hour of 17 minutes for the NB mainlanes and 15 minutes for the SB mainlanes when compared to the No-Build Alternative. The proposed project would result in 8 minutes of time savings for the SB mainlanes during evening rush hour and no time savings for NB travel evening rush-hour. The managed lanes would result in morning rush hour time savings of 18 minutes for NB travel and 16 minutes for SB travel. Managed lanes time savings for evening rush hour would be 1 minute for NB travel and 25 minutes for SB travel when compared to the No-Build Alternative (TxDOT, 2020b).

Table 1: Capital Express South Time Savings in 2030

Year and Travel Lane	Northbound AM Travel Time	Time Savings from No-Build Alternative	Northbound PM Travel Time	Time Savings from No-Build Alternative
2030 Mainlanes	8 minutes	17 minutes	8 minutes	0 minutes
2030 Managed Lanes	7 minutes	18 minutes	7 minutes	1 minute
2030 No-Build Alternative	25 minutes	NA	8 minutes	NA
Year and Travel Lane	Southbound AM Travel Time	Time Savings from No-Build Alternative	Southbound PM Travel Time	Time Savings from No-Build Alternative
2030 Mainlanes	8 minutes	15 minutes	24 minutes	8 minutes
2030 Managed Lanes	7 minutes	16 minutes	7 minutes	25 minutes
2030 No-Build Alternative	23 minutes	NA	32 minutes	NA

TxDOT, 2020b

Increased population growth in the communities surrounding the project area, along with increased traffic demand along the corridor, has led to congestion that doesn't allow the facility to operate as safely as it should within the proposed project area. TxDOT's Crash Record Information System was used to analyze the crash data along I-35 from US 290W/SH 71 to SH 45SE. An analysis of six calendar years 2013 to 2018 were utilized. The crash rate for a roadway is defined as the number of crashes per 100 million vehicle-miles traveled. It is standardized for each type of roadway in Texas and this standard may be compared to the rate for a particular roadway. **Table 2** includes the crash rates for I-35 from US 290W/SH 71 to Main Street in Buda and the statewide averages for comparable types of roadways.

Table 2: Crash Rate Comparison

Year	I-35 Capital Express South Total Crashes	I-35 Capital Express South Crash Rate	Statewide Average Crash Rate – Urban Interstate Highways
2013	495	85.39	95.23
2014	439	78.62	113.17
2015	550	90.67	148.09
2016	656	105.89	150.96
2017	662	109.10	146.40
2018	753	123.20	144.32

TxDOT, 2020c

Overall, the total number of crashes from 2013 to 2018 increased approximately 52 percent, from 495 in 2013 to 753 in 2018 (TxDOT, 2020c). While the crash rates occurring on I-35 within the project area are lower than the statewide average for an urban interstate highway, the rate of crashes is increasing. Data recorded within the project area from 2013 to 2018 show the crashes on I-35 within the proposed project limits indicate a need to improve operational characteristics and improve mobility.

The proposed project would provide crash reduction benefits to I-35 within the project limits. The benefits include preserving recently constructed improvements, at Stassney Lane and William Cannon Drive; wider travel lanes and shoulders, which reduce crashes by 10 and 50 percent, respectively; and the southbound bypass lane system from north of Stassney Lane to south of William Cannon Drive, which removes major merging and weaving operations from the mainlanes and reduces through traffic at intersections. Adding auxiliary lanes reduces crashes by 20 percent (TxDOT, 2020b).

The proposed improvements would increase safety for motorists and bicyclists/ pedestrians and bring TxDOT closer to achieving the goals of the End The Streak safety campaign.

3.3 Purpose

The purpose of the proposed project is to increase mobility and safety on I-35 for the traveling public.

4.0 Alternatives

4.1 Build Alternative(s)

The proposed project would add two non-tolled managed lanes in each direction along I-35 from US 290W/SH 71 to SH 45SE, as described in Section 2.2. The proposed Build Alternative meets the purpose and need because it would increase mobility and safety on the existing corridor. The Build Alternative is the Preferred Alternative. The proposed project is anticipated to cost approximately \$388 million including federal and state funding.

An open house was held in October 2019 with no elevated structure proposed. In January 2020, a value engineering (VE) study was conducted per federal guidelines. Recommendations from the VE study included safety and operational enhancements in line with the Road to Zero (RTZ) initiative. A southbound bypass system and elevated managed lanes were incorporated to achieve the following benefits:

- Forced merge developed into an auxiliary lane (20 percent crash reduction)
- 12-foot-lane width compared to 11-foot-lane width (10 percent crash reduction)
- Desirable shoulder widths (50 percent crash reduction)
- South Austin residents have improved travel times to hospital and medical centers
- Incident/emergency response times are improved
- Mitigation of rear-end collisions from queuing or stopped traffic
- Allows direct access transit, carpoolers, and vanpools from mainlane to frontage road/SH 71 interchange without weaving across interstate through traffic which is a root cause of congestion and crashes
- HOV/transit trips from FM 1626, Onion Creek, and Slaughter Creek can access northbound mainlanes (NBML) without weaving across interstate through traffic or traversing additional traffic signals
- South Austin residents can avoid I-35 mainlanes for short trips by using the bypass lanes, keeping slower moving vehicles entering and exiting traffic off the mainlanes
- Direct access to the mainlanes for transit, carpoolers, and vanpools
- Reduction in traffic through signalized intersections

4.2 No-Build Alternative

Under the No-Build Alternative, the proposed improvements to I-35 would not be constructed. The No-Build Alternative would not require the conversion of approximately 13.45 acres from existing land uses to transportation use (ROW) nor would other project-related impacts occur. The No-Build Alternative would not increase mobility and safety in the project area. Consequently, the anticipated benefits of the proposed project would not be realized and continued population growth and development in the region would occur, leading to reduced mobility and safety along I-35 within the project limits. For this reason, the No-Build Alternative does not meet the purpose and need for the proposed improvements and is not the recommended alternative.

Although the No-Build Alternative fails to meet the project's purpose and need and is not the recommended alternative, it was carried forward (per the requirements of NEPA) as the

baseline for comparison. The No-Build Alternative is evaluated in this EA along with the Build Alternative.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

One preliminary alternative was considered but has been eliminated from further consideration.

Alternative 1: This preliminary alternative proposed two managed lanes at grade beginning south of US 290W/SH 71 and continuing to SH 45SE. Proposed enhancements to this alternative were identified through the VE study process to further improve safety benefits and reliable travel times. Incorporating the enhancements into Alternative 1 would require reconstruction of the \$79.9 million Stassney Lane and William Cannon Drive project (currently under construction), and cause additional ROW impacts, which, ultimately resulted in the elimination of the alternative from consideration.

A variation of Alternative 1 could be placing the managed lanes in a tunnel below grade. This was also found to be unviable due to conflicts with existing drainage systems and infrastructure. Drainage for the depressed SH71 mainlanes at the interchange with I-35 is provided by a 15'x15' drainage tunnel that runs parallel to and then crosses underneath the I-35 mainlanes just north of Williamson Creek. This crossing is near where the connections to/from the managed lanes to the flyovers of the SH71/290 interchange are made. A managed lane tunnel would have to pass underneath the drainage tunnel crossing which would then put the drainage tunnel in conflict with the connections to the SH71/290 flyover ramps.

Additional studies were performed to understand the overall safety improvements that could be gained from the implementation of the proposed Build Alternative analyzed in this EA vs. Alternative 1. This analysis identified that when compared to the Alternative 1, the proposed Build Alternative would have up to an 81 percent reduction in conflict points. As seen in the data, a reduction in conflict points generally leads to a reduction in potential crashes. The analysis also identified that the proposed Build Alternative would have a 28.2 percent reduction in total crashes when compared to the No-Build Alternative, whereas Alternative 1 would only have an 8.2 percent reduction relative to No-Build Alternative. Reduction in severe crashes is also expected for both the proposed Build Alternative and Alternative 1. It is anticipated that the proposed Build Alternative would see a reduction of approximately 23 severe crashes, and Alternative 1 would only see 7 severe crash reductions compared to the No-Build Alternative.

When evaluating crash rates, compared with the No-Build, Alternative 1 and the proposed Build Alternative would have a reduction of 31.7 percent and 48.3 percent, respectively. The proposed Build Alternative has a 63.2 percent reduction in crash rate comparing with Alternative 1 in anticipated crash rate per 100 million VMT per year. Lastly, the analysis evaluated potential safety cost benefits. Overall, comparing with the No-Build, Alternative 1 saves about \$6.2 million per year, and the proposed Build Alternative helps save about \$20.6 million per year. Comparing with Alternative 1, the proposed Build Alternative saves 232.3 percent more crash costs per year (UTCTR 2021).

Overall, the analysis showed that the proposed Build Alternative would have a greater reduction in conflict points, lower crash rates, lower severe crash rates and would provide a higher safety cost benefits than Alternative 1. It is for these reasons, Alternative 1 was eliminated from further consideration.

5.0 Affected Environment and Environmental Consequences

Several technical reports and other documentation were prepared in support of this EA. A list of these reports is presented below in **Table 3** and a summary of these reports is included in the respective sections below. The complete technical reports are on file and are available for review at the TxDOT South Travis/Hays County Area Office. Documents can also be found online at <https://my35capex.com/>.

Table 3: List of Technical Documents Cited

Technical Reports or Document	Date
Archeological Studies Background Review	5/2020
Archeological Studies Background Review – Addendum Memo	3/2021
Species Analysis Form	1/2021
Species Analysis Spreadsheet	1/2021
Species Analysis Spreadsheet: Update	11/2021
Tier I Site Assessment	1/2021
Surface Waters Analysis Form	11/2020
Historical Studies Project Coordination Request	4/2020
Historic Resources Research Design	10/2020
Historic Resources Survey Report	1/2021
Hazardous Material Initial Site Assessment (ISA) Report	2/2021
Hazardous Material Initial Site Assessment (ISA) Report: Update	6/2021
Carbon Monoxide Traffic Air Quality Analysis	3/2021
Mobile Source Air Toxics Report	3/2021
Community Impact Assessment Technical Report	3/2021
Wetland Delineation Report	11/2020
Traffic Noise Analysis Technical Report	3/2021
Traffic Noise Analysis Technical Report; Update	7/2021

Source: Project Team 2020 and 2021

5.1 Right-of-Way/Displacements

The proposed project would require approximately 13.45 acres of new ROW between the northern and southern project limits (see schematic in **Appendix C**) including approximately 0.68 acre of proposed permanent drainage easement and 0.89 acres of floodplain management area. The project would require 3.15 acres of temporary construction easements. The Build Alternative would not result in any residential or commercial displacements, as reported in the Community Impacts Assessment Technical Report. All ROW acquisition would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1979, as amended.

The No-Build Alternative would not require the acquisition of new ROW; therefore, would not result in any residential or commercial displacements.

5.2 Land Use

The proposed project area includes portions of Travis and Hays counties, and the cities of Austin and Buda. Land uses within the northern portion of the project area consist of urban and commercial development, including hotels, car dealerships, and strip malls. The southern portion of the community study area is generally more suburban with a mix of undeveloped agricultural land, multi-family developments, and single-family residential. **Table 4** shows the acres of each type of land use and **Figure 1** in **Appendix F** shows the land use in the proposed project area.

Table 4: Land Use Acreage

Land Use Type	Acreage
Agricultural	3,747.9
Commercial Office	1,743.9
Educational	1,355.6
Institutional	982.7
Mining Landfill	915.7
Multi-Family Residential	766.3
Parks Open Space	762.3
Rail Transportation	102.1
Single-Family Residential	80.3
Undeveloped	16.7
Utilities	7.7

In the northern portion of the project area, the land uses are primarily urban and commercial development, including hotels, car dealerships, strip malls, and schools. The general area surrounding the southern portion of the project area is more suburban with a mix of agricultural, multi-family developments, and single-family residential. The names of the neighborhoods are Franklin Park, Comal Bluff, Lincoln Ridge, Circle S Ridge, Bluff Springs, South Bend, Park Ridge, South Park Meadows, and Onion Creek. There are a few undeveloped parcels; however, none are being used for cropland, pasture, or range land. Refer to **Appendix B** for project photos.

The proposed project would require approximately 13.45 acres of new ROW between the northern and southern project limits. However, the project would not result in any displacements, and would not substantially alter the existing land uses in the project area.

Vegetation in the project area consists of maintained roadside grasses and forbs within existing ROW. Landscaped grasses, forbs, shrubs, and scattered trees are located within developed areas. Landscaped portions of the ROW include live oak, eastern redbud, and cedar elm.

The No-Build Alternative would not directly impact existing land uses.

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 the following: (1) prime farmland, (2) unique farmland, and (3) farmland of local or statewide importance. Under the FPPA, transportation projects conducted by a federal agency or with federal agency assistance that irreversibly convert protected farmland (directly or indirectly) to non-agricultural use are required to coordinate with the National Resources Conservation Service.

Projects considered exempt under the FPPA include those that require no additional ROW or require ROW that is developed, urbanized, or zoned for urban use. The proposed project would require additional ROW; therefore, the project is not exempt under the FPPA.

The project was scored using Natural Resources Conservation (NRCS) form NRCS-CPA-106 with a total corridor assessment of 35 points. Per the Farmland Protection Policy Act (FPPA), no further protections are required, and the Build Alternative is not anticipated to affect prime, unique, or other farmlands of statewide or local importance.

No impacts to farmland would occur under the No-Build Alternative.

5.4 Utility Relocation

The proposed project would require approximately 13.45 acres of new ROW. Implementation of the proposed project would require the relocation and adjustment of utilities such as gas lines, fiber optic lines, water lines, sewer lines, overhead electrical and telephone lines, and other subterranean and aerial utilities. Underground utilities relocations would go down to a max depth of 15-foot. The need for relocation and adjustment of any utilities is determined during the detailed design phase and coordinated with the affected utility provider to ensure that no substantial interruption of service would take place. The Travis County emergency

medical services, Travis County Sheriff's Office, and City of Austin Fire and Police Departments would be notified of the construction start dates and any potential detour routes. Construction activities are not expected to cause any delays or access issues for emergency service vehicles.

It is reasonably foreseeable that utilities will have to be relocated as a result of this project. The impacts resulting from removal of any utilities from within existing highway right-of-way (e.g., construction noise, potential disturbance to archeological resources, and potential impacts to species habitat) have been considered as part of the overall project footprint impacts within this environmental assessment.

It has not yet been determined whether the dislocated utilities will be re-installed within the highway right-of-way, or to a location outside the highway right-of-way. However, the potential impacts resulting from re-installation of the displaced utilities within the highway right-of-way have been considered as part of the overall project footprint impacts (e.g., construction noise, potential disturbance to archeological resources, and potential impacts to species habitat) within this environmental assessment. To the extent that the owner of any displaced utility determines to re-install the displaced utility at a location outside of highway right-of-way, such location will be determined by the owner of the utility subject to the rules and policies governing the utility relocation process. Additionally, the owner of the utility will be responsible for acquiring any easements outside the highway right-of-way and ensuring that the design and construction meet all regulatory and environmental compliance requirements. See 43 TAC 21.37(a)(9), (g)(1)), and (g)(4); 43 TAC 21.38(e)(2).

Construction of the proposed project would be phased in a manner that would allow the existing road system to remain open to traffic during construction of the new roadway and would not require the use of detours. Construction of the project would not prevent access to any adjacent properties.

There would be no impact to utilities/emergency services under the No-Build Alternative.

5.5 Bicycle and Pedestrian Facilities

There are SUPs and sidewalks located throughout the project area, as shown in **Appendix F, Figure 2**. These bicycle and pedestrian facilities are used by residents to access businesses and community facilities in the project area. Recent improvements have been made to pedestrian and bicycle facilities in the project area, including a barrier to separate a bicycle lane from mainlanes of traffic across Slaughter Lane.

The Build Alternative proposes an additional 13-miles of SUPs in the project area and construction of additional sidewalks at SH 71/US 290 and Stassney Lane, which would improve upon current pedestrian and bike access across the I-35 corridor (east/west). The proposed SUPs intersect with many of the City of Austin's existing and planned bicycle and pedestrian routes, the proposed project would provide further connections to this infrastructure, expanding connectivity within the project corridor. The SUPs would also provide additional north and south connectivity to current transit options within the project corridor. City of Austin is a stakeholder agency and TxDOT will continue to coordinate with them to reach shared objectives within the project corridor.

The proposed project would improve bicycle and pedestrian safety as all sidewalks would be designed to meet Americans with Disabilities Act (ADA) accessibility standards, and SUPs would be constructed with curbs between the SUP and the frontage road. The proposed project would improve pedestrian and bicycle north-south connectivity to the existing transit options and accessibility would be increased for those traveling on foot or by bicycle. Additionally, project will comply with TxDOT's Bicycle Accommodation Design Guidance. TxDOT's Bicycle Accommodation Design Guidance implements both the USDOT and FHWA policy regarding bicycle and pedestrian accommodations.

The No-Build Alternative would not increase the number of SUPs or increase the safety of existing bicycle or pedestrian facilities in the project area.

5.6 Community Impacts

The purpose of the proposed project is to improve safety and mobility of all users of I-35, while minimizing ROW, community, and environmental impacts, and to provide a reliable travel time for cars and public transit buses using the managed lanes. There are many community facilities located within the project area, as shown in **Appendix F, Figure 3**.

Under the Build Alternative, the South Austin neighborhoods of South Park Meadows and Onion Creek would be affected by the proposed changes to I-35 access following construction. There would be additional entrances and exits to I-35 and frontage road lanes, and more intersections where vehicles would be able to turn more easily to reach community facilities on the opposite side of I-35. These changes would be beneficial as the project is being designed to improve safety and mobility of those traveling through the community study area, and these changes would improve mobility in these neighborhoods. The additional sidewalks and SUPs proposed as part of the project would also make it easier for pedestrians and cyclists to access services and community resources within the study area. The proposed project would not result in any residential or commercial displacements, and none of the community facilities or businesses in the area would be directly impacted following construction completion.

Additionally, improvements to transit vehicles using managed lanes would benefit transit-dependent populations throughout the City of Austin. In November 2020 Austin voters approved Project Connect, a substantial investment in Capital Metro transit operations throughout the city, including sections of the project area. Transit users would benefit from improved travel time reliability from the use of the proposed managed lanes and improved access to existing transit from the pedestrian improvements for first and last mile connections across and along I-35. Additionally, the proposed project affords opportunities to provide future transit options for transit-dependent populations. Capital Metro is a stakeholder agency and TxDOT will continue to coordinate with this agency to reach shared objectives among the two projects. Managed lanes are a tool for the region's mobility needs that can be useful for transit in the project area.

Any changes in travel patterns that would occur as a result of the proposed project would be beneficial to all modes of transportation that use the facility. The changes in travel patterns would improve commute times and reduce congestion.

Pedestrian and bicycle safety would be improved because new sidewalks and SUPs would be built to ADA accessibility and compliance standards with curbs to separate the SUPs from the

frontage roads. SUPs may also provide additional north and south connectivity to the existing transit options in the project corridor. These proposed improvements are not anticipated to negatively impact community cohesion.

Census data indicate that there are Environmental Justice (EJ) populations within the community study area. Of the 393 blocks in the community study area, 130 had populations over 50 percent minority in 2010, ranging from 50 percent to 100 percent, as shown in **Appendix F, Figure 4**. The data appears to indicate that minority populations are generally dispersed throughout the study area and not concentrated in any one location or side of the existing I-35 facility within the project limits.

Given the high rate of population growth and change in Austin, data from 2010 was not expected to accurately portray the populations in the community study area. As such, block group data from 2018 was also analyzed. Fifteen of the 21 census block groups have populations that are over 50 percent minority. The 2019 block group data identified that all the block groups except for one contain households living under the poverty level. 2021 US Health and Human Services poverty level for a family of four is \$26,500. The percentage of households living under the poverty level ranges from 2.3 percent to 33.9 percent. Information from the public schools in the area also indicate that there may be a higher percentage of people living below the poverty level in the community study area than was reported in the U.S. Census. Additionally, there are homeless encampments and more dispersed populations living within the ROW. TxDOT's initiative to address homelessness includes coordination and focused engagement with agencies and nonprofit providers supporting people experiencing homelessness. Early communication and notice in advance of construction activities will occur in all areas that are inhabited as the project nears construction. Therefore, while there are minority and low-income populations in the community study area, the proposed project would not result in disproportionate adverse impacts to these populations and mitigation specific to EJ is not necessary.

There are also Limited English Speaking (LEP) persons identified in the community study area. Fifteen Census block groups contain over 5 percent Spanish or Asian Language speakers that speak English less than very well. The majority of the LEP speakers in the community study area are Spanish speakers. Census Tract 24.25 Block Group 2 reports that approximately 8 percent of the population are LEP Asian and Pacific Islander language speakers. In order to provide meaningful communication to the people that could be affected by the project, project materials are made available in English and Spanish, and translation services are offered at all public meetings.

The Bridge at Asher and Bridge at Southpoint apartment complexes are located adjacent to the project ROW and are owned by the Housing Authority of the City of Austin (HACA). Additionally, the Austin Affordable Housing Authority (AAHC), a non-profit subsidiary of HACA, offices are located adjacent to the project ROW. Both the HACA and AAHC offer low-income housing within the City of Austin. The proposed project would not require any displacements at either apartment complexes or the AAHC office building. However, noise impacts have been identified at the Bridge at Asher apartment complex (R40 & R43), and two noise barriers are proposed at this location. In accordance with TxDOT Guidelines for Analysis and Abatement of Roadway Traffic Noise, traffic noise workshops will be held to provide information on the proposed noise barriers to adjacent property owners. The traffic noise workshops would be held after the FONSI. For more information on proposed noise impacts

please see Section 5.14: Traffic Noise.

The proposed project could have minimal impacts on community cohesion, community facilities, and vulnerable populations. There would not be displacements as a result of the proposed project. The proposed project would result in increases to safety and mobility throughout the project area.

Historical land use within the project area would generally be described as rural, sparsely populated plots with farms and/or ranching activity. At the time that I-35 was originally open to the public (1962), the surrounding communities associated with this land use would be described as farming and ranch communities, not the densely populated residential communities that are traditionally associated with an urban community. Aerial maps from 1964 and 1973 reflect this assumption and show that the newly constructed I-35 divided these farming and ranchland communities vs. densely populated residential communities like those found further north in downtown and central Austin. Following the construction of I-35, a limited amount of commercial and residential growth was constructed in study area. The majority of the existing development currently observed within the project area was built after 1995 (TxDOT, 2021d, UTCTR, 2021).

The No-Build Alternative would not have adverse impacts on community cohesion and community facilities within the project area. Additionally, the No-Build Alternative would not cause disproportionately high and adverse impacts on EJ communities. More detail regarding community impacts can be found in the Community Impacts Assessment Technical Report which is available for review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

5.7 Visual/Aesthetic Impacts

I-35 is a well-established interstate highway, and the project area is located within a developed area of south Austin. The existing ROW consists mainly of urbanized land and paved roadway. The land adjacent to the ROW is developed with a few sparse wooded areas. I-35 is the dominant visual feature in the project area. The proposed project includes construction of an elevated section for 2.5-miles. See **Appendix C** and **Appendix D** for schematic and typical sections. The section below discusses potential visual impacts.

Section 136 of the Federal Aid Highway Act of 1970 (Public Law 91-605) requires consideration of aesthetic values in the highway planning process. Aerial imagery and field visits were used to assess visual and aesthetics impacts within the project area. After conducting field reconnaissance to assess views of the project area, the information collected was analyzed to determine the existing visual character. The overall general landscape can be characterized as urban/commercial consisting of mixed small, medium, and large retail, commercial, office, hotel, and multifamily land uses. Overall, the visual character of the proposed project would be consistent with the existing visual character of the project area in scale, form, and materials.

Generally, the existing viewshed includes sparse woodland areas, commercial development, multifamily residential housing, and highway ROW. The primary viewers would include motorists and people visiting commercial developments in the project area. The visual effects assessment is based on two factors:

- Evaluating the visual effect of the proposed project and how it relates to the surrounding environment (view of the road)
- Evaluating the potential visual effect viewers would experience while traveling along the proposed project (the view from the road).

Representative viewpoints were selected and analyzed to determine the visual effects resulting from implementing the proposed project. Next, the analysis considers the visual compatibility of the proposed project with the existing area; by asking, will the project complement or contrast with the existing visual character of the area? Then, the analysis evaluates, the relative degree of potential visual effect based on the viewpoint. These qualitative effects are beneficial change, adverse change, or neutral change (no change). In this case a beneficial change would be defined by enhancing visual resources or creating a better view of the existing resources and improving the visual experience of the viewer. An adverse change would be defined as degrading the visual resource or obstructing or altering a desired view. A neutral change would be defined as there being no substantial change from the current viewshed. The four representative viewshed areas of the corridor area as follows:

- Viewpoint 1: US 290W/SH 71, the northern terminus of the project.
- Viewpoint 2: North of Stassney Lane, the start of the 2.5-mile, elevated managed lanes.
- Viewpoint 3: South of William Cannon Drive, the end of the elevated managed lanes.
- Viewpoint 4: South of Slaughter Lane, a representative viewpoint for the remaining project corridor.

Viewpoint 1:

The northern project terminus is characterized as heavily commercial with industrial and transportation land uses. There are large, multi-level interchanges of US 290W/SH71 and I-35 with their associated frontage roads and direct connectors. When looking north, the interchanges dominate the viewshed. SH 71 is the lowest level with I-35 mainlanes and frontage roads being respectively 57 and 30 feet above SH 71. The US 290W/SH 71 and I-35 direct connectors are at their highest point located 56 feet above the I-35 mainlanes. The proposed project would be consistent and visually compatible with the existing viewshed.

The majority of viewers in this area would be commercial viewers and motorist traveling through the area. A viewer standing on the southbound frontage road above SH71 looking east would see a large multilevel interchange. The same viewer standing on the southbound frontage road looking south would see a frontage road with large commercial developments including hotels, chain restaurants, and car dealerships. The visual impact at Viewpoint from the NB frontage road looking west and south would be a similar view of commercial developments, hotels, car dealerships, and highway.

A motorist traveling through this area on the I-35 mainlanes would be in an elevated position and would be able to see farther south, which is a view that would be dominated by I-35. The east and west view for a motorist on the elevated section would be that of commercial buildings, business signs, and car dealerships. The visual impact at viewpoint would be a

neutral change as the proposed project would not substantially alter or impact the existing views of the viewshed.

Viewpoint 2:

The elevated managed lanes start north of Stassney Lane. The elevated structures would vary from 29 to 36 feet high for 2.5 miles beginning north of Stassney Lane, which is roughly equivalent in height to a two-story single-family home in Austin. The elevated mainlanes would be 82 feet wide, which is roughly the length of a high school basketball court. The area has numerous commercial land uses along the NB and SB I-35 frontage roads. Stassney Woods Apartments, located roughly 220 feet east of the Stassney Lane and NB frontage road intersection, is the nearest residential land use to this location. The Stassney Lane overpass is elevated 23 feet above the I-35 mainlanes. The proposed project would be consistent and compatible with the existing viewshed.

Since the managed lanes are elevated 36 feet above Stassney Lane overpass, a viewer standing at the intersection of Stassney lane and either of the I-35 NB or SB frontage roads would be able to see across the highway to the other side. Since Stassney Woods Apartments are located below the overpass, they do not have a view across I-35, so the elevated section in the foreground of their view wouldn't affect their viewshed facing west or southwest. If a viewer at Stassney Woods Apartments were looking northwest, they would see the managed lanes above the existing mainlanes. However, the view across the highway are not natural viewsheds, but rather a strip mall shopping center and car dealership.

A motorist traveling on the elevated managed lanes would have an elevated view of the I-35 frontage roads on the east and west, business signs, and commercial buildings. A motorist traveling on the mainlanes would see supports for the elevated structure to their left and the bottom of the elevated managed lanes above them and also to the south. As a result, the visual effect from the proposed project would not be considered substantial and the visual effect at this viewpoint would be a neutral change as the proposed project would not substantially alter or impact the existing view of the viewshed.

Viewpoint 3:

The third vantage point viewshed is south of William Cannon Drive. This area also has numerous commercial land uses along the highway including fast food restaurants, shopping centers, and car dealerships. The proposed project would be consistent with existing viewshed.

Century South Shopping Center is on the southwest corner of William Cannon Drive and the I-35 SB frontage road. Bluff Springs Shopping Center is on the southeast corner of William Cannon Drive and the I-35 NB frontage road. The nearest residential land use is South Point Village Apartments located roughly 1,000 feet south of the William Cannon Drive and I-35 SB frontage road intersection. William Cannon Drive overpass is 24 feet above the I-35 mainlanes. The managed lanes would be elevated 32 feet above William Cannon Drive overpass. The existing views across the highway are not natural viewsheds, but rather a strip mall shopping center and car dealership. A viewer standing on the SB frontage road and William Cannon Drive looking east across the highway would see a strip mall, looking northeast fast-food restaurants, and looking south a strip mall. A viewer standing at NB frontage road and William Cannon Drive looking west across the highway would see a strip mall, looking

northwest a car dealership, and looking south a strip mall.

A motorist traveling on the elevated managed lanes would have an elevated view of the I-35 frontage roads on the east and west and commercial buildings. A motorist traveling on the mainlanes would see supports for the elevated structure to their left and the bottom of the elevated managed lanes above them and also to the north. The visual effect from the proposed project wouldn't be considered substantial and the visual effect at this viewpoint would be a neutral change as the proposed project would not substantially alter or impact the existing view of the viewshed.

Viewpoint 4:

The last vantage point viewshed is Slaughter Lane. This area also has numerous commercial land uses along the highway including fast food restaurants, shopping centers, and large flagship supermarket. Southpark Meadows, HEB, Home Depot, and U-Haul are respectively located on the southwest, northwest, northeast, and southeast corners of the I-35 NB and SB frontage road and Slaughter Lane intersections. The nearest residential land use is Southpark Crossing Apartments located on the NB frontage Road roughly 500 feet south of Slaughter Lane. The existing I-35 mainlanes are elevated 25 feet above Slaughter Lane. Currently, a viewer standing at the SB frontage and Slaughter Lane looking east across the highway would see elevated I-35 mainlanes, looking north a large supermarket, looking south a shopping center. A viewer standing at the NB frontage and Slaughter Lane looking west across the highway would see elevated I-35 mainlanes, looking north a gas station, looking south a commercial building and apartment complex. The proposed project would be consistent with the existing viewshed. The frontage roads are at grade with Slaughter Lane. The proposed project would not affect the viewshed from this vantage point for either motorist on the road or viewer looking at the road.

A motorist traveling on I-35 would have an elevated view of the I-35 frontage roads on the east and west, a few wooded areas to the southeast and southwest, and commercial buildings. The visual effect from the proposed project wouldn't be considered substantial and the visual effect at this viewpoint would be a neutral change as the proposed project would not substantially alter or impact the existing view of the viewshed.

Safety and high mast lighting are currently present at all viewpoints and throughout the project corridor, the proposed project would require additional lighting including the use of high mast or safety lighting. The specific type of roadway lighting will be determined during the detailed design phase.

During construction, the contractor would be directed to locate staging areas away from visually sensitive areas, such as residential areas and parks, if it is practical and also if land is available. Reseeding/revegetation would take place in areas disturbed during construction.

Although the proposed project would include 2.5 miles of elevated structure, overall, it is not anticipated that the Build Alternative would substantially alter or impact the viewshed at these locations or throughout the project corridor.

The No-Build Alternative would not impact or alter the existing viewshed of the project area.

5.8 Cultural Resources

Evaluation of impacts to cultural resources has been conducted under Section 106 of the National Historic Preservation Act in accordance with the Programmatic Agreement (PA) among FHWA, TxDOT, the Texas State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings. Please see **Appendix G** for cultural resource coordination.

A review of the Texas Historical Commission (THC) Historic Sites Atlas indicates that there are no cemeteries, previously designated historic districts, or properties adjacent to the project area.

5.8.1 Archeology

The current archeological area of potential effect (APE) consists of the entire proposed project's horizontal footprint as well as the proposed vertical depth below ground surface within existing ROW, proposed ROW, and easements. Archeological studies were conducted in two stages. Although archeological sites were previously recorded within the archeological APE, Atkins recommended no archeological investigation because the vast majority of the APE was previously disturbed due to roadway construction and maintenance, and from underground and overhead utilities. TxDOT concurred with Atkins's recommendation and approved the Archeological Background Studies Report with no further work necessary on May 07, 2020. Design changes necessitated a follow up addendum to the Archeological Studies Background Report. In the addendum, Atkins recommended that no further archeological investigations were warranted prior to construction, because the proposed changes were minimal and limited to the existing I-35 ROW which had been previously disturbed. TxDOT approved the contents and recommendations of the Addendum to the Archeological Background Study Report on March 3, 2021. Both technical documents are available for review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

Therefore, pursuant to Stipulation IX, Appendix 6 "Undertakings with the Potential to Cause Effects per 36 CFR 800.16(i)" of the Section 106 Programmatic Agreement (PA) and the MOU (Memorandum of Understanding), TxDOT determined that there are no historic archeological properties within the archeological APE. In compliance with the ACT and the MOU, TxDOT archeologists determined project activities have no potential for adverse effects. Individual project coordination with SHPO is not required. The Build Alternative and No-Build Alternative would not alter or change any archeological historic properties. If any unanticipated cultural materials or deposits are found at any stage of clearing, preparation, or construction, the work should cease in that area and TxDOT personnel should be notified immediately. During evaluation of any unanticipated finds and coordination between TxDOT and THC, clearing, preparation, and/or construction could continue in any other areas along the corridor where no such deposits or materials are observed. More detail regarding archeology can be found in the Archeological Background Study Report and Addendum.

Tribal coordination was originally completed on March 3, 2021 with Federally Recognized Tribes with a potential interest in the proposed project area. This coordination was re-initiated for an update to the APE in November 15, 2021 and completed December 15, 2021. No responses were received within the 30-day review period. No issues or objections were received.

5.8.2 *Historic Properties*

The identification of potential historic (National Register of Historic Places [NRHP]-listed or -eligible) properties is complete for historic-age structures, buildings, objects, and districts found within the proposed ROW and the associated APE, which includes the entirety of all parcels within the APE.

TxDOT historians reviewed the NRHP, the list of State Antiquities Landmarks, the list of Recorded Texas Historic Landmarks, and TxDOT files and found no historically significant resources previously documented within the APE. TxDOT defines the APE for this project as 150 feet from the proposed ROW line, and the existing ROW line where no new ROW is required. Subsequent to TxDOT approval of a Project Coordination Request (PCR) on April 16, 2020 and the Historic Resources Research Design on October 9, 2020, TxDOT approved Atkins's Historic Resources Survey Report (HRSR) on January 13, 2021. TxDOT determined there are four properties containing four historic-age resources (built in or prior to 1977) within the APE (**Figure 5**). Property types consist of commercial and residential. TxDOT historians determined that the recorded historic-age resources are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons, and are therefore not eligible for NRHP listing under Criteria A, B, or C. Technical documents are available for review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

Therefore, pursuant to Stipulation IX, Appendix 6 "Undertakings with the Potential to Cause Effects per 36 CFR 800.16(i)" of the Section 106 PA and the MOU, TxDOT historians, determined that there are no historic, non-archeological properties in the APE. In compliance with the ACT and the MOU, TxDOT historians determined the undertaking to have no potential for adverse effects. Individual project coordination with SHPO is not required. The Build Alternative and No-Build Alternative would not alter or change any historic properties. No mitigation is necessary. More detail regarding historic resources can be found in the HRSR.

5.9 **Protected Lands**

Section 4(f) of the U.S. Department of Transportation Act of 1966 requires consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development.

Section 6(f) of the Land and Water Conservation Fund Act requires that recreational facilities receiving U. S. Department of the Interior (USDOI) funding from the Land and Water Conservation Fund Act as allocated by Texas Parks and Wildlife Department (TPWD) may not be converted to non-recreational uses unless approval is received from TPWD and the National Park Service (NPS). Chapter 26 of the Texas Parks and Wildlife Code protects public land designated and used as a park, recreation area, scientific area, wildlife refuge, or historic site.

There are no Section 6(f) properties present in the project area.

Protected lands (4(f) and Chapter 26 properties) in the project area include Williamson Creek East Greenbelt, South Boggy Creek Greenbelt, Onion Creek Greenbelt, and Old San Antonio Park.

The proposed project would not impact these parks nor require any ROW from any protected

parklands. Therefore, there would be no impacts to Section 4(f), Section 6(f) or Chapter 26 properties from the proposed project.

There would be no impacts to Section 4(f), Section 6(f) or Chapter 26 properties from the No-Build Alternative.

5.10 Water Resources

There are 12 water features in the project area that could be impacted by the proposed project. These features include seven unnamed ephemeral streams, four intermittent waterways (Williamson Creek, Boggy Creek, Slaughter Creek, and Onion Creek), and one palustrine emergent wetland. Project features and best management practices (BMP) would be used to minimize impacts to waters (i.e. spanning with bridges to maximum extent practicable, see section 5.10.2). All project features and BMPs will be further evaluated in the detailed design phase.

5.10.1 Clean Water Act Section 404

Four potential WOTUS consisting entirely of intermittent waterways (Williamson Creek, Boggy Creek, Slaughter Creek, and Onion Creek) occur in the project area. The project area also contains seven jurisdictional unnamed ephemeral tributaries to Williamson Creek, Slaughter Creek, and Onion Creek, and one jurisdictional palustrine emergent wetland.

The proposed project would involve regulated activity in jurisdictional waters and therefore will require authorization under Section 404. **Table 5** shows the waters that are anticipated to be jurisdictional waters in which regulated activity is anticipated to take place. It also indicates whether the impacts are anticipated to be authorized under Section 404 by a non-reporting nationwide permit (i.e., no pre-construction notification required), or if it is anticipated that a nationwide permit with pre-construction notification, individual permit, letter of permission, or regional general permit will be required.

Table 5: Summary of Potential Waters of the U.S. within the Capital Express South ROW

Name of Water Body	Type of Water Body	Location of Water Body	Covered by Non-Reporting Nationwide Permit Under Section 404?	Nationwide Permit with Pre-Construction Notification, Individual Permit, Letter of Permission, or Regional General Permit Required Under Section 404?	Estimated Impacts (ac)
CRK 01 Unnamed tributary to Williamson Creek	Ephemeral Creek	30.20139°, -97.76079°	Yes	No	0.00
CRK 02 Williamson Creek	Intermittent Creek	30.20183°, -97.76157°	Yes	No	0.00

Name of Water Body	Type of Water Body	Location of Water Body	Covered by Non-Reporting Nationwide Permit Under Section 404?	Nationwide Permit with Pre-Construction Notification, Individual Permit, Letter of Permission, or Regional General Permit Required Under Section 404?	Estimated Impacts (ac)
CRK 03 Unnamed tributary to Williamson Creek	Ephemeral Creek	30.196716°, -97.76466°	Yes	No	0.00
CRK 04 Boggy Creek	Intermittent Creek	30.17926°, -97.77741°	Yes	No	0.0097
CRK 05 Unnamed tributary to Slaughter Creek	Ephemeral Creek	30.170860°, -97.783052°	Yes	No	0.0005
CRK 06 Unnamed tributary to Slaughter Creek	Ephemeral Creek	30.15291°, -97.79183°	Yes	No	0.00
CRK 07 Slaughter Creek	Intermittent Creek	30.15289°, -97.79228°	Yes	No	0.0003
CRK 08 Unnamed tributary to Slaughter Creek	Ephemeral Creek	30.15293°, -97.7918°	Yes	No	0.00
CRK 09 Unnamed tributary to Onion Creek	Ephemeral Creek	30.14195°, -97.79455°	Yes	No	0.002
CRK 10 Onion Creek	Intermittent Creek	30.13545°, -97.79812°	Yes	No	0.0002
CRK 11 Unnamed tributary to Onion Creek	Ephemeral Creek	30.101410°, -97.812758°	Yes	No	0.00
Wet1 Unnamed Wetland	Wetland	30.16563°, -97.78602°	Yes	No	0.00

All surveyed waters are depicted in **Appendix F, Figure 6**. Detailed descriptions of potential WOTUS are included in the Waters of the U.S. Delineation Report, which is on file with the TxDOT South Travis/Hays County Area Office and are summarized in the assessment. The Build Alternative impacts are estimated to include 0.0127 acre to linear streams and no impacts to the identified wetland.

All proposed roadway and drainage improvements would be designed in a manner to avoid or minimize impacts to jurisdictional crossings. It is anticipated that impacts to WOTUS would be authorized through Nationwide Permit (NWP) 14 without Pre-Construction Notification (PCN). The No-Build Alternative would have no impact on WOTUS.

The potential for indirect (encroachment-alteration) effects on wetlands and WOTUS related to the Build Alternative would be mitigated through permanent (post-construction) BMPs, as

discussed in Section 5.10.2, Clean Water Act Section 401, below. Wetlands and WOTUS could receive an increased amount of sediment if storm water were released from the project area despite the use of BMPs. To minimize the potential for adverse impacts, BMPs would be regularly inspected and proactively maintained. No indirect effects from induced growth related to the Build Alternative are anticipated.

Section 404 of the Clean Water Act (CWA) is regulated and enforced by the USACE and is applicable to this project. NWP 14 applies to activities required for crossings of WOTUS associated with the construction, expansion, modification, or improvement of linear transportation projects in WOTUS. For linear transportation projects in non-tidal waters, an individual Permit (IP) is required for the loss of greater than 1/2-acre of WOTUS. A PCN would be required if the impacts to WOTUS (either dredge or fill) are greater than 1/10-acre or if any proposed discharge would occur within special aquatic sites, including wetlands. No PCN or formal notification would be required if impacts to WOTUS are less than 1/10 acre. Impacts to WOTUS would be minimized to the extent practicable under the Build Alternative.

The need for an individual permit under Section 404 is not anticipated. If it is later determined that an individual permit under Section 404 is needed, compliance with EPA's Section 404(b)(1) Guidelines will be confirmed prior to submittal of the individual permit application.

Under the No-Build Alternative, no impacts to WOTUS would occur; therefore, no permitting would be required with the USACE.

5.10.2 *Clean Water Act Section 401*

For projects that require a NWP under Section 404 that is covered by TCEQ's blanket 401 water quality certification, regardless of whether the NWP is non-reporting, or requires the submission of a PCN, TxDOT complies with Section 401 of the Clean Water Act by implementing Texas Commission on Environmental Quality (TCEQ) conditions for NWPs. For projects that require authorization under a NWP under Section 404 that is not covered by TCEQ's blanket 401 water quality certification, or under an Individual Standard Permit, Letter of Permission, or Regional General Permit under Section 404, TxDOT will coordinate the Section 401 water quality certification with TCEQ. TCEQ will either approve or deny the Section 401 water quality certification or issue a waiver. The TCEQ Section 401 water quality certification decision must be submitted to the USACE before use of the NWP can be confirmed, or an Individual Standard Permit, Letter of Permission, or Regional General Permit decision can be made.

The proposed Capital Express South project is a Tier I project under Section 401, affecting less than three acres of WOTUS or less than 1,500 linear feet of stream. In order to comply with the Texas Commission on Environmental Quality's (TCEQ's) Section 401 Water Quality Certification Conditions for NWP 14 for Tier I projects, at least one BMP from each of the following three categories of on-site water quality management must be used on the proposed project: erosion control, post-construction total suspended solids (TSS) control, and sedimentation control. The BMPs to be used on the proposed project include temporary vegetation for erosion control, silt fences for sedimentation control, and vegetative filter strips for post-construction TSS control.

Under the No-Build Alternative, no impacts to WOTUS would occur and, consequently, no

Section 401 Certification would be required.

5.10.3 Executive Order 11990 Wetlands

Executive Order 11990, Protection of Wetlands (1977), requires federal agencies to minimize the destruction or modification of wetlands. The proposed project would have no impact on wetlands (**Appendix F, Figure 6**); therefore, Executive Order 11990 does not apply to the proposed project.

Under the No-Build Alternative, no impacts to any wetlands would occur.

5.10.4 Rivers and Harbors Act

No navigable waters regulated under Sections 9 and 10 of the Rivers and Harbors Act lie within the project area. The proposed project would not impact any waters regulated by the Rivers and Harbors Act.

Under the No-Build Alternative, no impacts to any Sections 9 and 10 waterways would occur.

5.10.5 Clean Water Act Section 303(d)

Storm water runoff from the proposed project would discharge within five linear miles of the following surface water impaired assessment unit per the 2020 303(d) list into the Slaughter Creek segment (No. 1427A) of the Colorado River Basin Watershed (see **Table 6**).

Table 6: Summary of Texas 303(d) Listed Waters

Watershed	Segment Name	Segment number	Assessment Unit Number
Colorado River Basin	Slaughter Creek	1427A	1427A_01

This segment is impaired due to an impaired microbenthic community in the water. A Storm Water Pollution Prevention Plan (SWP3) would be implemented to avoid discharging pollutants into waterways that may degrade the water quality. Compliance with the SWP3, as well as NWP 14 conditions and BMPs, as discussed above, would ensure that the project does not adversely affect water quality, impair, or impede any plans to improve the quality of polluted waters.

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

For the reasons listed above, it is not anticipated that the Build Alternative would impact any Section 303(d) stream segments.

The No-Build Alternative would not impact any Section 303(d) waters.

5.10.6 *Clean Water Act Section 402*

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 projects. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a SWP3 be included in the plans of all projects that disturb one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (Notice of Intent or site notice) be completed, posted, and submitted, when required by the CGP, to TCEQ and the Municipal Separate Storm Sewer System (MS4) operator. It also requires that projects be inspected to ensure compliance with the CGP.

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

Under the No-Build Alternative, compliance with CWA Section 402 would not be required.

5.10.7 *Floodplains*

The proposed project is located within the Federal Emergency Management Agency (FEMA) base floodplains of Williamson Creek, Boggy Creek, Slaughter Creek, and Onion Creek (**Appendix F, Figure 6**). The project is located within FEMA-designated map panel 48453C0585H, effective September 26, 2008 (FEMA 2020). It is also located within FEMA-designated map panels 48453C0595K, 48453C0685J, 48453C0680J, effective January 22, 2020. Lastly, it is located in 48209C0280F, effective September 2, 2005 (FEMA, 2020).

The project contains two different flood zone designations: Zone A and Zone B and X. Zone A is defined as a 100-year floodplain, or an area with 1 percent chance of flooding. Zone B and X is defined as the limits of the 100-year and 500-year floodplain, or an area with 0.2 percent (or 1 in 500 chance) of flooding. This zone is used to designate the floodplains of lesser hazards, such as shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile (FEMA, 2020).

The roadway facility would permit the conveyance of the 100-year (one-percent annual chance) flood, inundation of the roadway being acceptable, without causing substantial damage to the roadway, stream, or other property. The proposed Build Alternative would not increase the base flood elevation to a level that would violate the applicable floodplain regulations or ordinances. Coordination with the local floodplain administrator would be required.

This project is subject to and will comply with federal Executive Order 11988 on Floodplain Management. The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department’s Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design

Manual ensures that this project will not result in a “significant encroachment” as defined by FHWA’s rules implementing Executive Order 11988 at 23 CFR 650.105(q).

The potential for project-related indirect (encroachment-alteration) effects on floodplains would be addressed through temporary and permanent BMPs. Storm water could leave an increased amount of sediment in floodplains if released from the project area, despite the use of BMPs. Sediment build-up, in turn, could reduce the water storage capacity of the floodplain. To minimize the potential for adverse impacts, erosion, and sedimentation BMPs would be effectively installed, regularly inspected, and proactively maintained.

No direct or indirect impacts to floodplains would be anticipated under the No-Build Alternative.

5.10.8 *Wild and Scenic Rivers*

The proposed project does not contain resources regulated under the Wild and Scenic Rivers Act; therefore, neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.9 *Coastal Barrier Resources*

The Coastal Barrier Resources Act (CBRA) does not apply. Therefore, neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.10 *Coastal Zone Management*

The proposed project does not lie within the Texas Coastal Management Program boundary. Therefore, a consistency determination is not required. Therefore, neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.11 *Edwards Aquifer*

The proposed project is not located within the Edwards Aquifer Recharge, Transition, or Contributing Zones (**Appendix F, Figure 6**). Consequently, it was determined that neither the Preferred nor the No-Build Alternative would have an impact on this resource category or subject matter and is not subject to regulation under the TCEQ’s Edwards Aquifer Rules (30 Texas Administrative Code [TAC] 213).

The proposed project does not lie within the Environmental Protection Agency’s (EPA’s) designated Edwards Aquifer Streamflow Source Areas or Recharge Zones and, therefore, neither the build or the No-Build Alternative does not require coordination under the EPA-TxDOT MOU Regarding EPA’s Review of Projects Potentially Affecting the Edwards Aquifer.

5.10.12 *International Boundary and Water Commission*

The proposed project does not cross or encroach upon the floodway of the International Boundary and Water Commission (IBWC) ROW or an IBWC flood control project. Therefore, neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.13 Drinking Water Systems

In accordance with TxDOT's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (Item 103, Disposal of Wells), any drinking water wells would need to be properly removed and disposed of during construction of the project. Therefore, neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.11 Biological Resources

5.11.1 Impacts to Vegetation

The Tier I Site Assessment Form, prepared for this proposed project, describes 21 different vegetation communities that were mapped within the project area by TPWD's Ecological Mapping Systems of Texas (EMST). Mapped vegetation types include Barren; Central Texas: Floodplain Hardwood Forest; Central Texas: Floodplain Hardwood - Evergreen Forest; Blackland Prairie: Disturbance or Tame Grassland; Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland; Edwards Plateau: Savanna Grassland; Edwards Plateau: Oak - Hardwood Motte and Woodland; Edwards Plateau: Ashe Juniper Motte and Woodland; Edwards Plateau: Oak - Ashe Juniper Slope Forest; Edwards Plateau: Oak - Hardwood Slope Forest; Edwards Plateau: Live Oak Motte and Woodland; Native Invasive: Mesquite Shrubland; Native Invasive: Juniper Shrubland; Native Invasive: Juniper Woodland; Native Invasive: Deciduous Woodland; Central Texas: Riparian Hardwood Forest; Central Texas: Floodplain Herbaceous Vegetation; Central Texas: Riparian Deciduous Shrubland; Row Crop; Urban High Intensity; and Urban Low Intensity. Mapped EMST vegetation types within the Project Area are illustrated in **Attachment F, Figure 7**.

The EMST vegetation types observed by a qualified ecologist within the project area did not completely correspond to the EMST mapped vegetation types. Vegetation types within the Edwards Plateau Savannah, Woodland, and Shrubland category were identified in the EMST mapped vegetation dataset but were not observed in the project area. The observed vegetation also lacked Row crops, Native Invasive: Mesquite Shrubland, and Central Texas: Riparian Deciduous Shrubland. Additionally, Central Texas: Riparian Herbaceous Vegetation was observed, whereas the EMST mapped vegetation included Central Texas: Floodplain Herbaceous Vegetation.

Observed vegetation types include Central Texas: Floodplain Hardwood Forest; Blackland Prairie: Disturbance or Tame Grassland; Native Invasive: Mesquite Shrubland; Native Invasive: Deciduous Woodland; Central Texas: Riparian Herbaceous Vegetation; Central Texas: Riparian Hardwood Forest; Urban; High Intensity; and Urban Low Intensity. Observed EMST vegetation types within the project area are illustrated in **Attachment F, Figure 8**.

Total acres of EMST mapped vegetation and observed vegetation types are presented in the Tier I Site Assessment. A vegetation impact assessment was performed for the observed vegetation types. Based on this analysis, coordination between TxDOT and TPWD is triggered per 2013 MOU (2017 Revision) between TPWD and TxDOT as impacts would exceed habitat thresholds outlined in the MOU. The project would disturb approximately 1.5 acres of riparian vegetation, which is greater than the MOU impact threshold of 0.1 acre for this habitat type. Approximately 8.0 acres of Tallgrass Prairie, Grassland habitat type would be disturbed, which

is greater than the MOU impact threshold of 0.1 acre for this habitat type. Approximately 11.9 acres of Disturbed Prairie would be disturbed, which exceeds MOU impact threshold of 2.0 acres.

Early coordination with TPWD regarding effects to vegetation communities was conducted in accordance with provisions of the 2013 MOU (2017 Revision) and coordination was completed on May 7, 2021. The coordination correspondence is included in **Appendix G**.

The No-Build Alternative would not impact vegetation beyond current impacts as a result of continued maintenance of existing I-35.

5.11.2 Executive Order 13112 on Invasive Species

The proposed project is subject to and would comply with federal Executive Order (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.

The No-Build Alternative would not be subject to EO 13112 on Invasive Species.

5.11.3 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

This project is subject to and will comply with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping, effective April 26, 1994. The department implements this Executive Memorandum on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual. In compliance with EO 13112, a native and locally-adapted seed mix would be used in the landscaping and revegetation of disturbed areas.

The No-Build Alternative would not be subject to the Executive Memorandum on Environmentally and Economically Beneficial Landscaping.

5.11.4 Impacts to Wildlife

Common wildlife species of Central Texas that are not protected include various species of raccoons, opossums, deer, rattlesnakes, skunks, squirrels, armadillos, and various species of reptiles and birds. Many of these species are highly mobile, therefore, are unlikely to be affected. Additionally, habitat for these species is marginal and of low quality within the project area due to size and the presence of the existing I-35 facility. The project will follow the requirements of the Migratory Bird Treaty Act, as described in **Section 5.11.6**.

The No-Build Alternative would not have an impact on wildlife in the project area.

5.11.5 Migratory Bird Protections

The proposed project would comply with applicable provisions of the Migratory Bird Treaty Act (MBTA) and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federally or state-approved options. Additionally, it is TxDOT 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.

The No-Build Alternative would not have an impact on migratory birds, their nests, or their young.

5.11.6 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1934 was enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. The act requires federal agencies to consider the effect that water-related projects have on fish and wildlife resources; act to prevent loss or damage to these resources; and provide for the development and improvement of these resources. This project may impact five potentially jurisdictional streams within the proposed project area.

No practicable alternatives were identified that would avoid impacts. One preliminary alternative proposed a single managed lane beginning south of US 290W/SH71 and continuing to SH 45SE, but this is not a feasible option because of possible delays and inconsistent travel times due to having a single managed lane. The other preliminary alternative that proposed two managed lanes at grade beginning south of US 290W/SH 71 and continuing to SH 45SE would be less safe, require a significant amount of additional ROW required and possible displacements.

Additionally, the project includes all practicable measures to minimize harm - using bridges to span wetlands and waters, minimize ROW, and maintain locations of existing side roads to maximum extent practicable.

The project is anticipated to require a nationwide permit issued by the USACE. Compliance with the Fish and Wildlife Coordination Act will be accomplished by complying with the terms and conditions of the nationwide permit.

5.11.7 Bald and Golden Eagle Protection Act of 2007

The project is not within 660 feet of an active or inactive Bald or Golden Eagle nest. Therefore, no coordination with U.S. Fish and Wildlife Service (USFWS) is required.

The No-Build Alternative would have no impact on Bald or Golden Eagles.

5.11.8 Magnuson-Stevens Fishery Conservation Management Act

The Essential Fish Habitat/Magnuson-Stevens Fishery Conservation and Management Act does not apply.

5.11.9 Marine Mammal Protection Act

The proposed project does not contain suitable habitat for marine mammals.

5.11.10 Threatened, Endangered, and Candidate Species

The project is expected to occur within areas of existing TxDOT ROW, proposed ROW, construction easements, and drainage easements (project area). The project area is located within Travis and Hays counties, Texas. Any habitat within the project area is heavily disturbed by the existing I-35 facility.

Federally Listed Species

The Endangered Species Act (ESA) affords protection for federally listed threatened and endangered species, and where designated, critical habitat for these species. The U.S. Fish and Wildlife Service (USFWS) maintains a list of federally threatened and endangered species potentially present for each Texas county. Additionally, the USFWS maintains a list of candidate species, which are species that are not currently protected as threatened or endangered species but have the potential to become listed as a threatened or endangered species in the future. The USFWS Information for Planning and Consultation tool (IPaC) was accessed January 22, 2021 for Travis and Hays counties. An updated IPaC was accessed on May 26, 2021, and November 2, 2021.

The November 2021 USFWS IPaC list includes 14 species, 11 of which are listed as threatened or endangered, 1 that is listed as federally proposed, and 2 that are listed as candidate species. Per the IPaC no critical habitats were identified within the project area.

The project area was found to contain marginal suitable habitat for one federally proposed endangered species, the Texas fatmucket (*Lampsilis bracteata*). Preliminary surveys detected Texas fatmucket near the proposed project area at Onion Creek and this species may potentially occur within the Onion Creek crossing. Therefore, it was determined that the proposed project may effect the Texas fatmucket. The Texas fatmucket is also a state-threatened species, therefore, BMPs will be implemented at the Onion Creek crossing through the coordination with TPWD to protect this species. TxDOT will conference with the USFWS to address potential impacts to this species prior to the start of construction at the Onion Creek crossing.

Additionally, the monarch butterfly is a listed candidate species and the project is in range of suitable habitat for this species. However, no consultation with USFWS is required at this time. TxDOT is a partner in the Nationwide Candidate Conservation Agreement with Assurances/Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands (Agreement). The Agreement authorizes incidental take for all activities included in the proposed project should the monarch butterfly be listed as endangered or threatened. If the monarch butterfly is proposed for listing during the life of this project, the impacts to monarch butterflies will be reevaluated to determine the appropriate course of action, which may include conference or consultation with USFWS.

No other federally listed threatened, endangered, or candidate species from the IPaC list were found to have suitable habitat within the project area, a determination of "No Effect" has been made for the remaining federally listed species, which include the Golden-cheeked Warbler (*Dendroica chrysoparia*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Whooping Crane (*Grus americana*), Austin blind salamander (*Eurycea waterlooensis*), Barton Springs salamander (*Eurycea sosorum*), Jollyville Plateau salamander (*Eurycea tonkawae*),

Tooth Cave ground beetle (*Rhadine persephone*), Bee Creek Cave harvestman (*Texella reddelli*), Bone Cave harvestman (*Texella reyesi*), Tooth Cave spider (*Neoleptoneta myopica*), and the bracted twistflower (*Streptanthus bracteatus*).

The No-Build Alternative would not have an impact any federally listed threatened or endangered species.

For more detailed information regarding federally listed species, refer to the Species Analysis Form and Species Analysis Spreadsheet.

State-Listed Species

State-listed threatened and endangered species are protected by state and local laws within Texas (Chapters 67 and 68 of the Texas Parks and Wildlife Code and Sections 65.171 - 65.18 of Title 31 of the TAC).

The Texas Parks and Wildlife Department (TPWD) maintains a database of threatened and endangered species by county for the State of Texas. The Rare, Threatened, and Endangered Species of Texas (RTEST) list was obtained for Travis and Hays counties. The list provides detailed information on habitat requirements for each of the listed species, which were compared to habitat types that were visually observed within the project area. Additionally, species occurrence data were obtained from the TPWD Texas Natural Diversity Database (TxNDD) on January 22, 2021 for the project area are included in **Appendix F, Figure 9** (TPWD, 2021). An updated RTEST list was accessed on May 26, 2021 and November 2, 2021.

Marginal suitable habitat is present for one state threatened species within the project area: Texas fatmucket, and 11 SGCN species: cave myotis bat (*Myotis velifer*), Correll's false dragon head (*Physostegia correllii*), Guadalupe bass (*Micropterus treculii*), Greenman's bluet (*Houstonia parviflora*), Mexican free-tailed bat (*Tadarida brasiliensis*), narrowleaf brickelbush (*Brickellia eupatoriodes* var. *gracillima*), net-leaf bundleflower (*Desmanthus reticulatus*), Texas garter snake (*Thamnophis sirtalis annectens*), Texas milk vetch (*Astragalus reflexus*), Texas shiner (*Notropis amabilis*), and tree dodder (*Cuscuta exaltata*).

The suitable habitat is present within the streams, particularly Onion Creek (Texas shiner, Guadalupe bass, Texas fatmucket), woodlands (Texas garter snake), grasslands (plants), and bridges (cave myotis bat and Mexican free-tailed bat) that occur within the project area. However, the suitable habitat is considered marginal due to size, condition, and proximity to urbanized ROW. Work activities within Onion Creek may potentially impact species including the Guadalupe Bass, Texas shiner, and the Texas fatmucket. Evidence of bat activity, including guano and bat vocalizations, were noted at the Onion Creek and Slaughter Creek bridges during field reconnaissance; however, bats were roosting within bridge crevices and could not be visually observed. Therefore, the specific species of bats present within the project area could not be determined; however, the bridges over Onion Creek and Slaughter Creek could potentially support the cave myotis bat and Mexican free-tailed bat.

Regarding encroachment-alteration effects under the Build Alternative, the effects of removing important wildlife habitat areas would be limited to the unmaintained vegetation and the water features present within the project construction area. Accordingly, impacts to habitat would be limited to the area of direct impacts, and no encroachment-alteration impacts are expected.

Bat BMPs will be implemented for the cave myotis bat and Mexican free-tailed bat. Fish BMPs will be implemented for the Guadalupe bass and Texas shiner at the Onion Creek crossing. Freshwater mussel BMPs will be implemented for the Texas fatmucket at the Onion Creek crossing. Terrestrial reptile BMPs will be implemented for the Texas garter snake (2013 TxDOT/TPWD MOU; 2017 Revision). TxDOT initiated coordination for the remaining species with TPWD on January 25, 2021. Wildlife and vegetation BMPs are included in Section 8.0.

Coordination with TPWD regarding potential effects to natural resources was conducted and completed on May 7, 2021. The coordination correspondence is included in **Appendix G**.

For more detailed information regarding state listed species, refer to the Species Analysis Form and Species Analysis Table.

The No-Build Alternative would not have an impact any state listed threatened or endangered species or SGCN.

5.12 Air Quality

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.

Carbon Monoxide Traffic Air Quality Analysis

Traffic for the estimated time of completion year 2024 and design year 2045 is estimated to be 246,445 vehicles per day and 333,441 vehicles per day, respectively; therefore, triggering the need for a traffic air quality analysis. It is assumed topography and meteorology of the area in which the project is located would not seriously restrict dispersion of the air pollutants. The traffic data used in the analysis was obtained from AECOM General Engineering Consultant and were based on methodologies accepted by the TxDOT Transportation Planning and Programming (TP&P) Division. A traffic air quality analysis was completed and is included in the Carbon Monoxide Traffic Air Quality Analysis technical report which is available for review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

Carbon monoxide (CO) concentrations for the proposed action were modeled using the CAL3QHC model and the TxDOT Emission Rate Lookup Tables for the Austin area and factoring in adverse meteorological conditions and sensitive receptors at the ROW line. Local concentrations of carbon monoxide are not expected to exceed national standards at any time. **Table 7** summarizes the predicted carbon monoxide concentrations in each modeled year.

Table 7: Project Carbon Monoxide Concentrations

Year	1-hour CO Concentration Parts Per Million (ppm)	1-HR % NAAQS	8-hour CO Concentration (ppm)	8-HR % NAAQS
2024	1.9	5.43	1.51	16.78
2045	1.7	4.86	1.37	15.22

* The National Ambient Air Quality Standard (NAAQS) for CO is 35 ppm for 1-hour and 9 ppm for 8-hours. Analysis includes a one-hour background concentration of 1.6 ppm and an 8-hour background concentration 1.3 ppm.

Mobile Source Air Toxics

The proposed project would increase capacity and the AADT in the design year is above 140,000 vehicles per day (vpd); therefore, a quantitative Mobile Source Air Toxics (MSAT) analysis is required. An MSAT analysis was completed and is included in the Mobile Source Air Toxics Quantitative Analysis technical report which is available for review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

Project Specific MSAT Information

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives (FHWA, 2017a).

Under the Build Alternative in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to the reduced vehicle miles traveled (VMT) associated with more direct routing. Under each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built along I-35 between SH 71 and Stassney Lane. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project specific MSAT health impacts. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA, 2017b). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

The proposed project would increase capacity and the AADT in the design year is above 140,000 vpd; therefore, a quantitative MSAT analysis is required.

Analysis Methodology

A quantitative MSAT analysis was conducted consistent with TxDOT's Environmental Guide: Volume 2 Activity Instructions, July 2020 and the Documentation Standard for a Quantitative

MSAT Technical Report, July 2020. For this project, three study scenarios, 2018 Existing, 2045 No-Build, and 2045 Build were selected for the quantitative MSAT analysis.

A project links method was used for the MSAT analysis. These links include all roadways within the project study limits along I-35 including mainlanes, express lanes, frontage roads, direct connectors, and ramps.

Emissions factors from TxDOT's Emission Rate Look-up Tables for MSAT were used for this analysis. These tables provide emission rates in grams/vehicle mile traveled for the years 2010 through 2040 for several areas in Texas, including the Austin area. Emission factors are listed based on the year being analyzed, the type of roadway, and average vehicle speed. Separate emission factors were used for each analysis year (2018 and 2045) and build scenario. Although the look-up tables only provide emission factors through the year 2040, the emission factors for the year 2040 were utilized to represent emissions for the project year 2045. This is a conservative assumption as vehicle emissions are generally reduced as newer, cleaner emitting vehicles enter the vehicle fleet each year. Only the VMT from the portions of the roadways included in the MSAT project links were included in the MSAT analysis.

MSAT Analysis Results

MSAT emissions from this project were estimated for a base year (2018) and the project design year (2045). For the project design year, emissions were calculated for a No-Build condition and a Build condition in which the effects of the project are accounted for. The results were compared to the base year 2018 and to each other to determine the overall trend in emissions over time, as well as the emission impacts due to the project in key years. **Table 8** summarizes the MSAT emissions by pollutant and total MSAT emissions in each modeled year and scenario. This table also shows the corresponding VMT total associated with these emissions and summarizes the percent difference in MSAT emissions in each modeled year and scenario.

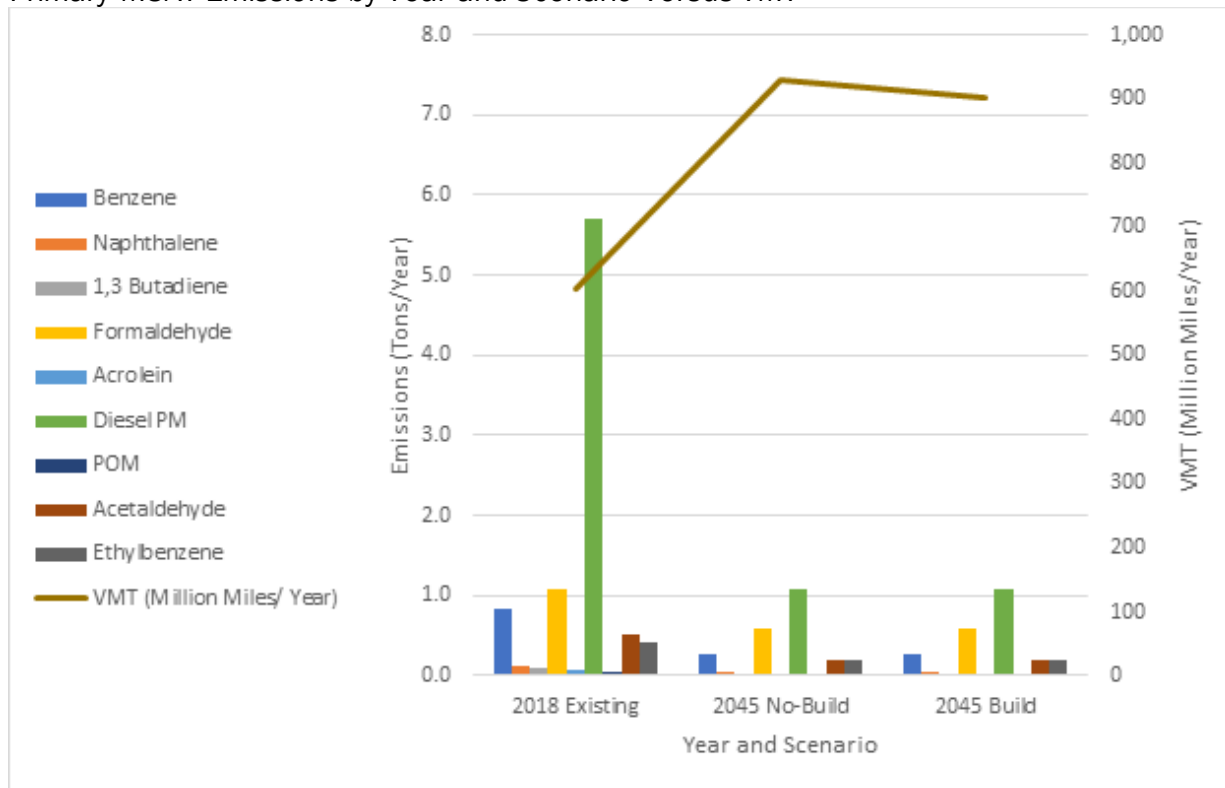
Table 8: Annual MSAT Emissions by Year, Scenario, and Pollutant

MSATs	Emissions (tons/year)			Change Between 2045 Build and 2045 No-Build	Change between 2045 Build and 2018 Existing
	2018	2045			
	Existing	No-Build	Build	Difference %	Difference %
Benzene	0.84	0.28	0.27	-3.6	-68.4
1,3- Butadiene	0.09	0.002	0.002	-0.1	-98.0
Formaldehyde	1.09	0.58	0.58	-0.7	-47.0
Acrolein	0.07	0.03	0.03	-0.7	-61.7
Naphthalene	0.12	0.05	0.05	-1.0	-60.3
Acetaldehyde	0.51	0.19	0.19	-0.8	-62.4
Ethylbenzene	0.42	0.19	0.19	-1.1	-54.7
POM	0.05	0.01	0.01	-3.0	-72.5
Diesel PM	5.71	1.09	1.08	-0.8	-81.0
Total Emissions	8.91	2.43	2.40	-1.1	-73.1
Annual VMT (million miles)	605	929	901	-3.1	49.0

As shown in **Table 8**, the MSAT emissions evaluated all decrease when comparing the 2045 Build scenario with No-Build scenario. In addition, when compared to the No-Build scenario, the total MSAT emissions from the project show a decrease of 1.1 percent in the 2045 Build scenario compared to the No-Build scenario. When compared to the 2018 existing conditions, the total MSAT emissions are estimated to decline by about 73 percent from 2018 to 2045 if the project is constructed. These reductions occur despite projected increases in VMT from 2018 to the 2045 Build scenarios of about 49 percent

EPA's stringent vehicle emission and fuel regulations, combined with fleet turnover, are expected to substantially lower fleet average emission rates for MSATs in the future relative to today. Overall, best available information indicates that, nationwide, regional levels of MSATs are expected to decrease in the future due to fleet turnover and the continued implementation of more stringent emission and fuel quality regulations. Nevertheless, it is possible that some localized areas may show an increase in emissions and ambient levels of these pollutants due to locally increased traffic levels associated with the project.

Primary MSAT Emissions by Year and Scenario Versus VMT



MSAT Conclusion

Both the Build and No-Build Alternative in the design year are expected to be associated with lower levels of MSAT emissions compared to the base year. This analysis shows an emissions reduction from the No-Build to the Build scenarios in 2045. The No-Build scenario has slightly higher emissions than the Build scenario due to the slightly reduced VMT associated with more direct routing in the Build Alternative. EPA's vehicle and fuel regulations are expected to result in substantially lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover. The magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area would be substantially lower in the future than they are today, regardless of the scenario (No-Build or Build) chosen.

Construction Emissions

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

The potential impacts of particulate matter emissions would be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from vehicles and equipment. TxDOT encourages construction contractors to use this and other

local and federal incentive programs to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found on TCEQ's TERP website (TCEQ, 2020).

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

5.13 Hazardous Materials

The Hazardous Material Initial Site Assessment (ISA) Report, available from the TxDOT South Travis/Hays County Area Office, included a review of topographic maps, historic aerial photographs, a regulatory database search, and a site visit.

The Geosearch regulatory database search identified 126 sites in databases. However, any hazardous materials concerns were resolved within the ISA and no unresolved hazardous materials concerns were identified (see **Appendix F, Figure 10**). Two additional unmapped gas stations, Fast Break 4 at 14500 South I-35 in Buda and Fast Break 6 at 14444 South I-35 in Buda were identified during the site visit conducted on July 28, 2020. These sites are listed on the TCEQ Petroleum Storage Tank registration database and were not identified as a concern to the proposed project. An update, including a field review, was conducted on June 7, 2021. The update did not identify any new concerns. No further hazardous materials action is required.

During construction, the contractor will take appropriate measures to prevent, minimize, and control the spill of fuels, lubricants, and hazardous materials that the contractor brings into the construction staging area.

Based on available historic data, existing land use, and the nature of the proposed project, there are no other hazardous materials concerns anticipated for the Build Alternative or the No-Build Alternative.

5.14 Traffic Noise

A traffic noise analysis was conducted in accordance with TxDOT's (FHWA approved) 2011 Guidelines for Analysis and Abatement of Roadway Traffic Noise. The Traffic Noise Analysis Report (2021), which includes details about the analysis, is available for public review at the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

Build Alternative

Existing and predicted traffic noise levels were modeled at representative land use activity areas (receptors) adjacent to the project that might be impacted by traffic noise and would potentially benefit from feasible and reasonable noise abatement.

Modeled noise-sensitive locations were primarily residential, but also included restaurants, playgrounds, and schools. The traffic noise analysis determined that out of 57 representative

receptors, 30 were predicted to have noise levels that approach or exceed the FHWA noise abatement criteria or that substantially exceed the existing noise levels; therefore, the proposed project would result in traffic noise impacts (see **Table 9** and **Figure 11** in **Appendix F**).

Table 9: Traffic Noise Receivers

	Representative Receiver	NAC Category	NAC Level	Existing 2018	Predicted 2038	Change (±)	Noise Impact
R-1	La Quinta Hotel Pool	E	72	65	65	0	No
R-2	Candlewood Suites Hotel Patio	E	72	65	66	+1	No
R-3	Omni Hotel Pool with 5-foot stone wall	E	72	67	68	+1	No
R-4	Ramada Hotel Pool	E	72	66	67	+1	No
R-5	Hideaway Restaurant Outdoor Seating	E	72	67	68	+1	No
R-6	Marriott Restaurant Outdoor Dining Area	E	72	64	64	0	No
R-7	Springhill Suites Outdoor Seating/Patio	E	72	70	71	+1	Yes
R-8	Courtyard Marriott Hotel Balconies	E	72	67	68	+1	No
R-9	Residence Inn Pool/Tennis Courts	E	72	69	69	0	No
R-10	Red Roof Inn Hotel Pool	E	72	65	66	+1	No
R-11	Comfort Suites Hotel Pool	E	72	69	70	+1	No
R-12	KIPP Austin School	D	52	35	37	+2	No
R-13	Recreation Field	C	67	69	71	+2	Yes
R-14	Stassen woods Apartments	B	67	67	67	0	Yes
R-15	School-Wayside: REAL Learning Academy	D	52	33	35	+2	No
R-16	Applebee's Outdoor Seating Area	E	72	66	67	+1	No
R-17	Taco Cabana Outdoor Seating Area	E	72	68	69	+1	No
R-18	Apartment at South Point Pool	C	67	66	66	0	Yes
R-19	Oak Meadow Baptist Church Playground	C	67	64	65	+1	No
R-20	Austin Lone Star RV Resort Pool	C	67	73	74	+1	Yes

Representative Receiver		NAC Category	NAC Level	Existing 2018	Predicted 2038	Change (±)	Noise Impact
R-21	RV	B	67	66	68	+2	Yes
R-22	Ladera Apartment Balconies	B	67	69	69	0	Yes
R-23	Ladera Apartment Balconies	B	67	68	69	+1	Yes
R-24	Waters at Bluff Springs Apartment Balconies	C	67	63	65	+2	No
R-25	Waters at Bluff Springs Apartment Pool	B	67	62	64	+2	No
R-26	Valor School Playground	C	67	69	70	+1	Yes
R-27	Valor Charter School	D	52	43	44	+1	No
R-28	Lenox Soco Apartment Pool	C	67	63	64	+1	No
R-29	Ethos Apartments Pool	C	67	62	62	0	No
R-30	Ethos Apartment Balconies	B	67	64	64	0	No
R-31	Griffis Southpark Apartment Pool	C	67	65	68	+3	Yes
R-32	Griffis Southpark Apartment Balconies	B	67	67	70	+3	Yes
R-33	Don Darios Restaurant Outdoor Seating	E	72	70	73	+3	Yes
R-34	Starbucks Outdoor Seating	E	72	70	72	+2	Yes
R-35	Southpark Crossing Apartment Pool	C	67	64	66	+2	Yes
R-36	Southpark Crossing Apartment Balconies	B	67	64	65	+1	No
R-37	Single Family Houses (12)	B	67	64	67	+3	Yes
R-38	BreWingz on the Fly Restaurant Outdoor Seating Area	E	72	63	67	+4	No
R-39	First Class Child Development Center Playground	C	67	60	63	+3	No
R-40	Bridges at Asher Apartment Balconies	B	67	69	72	+3	Yes
R-41	Lenox Springs II Apartment Balconies	B	67	65	66	+1	Yes
R-42	Lenox Springs Apartment Balconies	B	67	61	64	+3	No

	Representative Receiver	NAC Category	NAC Level	Existing 2018	Predicted 2038	Change (±)	Noise Impact
R-43	Bridges at Asher Apartment Balconies	B	67	69	71	+2	Yes
R-44	Lenox Springs Apartments Balconies	B	67	63	66	+3	Yes
R-45	Single Family Residence Front Porch	B	67	70	73	+3	Yes
R-46	Onion Creek Apartment Balconies	C	67	66	69	+3	Yes
R-47	Farmhouse Apartments Pool	B	67	67	70	+3	Yes
R-48	Crown Colony Patios	B	67	67	70	+3	Yes
R-49	Multifamily Backyard	B	67	65	68	+3	Yes
R-50	Outdoor Seating Restaurant Craig O's	E	72	64	67	+3	No
R-51	Colonial Grand at Onion Creek Apartment Balconies	B	67	63	67	+4	Yes
R-52	Condo Pool	C	67	64	66	+2	Yes
R-53	Mansions at Onion Creek Apartment Balconies	C	67	67	72	+5	Yes
R-54	St. Alban's Church Playground	B	67	71	73	+2	Yes
R-55	Park at Estancia Apartment Balconies	B	67	66	67	+1	Yes
R-56	Estancia Villas Apartments Pool	B	67	56	56	0	No
R-57	Estancia Villas Apartment Balconies	C	67	68	67	-1	Yes

Noise abatement measures were considered and analyzed for each impacted receptor location. Abatement measures, typically noise barriers, must provide a minimum noise reduction, or benefit, at or above the threshold of 5 dB(A). A barrier is not acoustically feasible unless it reduces noise levels by at least 5 dB(A) at greater than 50 percent of first row impacted receptors. To be reasonable, the abatement measure must not exceed the cost-effectiveness criterion of \$25,000 for each receiver that would benefit by a reduction of at least 5 dB(A) and the abatement measure must be able to reduce the noise level at (a minimum) of one impacted, first row receiver by at least 7 dB(A) in the predicted noise level (noise reduction goal).

Two noise barriers were found to be both reasonable and feasible and are recommended for incorporation into the proposed project (**Table 10**). Noise barriers were not reasonable and

feasible for the remaining impacted representative receivers, and abatement is not proposed for those locations. Additional details regarding the barrier analysis can be found in the Traffic Noise Analysis Report (2021). The Traffic Noise Analysis Report also includes a Noise Barrier Constructability Assessment that further evaluates proposed noise barriers for R-40 and R-43. The proposed noise barrier discussions below have been updated to reflect the alternate barrier constructability assessment results.

Noise barriers are proposed at the following locations:

R-40: This receiver represents an apartment complex with 13 first floor patio spaces and 18 second and third floor balcony spaces. 41 of the first-row receptors had predicted traffic noise impacts. Based on preliminary calculations, a traffic noise barrier along the ROW of R-40 that is 22 feet tall and 594 feet long met the 7 dB(A) noise reduction design goal at 20 impacted, first row receptors and the 5 dB(A) reduction at greater than 80 percent of impacted first row receptors without surpassing the cost effectiveness factor, thereby making it both feasible and reasonable.

R-43: This receiver represents an apartment complex with five first floor patio spaces, 16 second floor balcony spaces, and 4 third floor balcony spaces. All 25 of the first-row receptors had predicted traffic noise impacts. A traffic noise barrier along the ROW of R-43 that is 12 feet tall and 1,016 feet long met the 7 dB(A) noise reduction design goal at eight impacted, first row receivers and the 5 dB(A) reduction at 60 percent of impacted first row receivers without surpassing the cost effectiveness factor, thereby making it both feasible and reasonable.

The traffic noise barrier proposal for R-40 and R-43 can be seen in **Table 10** below and in **Figure 11** in **Appendix F**.

Table 10: Noise Barrier Proposal (preliminary)

Barrier	Representative Receivers	Total # Benefited	Barrier Length (ft)	Barrier Height (ft)	Total Cost	Cost per Benefitted Receiver
1	R-40	28	594	22	\$561,429	\$20,051
2	R-43	13	1,016	12	\$1,247,246	\$95,942

Any subsequent project design changes may require a reevaluation of this preliminary noise barrier proposal. The final decision to construct the proposed noise barrier will not be made until completion of the project design, utility evaluation, and polling of all benefited and adjacent property owners and residents.

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, that no new activities are planned or constructed along or within the following predicted (2038) noise impact contours (**Table 11**).

Table 11: Traffic Noise Contours

Undeveloped Area	Land Use	Impact Contour	Distance from ROW
I-35 east side, south of Onion Creek Parkway	NAC B and C	66 dB(A)	450 feet from ROW
I-35 east side, south of south of Onion Creek Parkway	NAC E	71 dB(A)	120 feet from ROW

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 receptors is 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.

New development along the corridor was captured through a permit search and verified in a field visit conducted on June 4, 2021 and again December 3, 2021. Four additional receivers were identified and existing and predicted traffic noise levels were calculated using TNM2.5 (Table 12).

Table 12: Permitted Traffic Noise Receivers

Representative Receiver	NAC Category	NAC Level	Existing 2018	Predicted 2038	Change (±)	Noise Impact
Permit 1 Aloft hotel pool	E	72	66	66	0	No
Permit 2 Condos	B	67	62	62	0	No
Permit 3 Water Oak Apartment Balconies	B	67	69	70	+1	Yes
Permit 4 View at Estancia Apartment Balconies	B	67	70	70	0	Yes

As indicated in Table 12, the proposed project would result in a traffic noise impact at two out of the four new receivers identified.

Traffic noise barriers were evaluated for each of the impacted receiver locations shown in Table 12. Traffic noise barriers would not be feasible and reasonable for the following impacted receivers and, therefore, are not proposed for incorporation into the project:

Permit 3: This receiver represents 17 impacted receptors at the Water Oak Apartment complex, which is currently under construction. A traffic noise barrier up to 22 feet tall was modeled for the full length of available ROW (619') adjacent to the I-35 NB frontage road. The model concluded that a traffic noise barrier would not achieve the minimum feasible noise reduction of at least 5 dB(A) at greater than 50 percent of impacted first row receivers or the

noise reduction design goal of 7 dB(A) at any impacted first row receiver. This traffic noise barrier is not proposed for incorporation into the project.

Permit 4: This receiver represents 65 impacted receptors at the View at Estancia Apartment complex, which is permitted for construction. A traffic noise barrier up to 22 feet tall was modeled for the full length of available ROW (1,076') adjacent to the I-35 SB frontage road. The model concluded that a traffic noise barrier would not achieve the minimum feasible noise reduction of at least 5 dB(A) at greater than 50 percent of impacted first row receivers, but it does meet the noise reduction design goal of 7 dB(A) at any impacted first row receiver. This traffic noise barrier is not proposed for incorporation into the project.

A copy of this traffic noise analysis will be made 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 proposed project.

No-Build

Under the No-Build Alternative, the proposed project would not be constructed. If the No-Build Alternative were implemented, traffic noise levels would be expected to increase with an associated future increase in traffic volumes.

5.15 Induced Growth

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

The National Cooperative Highway Research Program (NCHRP) Report 466 Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects identifies three broad categories of indirect effects:

1. Alteration of the behavior and functioning of the affected environment caused by project encroachment (physical, chemical, biological) on the environment;
2. Project-influenced development effects (i.e., the land use effect); and
3. Effects related to project-influenced development effects (i.e., effects of the change in land use on the human and natural environment).

The first category of effects is known as “encroachment alteration” and is more closely related to direct impacts than the second and third categories, or “induced growth” effects.

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

use and development and will be the focus of the proceeding analysis.

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

5.15.1 Step 1 Methodology

The project scoping process determined that an indirect impacts analysis is required for the proposed project due to the fact that the area is experiencing population growth. Due to the mix of land uses within the project area and the scope of proposed project activities, a combination of the planning judgment and cartographic methods were used to identify indirect impacts. The planning judgment method is a primarily qualitative method which uses input from local planning information and incorporates the cartographic method in an analysis of growth patterns and trends in the area. The proposed project falls within areas with multiple planning agencies. As a result of this project traversing multiple planning areas, a combination of extraterritorial jurisdiction (ETJ), land use, and zoning maps, and information from CAMPO, Hays County, the City of Buda, City of San Marcos, Travis County, and the City of Austin was compiled and assessed to determine current and future development patterns. Additionally, questionnaires were sent to local public officials and planners, soliciting input on any known proposed land development within their jurisdiction or any planned capital improvement projects.

The cartographic analysis included review of historic aerial imagery, as well as analysis of current development and potential constraints on future development. Assumptions associated with this combined methodology include the assumption that growth patterns will be consistent with historical trends, and that planning, and zoning maps would guide growth in the future. Limitations of the methodology include potential data gaps and more qualitative data than quantitative data.

5.15.2 Step 2 Project Area and Timeframe

The indirect impacts analysis project area, referred to as the Area of Influence (AOI), was developed and refined based on an evaluation of existing land use, local planning documents, and parameters of the proposed project. A preliminary indirect impacts project area was defined using adjacent major traffic generators and census traffic analysis zones, because these encompassed the local commute shed and the communities believed to be impacted or influenced by the Capital Express South project and the associated improved mobility along I-35 if the proposed project was constructed. These boundaries include Howard Lane as the northern boundary, US 183 as the eastern most boundary, Centerpointe Road in San Marcos as the southern boundary, and Silver Mine Drive as the western most boundary (see **Appendix F, Figure 12**). The total acreage of the AOI is approximately 167,633 acres. The temporal boundary of the AOI has been defined as the horizon year of the CAMPO Transportation Plan (2045) (CAMPO, 2020).

Currently, the density and type of development within the AOI reflects the urban to suburban nature of the project area, as well as the existing transportation corridor. The general character of the AOI is residential, and commercial, with areas of undeveloped land use scattered

throughout the AOI.

5.15.3 Step 3 Project Area Subject to Induced Growth

Step 3 is used to determine areas within the AOI that would be most likely to experience induced growth caused by constructing the Capital Express South project. Using the National Land Cover Database, constraints on development were identified within the AOI. The AOI has a total of approximately 69,323 acres of undeveloped land and approximately 98,310 acres of developed land.

5.15.4 Step 4. Likelihood of Growth in Induced Growth Areas

This step presents information on development trends and community goals within the AOI. Following this discussion, areas of potential future development are identified and quantitatively evaluated. As noted in NCHRP Report 466, “[i]ndirect effects can be linked to direct effects in a causal chain” (NCHRP, 2002). Reasonably foreseeable effects are “sufficiently likely to occur that a person of ordinary prudence would take them into account in making a decision” (NCHRP, 2002). Reasonably foreseeable events must be probable, not just possible. Probability also helps distinguish indirect effects from direct effects: direct effects are often inevitable, while indirect effects are simply probable. The NCHRP Report 466 states “[e]ffects that can be classified as possible but not probable may be excluded from consideration” (NCHRP, 2002). Therefore, this section seeks to determine whether development in the AOI induced by the project is probable.

A review of historic aerial images showed that the project area experienced an increase in development between the years 1995 and 2019. During that time, pockets of land near major transportation corridors were converted from agricultural land to residential and commercial developments. A majority of that development occurred around I-35 south of Slaughter Lane in Austin through Buda, Kyle, and San Marcos. Since that time, the pace of development has gradually continued to increase, as has the variety of types of development. This is presumably due to the increased population growth within the region.

Regional and local trend data

According to US Census data, the population of Hays and Travis county increased 118.6 and 51.0 percent, respectively, between 2000 and 2019 (U.S. Census Bureau, 2000, 2010, 2019). For comparison the State of Texas grew 35.5 percent during that same time period (see **Table 13**). CAMPO develops future population projections for all of six member counties including Hays and Travis. Those projections show a 196.7 and 79.1 percent increase for Hays and Travis Counties between 2019 and 2045, respectively. For comparison, the State of Texas as a whole is projected to increase 55.2 percent (Texas Demographic Center, 2018). Given the past and projected growth the project AOI is expected to see a continued increase in population.

Table 13: AOI Population Growth

Area	2000 ¹	2010 ²	2019 ³	Percent Change 2000-2019	2045	Percent Change 2019-2045
Hays County	97,589	157,107	213,366	118.6	633,000*	196.7
Travis County	812,280	1,024,266	1,226,805	51.0	2,197,000*	79.1
State of Texas	20,851,820	25,145,561	28,260,856	35.5	43,866,965**	55.2

Source: 1 US Census Bureau 2000 Census Population

2 US Census Bureau 2010 Census Population

3 US Census Bureau American Community Survey 2015-2019. Population and Sex.

*CAMPO 2020. 2045 Regional Transportation Plan.

**Texas Demographic Center. 2018 Population Projections. <https://demographics.texas.gov/data/toepp/projections/>

Local Plans

A combination of local plans exists to guide, monitor, and promote various development activity in the AOI. Imagine Austin is the comprehensive plan for Austin. The City of Buda Transportation Master Plan Update and 2030 Comprehensive Plan are planning documents that state the goals and objectives for development in and around Buda. The CAMPO 2045 Regional Transportation Plan is the overarching plan for the region.

The Imagine Austin planning document is used by City of Austin staff to guide future development and growth in a methodological, appropriate, and desired manner to improve the quality of life for Austin residents. The plan provides a framework for decisions related to physical growth and economic development within Austin and provided goals through the year 2039. This plan includes the preferred scenario for additional population and job growth. The preferred scenario indicates that I-35 in the AOI area is the area where population and job growth is most desired (City of Austin, 2018) and as being the area with the highest population growth. The proposed project would be consistent with these goals.

The City of Buda Transportation Master Plan indicates that the proposed project is in an area where growth is expected and encouraged. Additionally, the plan indicates that HOV lanes along I-35 would be not only consistent with their objectives of plan roadway improvement for existing conditions and future demand, but also the objective of improved connectivity (City of Buda, 2013).

The proposed project is consistent with CAMPO’s 2045 Regional Transportation Plan goals for managed and HOV lanes. Additionally, the proposed project is located in an area that is desired for population and job growth (CAMPO, 2020). The project is included in the CAMPO 2045 RTP (see **Appendix E**).

Potential for Induced Development

The above sections have demonstrated the potential for growth in the AOI during the present to 2045 analysis period. This section will evaluate the nature of this growth and attempt to determine whether it can be causally linked to the proposed project. Project-induced land use change can include project-induced development, the redevelopment of previously developed land, or a change in the rate of development/redevelopment.

The proposed project would accommodate future anticipated traffic demand and growth in the region and improve safety by reducing congestion. According to the NCHRP Report 466 (NCHRP, 2002), NCHRP Project 25- 25 Task 22, Forecasting Indirect Land Use Effects of Transportation Projects (NCHRP, 2007), transportation improvements are a factor in land development decision, but usually not the most important factor.

A questionnaire was sent to local planners including CAMPO, Capital Area Council of Governments, City of Austin, City of Buda, City of Kyle, City of San Marcos, Hays County, and Travis County in August 2020 (see **Appendix H**). The two questions on the questionnaire were as follows:

- Are you aware of any proposed land developments? If so, please mark the general areas on the attached map and provide the location, type, size (e.g., acres, density, number of units), and estimated construction start date of any planned developments.
- Are you aware of any proposed utility installations (water, sewer, electric, communication) or roadway improvements? If so, please mark the locations of the proposed utilities and roadways on the attached map.

The project team received one response from the eight questionnaires that were sent out. Travis County, the one respondent, suggested a review of the City of Austin property profile. The profile showed 89 projects in review within the AOI totaling approximately 1,364 acres. The projects under plan review include 1 apartment complex, 13 commercial, 34 commercial mixed use, 3 condominium, 1 senior living center, 1 general office/retail and restaurant, 1 indoor sports and recreation, 6 hotel/motel, 11 multi-family, 12-office, 1 ROW, 4 subdivisions, and 1 retail.

According to the national land cover database (NLCD), the AOI has 69,323 acres of undeveloped land and approximately 98,310 acres of developed land (see **Figure 13** and **Table 14**) (US Geological Survey, 2016). These undeveloped lands include barren land, cultivated cropland, deciduous forests, emergent herbaceous wetlands, evergreen forests, hay/pasture, herbaceous lands, mixed forest, open water, shrub/scrub, and wood wetlands. Developed lands have four sub categories: developed open space (less than 20 percent impervious surface), developed low intensity, (20 to 49 percent impervious cover), developed medium intensity (50 to 79 percent impervious cover), developed high intensity (80 percent or more impervious surface). **Table 14** provides a breakdown on land use types and likelihood of development/redevelopment in the AOI (see **Figure 14**). Likelihood is based on availability of land use type, availability of utilities, costs of development, and regulations surrounding development. The data indicate that in terms of induced growth development/redevelopment approximately 21 percent of land within the AOI with a high likelihood, 58 percent moderate likelihood induced growth development, 19 percent low likelihood induced growth

development, and 2 percent unlikely induced growth development. Even though these lands have the potential for induced growth development/redevelopment, the exact type, location, timing, and density of future developments within the AOI area are unknown at the time of the report preparation. It should be noted that all future development will comply with local municipal regulations and ordinances.

Table 14: AOI Developed and Undeveloped Land Subject to Induced Growth

Land Use Type Area	Acreage	Likelihood of Development or Redevelopment
Barren Land	651	High, as this has fewer obstacles to development.
Cultivated Crops	6,384	Moderate, as this has limited protections to development.
Deciduous Forest	6,896	Moderate, as this has limited protections and logistical challenges to development.
Developed, High Intensity	15,120	Moderate, has existing development with regulatory hurdles and highest expense.
Developed, Low Intensity	25,569	Moderate, has existing development but tends to be more expensive development.
Developed, Medium Intensity	25,362	Moderate, has existing development, but tends to be more expensive and have regulatory hurdles.
Developed, Open Space	32,245	Low, includes parks and regulated lands.
Emergent Herbaceous Wetlands	51	Unlikely due to wetland protections.
Evergreen Forest	17,163	Moderate, as this has limited protections to development.
Hay/Pasture	1,636	High, as this has fewer obstacles to development.
Herbaceous	15,444	High, as this has limited protections to development.
Mixed Forest	358	Moderate, as this has limited protections to development.
Open Water	1,013	Unlikely due to regulations.
Shrub/Scrub	17,191	High, as this has fewer obstacles

Land Use Type Area	Acreage	Likelihood of Development or Redevelopment
		to development.
Wood Wetlands	2,417	Unlikely due to wetland protections.
Total	167,500	NA
Likelihood of Development or Redevelopment	Acreage	Percentage of Total Land in AOI
High	34,922	21
Moderate	96,852	58
Low	32,245	19
Unlikely	3,481	2

Source: USGS, 2016

5.15.5 Step 5. Resources Subject to Induced Growth Impacts

Table 15 below includes a description of resources present in the areas of potential development and redevelopment within the AOI.

Table 15: Resources Analyzed for Induced Growth Impacts

Resource	Could the resource be indirectly impacted by potential induced growth	Could the potential indirect impacts be considered substantial
Community Resources (includes businesses and residences)	Yes, property values could be influenced by future development. However, additional property tax revenue would be generated by potential induced development.	No, the AOI contains residential neighborhoods, commercial activity centers, and community facilities, such as schools, places of worship, medical facilities, and parklands within the corridor. The proposed project would improve mobility and safety which would improve access to these facilities.
Historic-Age Properties	The AOI contains several parcels identified as areas for potential growth that were outside of the APE for the historic resources survey. A review of aerial imagery	Maybe. Buildings and structures that are 45 years of age at the time of letting date could potentially qualify as historic properties. For publicly funded projects NRHP-listed or

Resource	Could the resource be indirectly impacted by potential induced growth	Could the potential indirect impacts be considered substantial
	indicates some possible historic age standing structures on these parcels.	eligible historic resources are protected by state and federal regulations. However, state or federal regulations do not protect cultural resources for privately funded projects on privately-owned land.
Archeological Resources	Formal surveys have been conducted in parts of the AOI in areas of potential development and redevelopment. There could be a potential for impacts to unknown archeological deposits in areas where less disturbance has occurred.	Maybe. State regulations such as the Antiquities Code of Texas require notification to the THC if ground-disturbing activities will occur on public land and/or will be sponsored by a public entity. Additionally, NRHP-listed or eligible archeological resources are protected by the state and federal regulations for publicly funded projects. However, state and federal regulations do not apply to privately funded projects on privately owned land.
Vegetation and Wildlife Habitat (Including Habitat for State-Listed Species)	<p>Yes. The areas of potential development and redevelopment are vegetated to varying degrees and provide wildlife habitat. The EMST identified several native vegetation communities within the AOI (areas within the project area have been field verified); however, these areas outside the project area but within the larger AOI have not been field verified. Also, the proposed project is within range of suitable habitat for several SGCNs.</p> <p>TPWD maintains lists of potential occurrences for listed species in each Texas county. The TPWD list</p>	No, development would be regulated by local municipal code which include development regulations and tree protection. Additionally, state regulations prohibit harm to state-listed species from private or publicly funded projects.

Resource	Could the resource be indirectly impacted by potential induced growth	Could the potential indirect impacts be considered substantial
	identifies a number of state-listed species that could potentially be present within the AOI.	
Federally Listed Threatened and Endangered Species	<p>Yes. The project area does not include critical habitat or potential habitat for federally listed species. However, the larger AOI intersects a critical habitat polygon and known, occupied habitat for the Austin blind salamander (<i>Eurycea waterlooensis</i>), a federally listed endangered species. Additionally, the areas of potential development in the AOI, not in the project area, include Karst Zone 1 (areas known to contain endangered cave fauna) and Karst Zone 2 (USFWS, 2019) (areas having a high probability of suitable habitat for endangered or other endemic invertebrate cave fauna).</p> <p>Potential impacts to federally listed species are unlikely as there is not suitable, quality habitat and due to the best management practices proposed for this project.</p>	No, the ESA affords protection for federally listed threatened and endangered species and their habitats. The USFWS maintains lists of potential occurrences for listed species in each Texas county. All development, public and private, is subject to the ESA.
Waters of the U.S., including Wetlands	Formal wetland delineations have been completed for the project area but have not been conducted in the remainder of the AOI, the AOI does contain waters and wetlands. If it was verified that the wetlands and waters were Waters of the U.S., then they would be protected by Section 404 of the CWA.	No. USACE regulates the discharge of dredged and fill material into waters of the U.S., including wetlands, under Section 404 of the CWA.

Resource	Could the resource be indirectly impacted by potential induced growth	Could the potential indirect impacts be considered substantial
Floodplains	The AOI does contain land within the 100-year floodplain.	No. Future development within the 100-year floodplain would be in compliance with the appropriate municipal permitting and land use regulations and policies.

5.15.6 Step 6. Identify Mitigation, If Applicable

In summary, the proposed project could influence future land use and development within the AOI by accelerating the development rate. However, such change is consistent with both municipal and regional planning objectives.

Future land development would be regulated by local municipality regulations that address environmental and social impacts by requiring mitigation measures be not only a part of the site design but also a part of the construction process. Additionally, agencies and programs that guide development of a potential project would be similar to the typical mitigation and permitting measures required of TxDOT. For example, all development must comply with flood control regulations under FEMA and the local floodplain administration, the ESA, the CWA, CWA Section 401 Water Quality Certification requirements, CWA Section 404 permits for projects impacting waters of the U.S., and other regulations requiring mitigation if there are effects on species habitat.

Finally, the proposed project is not anticipated to conflict with CAMPO's, the City of Austin or City of Buda's development goals or cause substantial negative indirect induced growth impacts. Therefore, the requirement for mitigating environmental impacts would be limited to mitigating only the direct impacts associated with the proposed project. Any induced growth development would arise after completion of the proposed project, would be regulated by local municipal ordinances and codes, and would be the responsibility of the land developer.

Under the No-Build Alternative, current development rates and patterns would remain constant, and no induced growth would occur.

5.16 Cumulative Impacts

Cumulative effects are defined as effects "on the environment which result from the incremental impact 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).

Based on guidance from TxDOT's Cumulative Impacts Analysis Guidelines (TxDOT, ENV 2019) and Cumulative Impacts Decision Tree (TxDOT, 2014), a cumulative impacts analysis is not required for the proposed project. The proposed project does not cause direct or indirect impacts on a resource, it would not contribute to a cumulative impact on that resource.

Additionally, there are resources that are in poor or declining health in the project area (see **Table 16**); however, the proposed project would not impact those resources. Therefore, the cumulative impacts analysis is not required.

Table 16: Resources/Issues Considered for Cumulative Impacts Analysis

Resources Considered of Direct and Indirect Impacts	Would Proposed Project Induce Growth result in Substantial Impacts?	Is the Resource Scarce or in Poor or Declining Health?	Included for Cumulative Impacts Analysis?	Reasoning
Waters of the U.S. and Wetlands	No	Yes	No	This is excluded because the proposed project would be covered with a Nationwide Permit 14 without preconstruction notice with the US Army Corps of Engineers. Any future development would not likely affect compliance with water quality regulations. Potential induced growth would not be anticipated to adversely impact waters of the U.S. or wetland due to Section 404 of the CWA.
Floodplains	No	No	No	Excluded. Although a portion of the proposed project would lie within the 100-year floodplain, the hydraulic design of the project would permit conveyance of the 100-year flood, and potential inundation of the highway would not cause substantial damage to it, the streams, or other property. Potential induced growth is not anticipated to adversely impact floodplains.
Federally Listed Threatened and Endangered Species	No	Yes	No	Excluded. There is no suitable habitat present for federally listed threatened and endangered species in the project area. There is suitable habitat in the RSA; however, the Endangered Species Act affords protection for federally listed threatened and endangered species and their habitats. The USFWS maintains lists of potential occurrences for listed species in each Texas county. All development, public and private is subject to the Endangered Species Act.
Vegetation and Wildlife Habitat	No	No	No	This is excluded. The proposed project has a footprint that includes approximately 8.0 acres of Tallgrass, Grassland, 1.5 acres of Riparian vegetation, 11.9 acres of Disturbed Prairie. These habitat types are not considered rare or important. The project area contains marginal suitable habitat for one state threatened species within the Project Area: Texas fatmucket (<i>Lampsilis bracteata</i>), and 11 SGCN species within the Project Area; however, due to habitat fragmentation, any impact to these species would be localized to individuals of the population. These impacts would not be

Resources Considered of Direct and Indirect Impacts	Would Proposed Project Induce Growth result in Substantial Impacts?	Is the Resource Scarce or in Poor or Declining Health?	Included for Cumulative Impacts Analysis?	Reasoning
				<p>anticipated to be significant to these species throughout their range.</p> <p>Any impacts associated with the proposed project and any possible subsequent induced growth are not anticipated to result in any impacts to state-listed species. Anticipated induced growth would be regulated by local municipal development ordinances and regulations. Also, state regulations prohibit harm to individuals of state-listed species.</p>
Community Impacts	No	No	No	Excluded. The proposed project would not significantly adversely affect, separate, or isolate any distinct neighborhoods, ethnic groups, or vulnerable populations within the project area. The potential changes in access and travel patterns could result in reduced travel times for residents, employers, or commercial customers along the proposed project corridor. Mobility and safety would be enhanced for all users of the facility due to the added capacity, managed lanes, and pedestrian and bicycle infrastructure. No existing neighborhoods would be segmented or divided.
EJ	No	No	No	This is excluded. No disproportionately high or adverse impacts to minority or low-income populations are anticipated as a result of the proposed project. The proposed project would not result in any displacements. Additionally, surrounding communities would see reduced travel times and increased safety.
Limited English Proficiency	No	No	No	Excluded. Adequate steps are planned to assist the limited English proficiency population within the project area throughout the public involvement process for the proposed project.
Public Facilities/Services/Utilities	No	No	No	This is excluded. The proposed project would provide overall benefits to the socioeconomic resources in the project area. There are commercial activity centers, residential neighborhoods, and community facilities, such as medical facilities and places of worship, throughout the corridor. Potential induced growth is not anticipated to adversely impact any public facilities/services/utilities.
Section 4(f) and 6(f) Properties	No	No	No	This is excluded due to no impacts anticipated to local parks or recreational areas. No adverse effects to NRHP properties are

Resources Considered of Direct and Indirect Impacts	Would Proposed Project Induce Growth result in Substantial Impacts?	Is the Resource Scarce or in Poor or Declining Health?	Included for Cumulative Impacts Analysis?	Reasoning
				anticipated to occur.
Historic Resources	No	No	No	Excluded. The historic resources survey has been completed. TxDOT has determined a finding of no effect to historic properties. Therefore, potential induced growth is not anticipated to adversely impact historic resources.
Archeological Resources	Unknown	No	No	This is excluded. Archeological background studies have been completed. TxDOT determined that no further work is necessary and a no effect to archeological resources.

5.17 Construction Phase Impacts

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 receptors is 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.

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 PM emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. Considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized including compliance with applicable regulatory requirements, it is not anticipated that emissions from construction of this project would have a significant impact on air quality in the area.

5.18 Greenhouse Gas Emissions and Climate Change

The Texas Department of Transportation (TxDOT) has prepared a Statewide On-Road Greenhouse Gas Analysis and Climate Change Assessment technical report (TxDOT 2021). The report discloses: 1) an analysis of available data regarding statewide greenhouse gas (GHG) emissions for on-road GHG emissions, 2) TxDOT actions and funding that support reducing GHG emissions, 3) projected climate change effects for the state of Texas and 4) TxDOT's current strategies and plans for addressing the changing climate. A summary of key issues in this technical report is provided below. Please refer to the technical report for more details.

The Earth has gone through many natural changes in climate over time. However, since the industrial revolution began in the 1700s, atmospheric concentration of greenhouse gas (GHG) emissions have continued to climb, primarily due to humans burning fossil fuel (e.g., coal, natural gas, gasoline, oil and/or diesel) to generate electricity, heat and cool buildings, and power industrial processes, vehicles, and equipment. According to the Intergovernmental Panel on Climate Change (IPCC), this increase in GHG emissions is projected to contribute to future changes in climate (Solomon 2007, Stocker 2013).

5.18.1 Statewide On-road GHG

TxDOT prepared a GHG analysis for the statewide on-road transportation system and associated emissions generated by motor vehicle fuels processing called “fuel-cycle emissions.” EPA’s Motor Vehicle Emissions Simulator (MOVES2014 version) emissions model was used to estimate emissions. Texas on-road and fuel cycle GHG emissions are estimated to be 186 million metric tons (MMT) in 2050 and reach a minimum in 2032 at 161 MMT. Future on-road GHG emissions may be affected by changes that may alter where people live and work and how they use the transportation system, including but not limited to: 1) the results of federal policy including tailpipe and fuel controls, 2) market forces and economics, 3) individual choice decisions, 4) acts of nature (e.g. pandemic) or societal changes, and 5) other technological advancements. Such changes cannot be accurately predicted due to the inherent uncertainty in future projections related to demographics, social change, technology, and inability to accurately forecast where people work and live.

5.18.2 Mitigation Measures

Strategies that reduce on-road GHG emissions fall under four major categories:

- Federal engine and fuel controls under the Clean Air Act implemented jointly by EPA and U.S. Department of Transportation (USDOT), which includes CAFE standards;
- “Cash for clunker” programs which remove older, higher-emitting vehicles from roads;
- Traffic system management (TSM) which improves the operational characteristics of the transportation network (e.g., traffic light timing, pre-staged wrecker service to clear accidents faster, or traveler information systems); and
- Travel demand management (TDM) which provides reductions in vehicle miles traveled (VMT) (e.g., transit, rideshare, and bicycle and pedestrian facilities) and requires personal choice decisions.

TxDOT has implemented programmatic strategies that reduce GHG emissions including: 1) travel demand management projects and funding to reduce VMT, such as bicycle and pedestrian facilities, 2) traffic system management projects and funding to improve the operation of the transportation system, 3) participation in the national alternative fuels corridor program, 4) clean construction activities, 5) clean fleet activities, 6) CMAQ funding, 7) transit funding, and 8) two statewide campaigns to reduce tailpipe emissions.

5.18.3 TxDOT and a Changing Climate

TxDOT has strategies that address a changing climate in accordance with TxDOT and FHWA design, asset management, maintenance, emergency response, and operational policies and

guidance. The flexibility and elasticity in TxDOT transportation planning, design, emergency response, maintenance, asset management, and operation and maintenance of the transportation system are intended to consider any number of changing scenarios over time. Additional detail is in the Technical Report.

6.0 Agency Coordination

TxDOT coordinated with the Federally Recognized Tribes with an area interest in the proposed project area and the THC regarding cultural, archeological, and historic resources (see **Appendix G—Agency Coordination**).

In accordance with the MOU between TxDOT and TPWD, TPWD has provided a set of recommended BMPs in a document titled, “Beneficial Management Practices – Avoiding, Minimizing, and Mitigating Impacts of Transportation Projects on State Natural Resources,” which is available on TxDOT’s Natural Resources Toolkit at <https://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/natural-resources.html>. The MOU provides that application of specific BMPs to individual projects will be determined by TxDOT at its discretion. The TPWD-recommended BMPs that will be applied to this project are indicated in the Form – Documentation of Texas Parks and Wildlife Department Best Management Practices prepared for the project, which is included in **Appendix G – Agency Coordination**.

Table 17: Agency Coordination Summary

Agency	Date Initiated	Date Closed	Status
TCEQ	4/27/2021	6/26/2021	Complete
TxDOT – Archeological Resources	5/7/2020	3/3/2021	Complete
TxDOT – Historic Resources	4/16/2020	1/13/2021	Complete
TPWD	1/25/2021	5/7/2021	Complete
Tribal Entities	5/11/2020; 11/15/2021	3/3/2021; 12/16/2021	Complete

7.0 Public Involvement

A public meeting was held on October 17, 2019 at Akins High School located near the southern half of the project area. The meeting was held from 5:30 to 7:30pm. There was a total of 49 attendees and 142 commenters. Feedback received did not include any overwhelming opposition to the project as a whole or how it was presented at the public meeting. Public comments included suggestions for specific exits (such as at SH 71/US 290, Stassney Lane, Slaughter Lane, and FM 1626), signage, and crossings on and along I-35. Some commenters requested that variable toll managed lanes and/or HOV lanes be utilized along this corridor while others showed support for non-tolled managed lanes. There were also comments requesting more multimodal/public transportation options and bicycle and pedestrian safety and infrastructure improvements along the corridor. Concerns about light pollution, climate-change related impacts, noise, heritage trees, and the ability for this project to solve traffic congestion were also raised by some commenters. See **Appendix I** for comments received during this public meeting. Details of the public meeting and comments received are also included in the Public Meeting Summary Report available from the TxDOT

South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

During the public meeting, general comments were made about the congestion and number of mainlanes between SH 71/US 290 and Slaughter Lane. These comments led to the design team extending the fourth mainlane further south on both the southbound and northbound sides. The design team also included additional operational improvements at William Cannon Drive to relieve frontage road and ramp congestion and additional improvements between SH 45SE and Main Street in Buda.

A virtual stakeholder meeting was also held in December 2020. A total of 572 visitors viewed the web address, 292 viewed the English YouTube video, and 72 viewed the Spanish YouTube video. A total of 271 comments were received (see **Appendix J**). The comments submitted on the proposed improvements included comments that related to the following topics: bike/pedestrian access, cost, crossings, design, environment/climate change, lanes, multi-modal/transit, noise, opposition to non-tolled (free) managed lanes, safety, support for project and support for tolled lanes and traffic. A summary of this virtual stakeholder meeting is available from the TxDOT South Travis/Hays County Area Office and also online at <https://my35capex.com/>.

In response to concerns brought forward on the elevated managed lanes, TxDOT initiated an independent analysis conducted by the University of Texas Center for Transportation Research to review operational, safety and environmental justice aspects of this project. This study concluded that the surrounding community would not be divided, displaced, or have reduced access to services as a result of the proposed Build Alternative. The proposed project includes additional entrances and exits to I-35 and frontage road lanes, and more intersections where vehicles would be able to turn more easily to reach community facilities on the opposite side of I-35. It includes additional sidewalks and SUPs which would increase access across I-35 and make it easier for pedestrians and cyclists to access services and community resources. Transit users would benefit from improved travel time reliability from the use of the proposed managed lanes and improved access to existing transit from the pedestrian improvements for first and last mile connections across and along I-35.

The design of the elevated roadway section was kept as low as possible and was thoroughly studied to determine the effects on the surrounding environment, and safeguards were taken to minimize the effects to the extent possible. The elevated managed lanes in the proposed Build Alternative would be on a single structure in the median area of the mainlanes and approximately 130-150 feet from the ROW line. As a point of comparison, the existing I-35 “upper decks” in Austin near the University of Texas campus are about 30-50 feet from the ROW line, therefore from a visual perspective the elevated managed lanes in the proposed Build Alternative would be quite different from the I-35 “upper decks” near the University of Texas campus.

The following changes were made as a result of public comments received at the virtual stakeholder meeting held in December 2020:

- Consider adding an exit to Stassney NB to alleviate congestion at NB frontage road near William Cannon. The design team added a collector-distributor system on the SB side to bypass Stassney and William Cannon which alleviates congestion on the frontage

road at those intersections.

- Need to have additional lanes for traffic. This comment contributed to additional mainlane in southbound direction from south of SH71 to north of William-Cannon. Added additional mainlane in northbound direction from north of Slaughter Ln to south of SH 71. Added 2-lane collector-distributor in southbound direction from north of Stassney to south of William-Cannon. Added additional frontage road lane for a minimum of 3 in each direction from Slaughter Ln to SH45SE.
- Three-lane frontage road needed at Stassney and William-Cannon. This comment contributed to the change to add the 2-lane collector-distributor in the southbound direction to bypass Stassney and William-Cannon to alleviate congestion on the frontage road at these intersections. Also, this comment led to the change to shift the NB entrance ramp south of William-Cannon further south and away from the entrance ramp north of William-Cannon and braided it with entrance ramp north of Slaughter Ln, to improve merge/weave/operations on the frontage roads and mainlanes.
- Comment on diverging diamond interchange design. The Capital Express South project does not propose any diverging diamond interchanges.
- Comments were made on traffic noise levels. The proposed project included a traffic noise analysis (see Section 5.14). The traffic noise analysis proposes noise barriers at three locations.

A public hearing was held for this project on April 27, 2021 – May 26, 2021. In recognition of the COVID-19 pandemic, the public hearing for this project was held virtually, with an in-person option held on April 27, 2021. All required notices and procedures, as required by TxDOT's rules governing the Environmental Review of Transportation Projects and outlined in TxDOT's Public Involvement Handbook, were followed. The NOA of the Draft EA was published in both English and Spanish in various newspapers that serve the project area and was also available online at <https://my35capex.com/>. There was a total of 486 virtual attendees, 7 in-person attendees, and 78 total commenters. Feedback received did not result in any additional design changes to the overall project design. Public comments included suggestions for variable toll managed lanes, while others showed support for non-tolled managed lanes. There were also comments requesting more multimodal/public transportation options and bicycle and pedestrian safety and infrastructure improvements along the corridor. Concerns about climate-change related impacts, noise, elevated managed lanes and the ability for this project to relieve traffic congestion were also raised by some commenters. See **Appendix K** for comments received during this Public Hearing. Details of the Public Hearing and comments received are also included in the Public Hearing Summary Report available from the TxDOT South Travis/Hays County Area Office and can also be found online at <https://my35capex.com/>.

A notice of impending construction would be provided to owners of adjoining property and affected local governments and public officials. The notice may be provided via a sign or signs posted in the ROW, mailed notice, printed notice distributed by hand, or notice via website when the recipient has previously been informed of the relevant website address. This notice would be provided after the environmental decision (i.e., FONSI), but before earthmoving or other activities requiring the use of heavy equipment begin.

8.0 Post-Environmental Clearance Activities and Design/Construction Commitments

8.1 Post-Environmental Clearance Activities

Activities to be completed after environmental clearance are listed and discussed as follows:

1. **Noise:** Traffic noise barriers are proposed to reduce traffic noise impacts. In accordance with TxDOT Guidelines for Analysis and Abatement of Roadway Traffic Noise, polling of adjacent property owners will take place to determine whether or not property owners desire the noise barriers. Additionally, traffic noise workshops will be held to provide information on the proposed noise barriers to adjacent property owners. The traffic noise workshops would be held after the FONSI. 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.
2. **Utilities:** Utility relocations would be required throughout the corridor. Utility agreements and notice to owners would be required for this project prior to construction.
3. **Public Involvement:** Before construction, a notice of impending construction will be provided to owners of adjoining property and affected local governments and public officials
4. **Threatened and Endangered Species:** TxDOT will conference with the USFWS to address potential impacts to the Texas fatmucket prior to the start of construction within the Onion Creek drainage area. This includes any work on the proposed bridge structure or drainage ponds.

8.2 Design/Construction Commitments

As indicated above in Section 6.0, the TPWD-recommended BMPs that will be applied to this project are indicated in the Form – Documentation of Texas Parks and Wildlife Department Best Management Practices prepared for the project, which is included in **Appendix G**.

Other design and construction commitments are as follows:

1. **Archeological Resources:** If unanticipated archaeological deposits are encountered during construction, work in the immediate area will cease, and TxDOT archaeological staff will be contacted to initiate post-review discovery procedures.
2. **Construction (TPDES):** The contractor shall comply with the CGP and SW3P; complete, post and submit NOI and NOT to TCEQ and the MS4 operator; and inspect the project to ensure compliance with the CGP.
3. **Section 401:** The Section 401 Certification requirements for NWP 14 would be met by implementing a SW3P. The SW3P would include at least one BMP for erosion control, sediment control, and post-construction TSS control from the Tier 1 401 Water Quality Certification Conditions for NWPs as published by the TCEQ.
4. **Section 402:** Project contractor will comply with the CGP, SW3P, and complete the appropriate authorization documents.
5. **Section 404:** The proposed project would require an NWP 14 without a PCN. The proposed project would comply with all general conditions of the NWP.

6. Wetlands: The construction contractor would be required to avoid and minimize unnecessary impacts on wetlands during construction. Current design does not include wetland impacts. BMPs would be implemented during construction as appropriate.
7. Floodplains: Notification and coordination with the local floodplain administrator is required because the project is within the 100-year floodplain. This coordination will be completed prior to the start of construction.
8. Drinking Water Systems: If any unknown wells are encountered during construction activities, they would need to be properly plugged in accordance with state statutes.
9. Hazardous Materials: The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for the proposed project would be removed as soon as the work schedules permit. The contractor would initiate early regulatory agency coordination during project development.
10. Detours: County and local public safety officials would be notified of any road closures or detours during construction. Detour timing and necessary rerouting of emergency vehicles would be coordinated with the proper local agencies during construction.
11. Air Quality: Implement fugitive dust control measures contained in specifications to minimize potential impacts of PM emissions during construction
12. Hazardous Materials: Any unanticipated hazardous materials encountered during construction would be handled according to the applicable federal, state and local regulations per TxDOT Specification
13. Project-specific locations (PSLs): Approved PSLs should be placed in upland areas outside of the floodplain/riparian corridor whenever possible.
14. Dewatering: If any dewatering is needed, the contractor must coordinate with TPWD's Kills and Spills Team (KAST).
15. Vegetation: The contractor would avoid and minimize disturbance of vegetation and soils. All disturbed areas would be revegetated, according to TxDOT specifications, as soon as it becomes practicable. In accordance with EO 13112 on Invasive Species, the Executive Memorandum on Beneficial Landscaping, and the 1999 FHWA guidance on invasive species, all revegetation would, to the extent practicable, use only native species. Furthermore, BMPs would be used to control and prevent the spread of invasive species.
16. Migratory Birds: The contractor would take all appropriate actions to prevent the take of migratory birds, their active nests, eggs or young by the use of proper phasing of the project or other appropriate actions. For migratory birds, the following Bird BMPs and MBTA guidelines, as present as a Special Note on the PS&E Environmental Permits, Issues, and Commitments sheet, would be implemented:

The contractor's will be directed to the fact that there is the possibility that migratory birds may be nesting in any woody vegetation or existing structures within the project limits. The contractor shall remove all old migratory bird nests from any woody vegetation or structures between September 16 and February 28 while the nests are not occupied by a bird. In addition, the contractor must be prepared to prevent migratory birds from re-nesting between March 1 and September 15. All methods must be approved by the Austin District Biologist well in advance of planned use.

17. Threatened, Endangered, and Candidate Species: If any species on the Travis and Hays counties threatened and endangered species lists is sighted in the project area during

construction, construction would stop and the contractor would notify the TxDOT Area Engineer. Refer to **Appendix G** for applicable BMPs.

9.0 Conclusion

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

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11.0 Names and Qualifications of Persons Preparing the EA or Conducting an Independent Evaluation of the EA

Name and Title	Years of Experience	Subject
Texas Department of Transportation – Austin District		
Sonya Hernandez, Environmental Program Manager	17	Project Coordination, QA/QC
Shirley Nichols, Environmental Supervisor	31	Project Coordination, QA/QC
Matthew Cho, P.E., Transportation Engineer, Advanced Project Development Section	6	Project Coordination, QA/QC
Texas Department of Transportation – Environmental Affairs Division		
Lindsey Kimmitt, Environmental Specialist	20	Project Coordination, QA/QC
Doug Booher, Director	28	Document Approver
AECOM		
Ryan Ingram, Mobility35 GEC Environmental Lead	14	Project Coordination, QA/QC
Jacobs		
Angela McMurray, AICP, Mobility35 GEC Environmental Lead	15	Project Coordination, QA/QC
Andrew Cooper, Mobility35 GEC Environmental Lead	28	Project Coordination, QA/QC
Tricia Bruck-Hoyt, AICP, PMP, Mobility35 GEC Environmental Lead	18	Project Coordination, QA/QC
Atkins		
Alexander Amponsah, AICP, Senior Planner III	16	Project Coordination, Document Preparation, Induced Growth, QA/QC
Michelle Empleo, Engineer II	5	Air Quality
John Kemmey, Senior Scientist I	9	Biological Resources
Lauren Kotwal, AICP, Senior Planner I	10	Land Use, Community Impacts, Document Preparation, QA/QC
James Lowe, Division Manager	25	QA/QC
Krista McClanahan, Senior Scientist II	15	Historic Preservation
Anastasia (Stacie) Mogilevski, Scientist I	2	Biological Resources
Janna Rosenthal, AICP, Senior Planner I	8	Noise, Document Preparation, QA/QC
M. Kelley Russell, Senior Scientist II	19	Historic Preservation
Kathryn Saucier, Senior Scientist	7	Hazardous Materials

Katherine Turner-Pearson, RPA, Principal Investigator Archaeologist/Geoarchaeologist,	30	Historic Preservation
Ruben Velasquez, PE, Senior Engineer	32	Air Quality
Nancy Ledbetter & Associates		
Mitzi Ellison, Public Involvement Specialist	15	Public Involvement

12.0 Appendices

Appendix A – Project Location Map

Appendix B – Project Photos

Appendix C – Schematics

Appendix D – Typical Sections

Appendix E – Plan and Program Excerpts

Appendix F – Resource-Specific Maps

Appendix G – Resource Agency Coordination

Appendix H – ICI Questionnaire and Response

Appendix I – Comment and Response Matrix from Public Meeting

Appendix J – Comment Matrix from Stakeholder Meeting

Appendix K – Comment and Response Matrix from Public Hearing