

Appendix C-3a

Final Environmental Impact Statement

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**STATE HIGHWAY 130
FROM I-35 NORTH OF GEORGETOWN
TO I-10 NEAR SEGUIN**

WILLIAMSON, TRAVIS, CALDWELL
AND GUADALUPE COUNTIES, TEXAS

FINAL
ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to the
NATIONAL ENVIRONMENTAL POLICY ACT
42 U.S.C. 4332 (2)(c)
49 U.S.C. 303

By the
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
TEXAS DEPARTMENT OF TRANSPORTATION
TURNPIKE AUTHORITY DIVISION

Date of Approval

Federal Highway Administration

Date of Approval

Texas Department of Transportation
Turnpike Authority Division

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Abstract

The Texas Turnpike Authority (TTA), a division of the Texas Department of Transportation (TxDOT), proposes to construct State Highway 130, an approximately 91 mile controlled access north-south highway through Williamson, Travis, Caldwell and Guadalupe Counties, Texas. The proposed State Highway 130 extends from Interstate Highway 35 at State Highway 195, north of Georgetown in Williamson County, Texas, to Interstate Highway 10, near Seguin in Guadalupe County, Texas. The proposed highway would be located generally parallel to and east of Interstate Highway 35 and the urban areas of Austin, San Marcos, New Braunfels, and San Antonio. The proposed action is intended to relieve congestion on Interstate Highway 35 and other major transportation facilities within the Austin-San Antonio corridor, improve mobility, and increase accessibility to important public facilities. In conjunction with development of the Final Environmental Impact Statement (FEIS) and other on-going project development activities, the TTA is conducting a study to evaluate the feasibility of developing the proposed highway as a toll road and funding it, in whole or in part, through the issuance of revenue bonds. Alternatives to the proposed action include taking no action. Impacts caused by the construction and operation of State Highway 130 will vary depending on which alternative is selected. Generally, impacts could include the following: transportation impacts (construction detours, construction traffic, and mobility improvements); water quality impacts (from construction activities and roadway stormwater runoff); impacts to waters of the United States (takings of and/or modifications to wetlands); impacts to cultural resources; impacts to ecological resources (reduction in wildlife habitat); impacts to farmlands (conversion of farmland soils); and impacts to residents and businesses (potential relocations, displacements, and air and noise impacts from construction equipment and operation of the roadway).

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EXECUTIVE SUMMARY

State Highway (SH) 130 is a proposed controlled access transportation facility from Interstate Highway 35 (I-35) north of Georgetown in Williamson County to Interstate Highway 10 (I-10) near Seguin in Guadalupe County, a distance of approximately 91 miles. The purpose of SH 130 is to relieve congestion on I-35 and other major transportation facilities within the Austin-San Antonio corridor, improve mobility, and increase accessibility to important public facilities. Population growth within the Austin-San Antonio corridor during the last several decades, combined with a more recent intensification of interregional commerce, has led to unacceptable levels of congestion on I-35. The effects of this congestion – increased traffic fatalities and rising costs due to travel delays – suggest the need to take action. Other transportation problems in the corridor stem from a poorly developed roadway network that is constrained in its ability to meet the mobility and access needs of the corridor’s population and major public facilities. Population growth projections for the corridor, private development initiatives, local public policies that encourage growth east of I-35, and the anticipated increase in trade-related trucking activity, indicate that corridor congestion problems will continue to worsen unless some action is taken.

Efforts to improve traffic flow and safety on I-35 are already taking place. Other improvements to the transportation system are planned for the future, including major upgrades to I-35, US Highway (US) 183, and SH 71. Long-range plans also call for substantial new investments in transit infrastructure along with programs and policies to curb travel demand, encourage more transport-efficient land use patterns and generally provide for more alternatives to single-occupant vehicle (SOV) travel. However, long-range traffic forecasts have shown that even with these improvements, programs, and policies, there will remain a high level of congestion on I-35 and other major transportation facilities in the corridor.

Currently, the Texas Turnpike Authority (TTA), a division of the Texas Department of Transportation (TxDOT), is pursuing development of SH 130 as a toll road candidate. For this Environmental Impact Statement (EIS), the toll road option is not considered as a separate alternative; rather, it is a potential design feature common to all build alternatives. Project alternatives are evaluated with respect to their social, economic and environmental impacts and how well they meet the purpose of and need for the project, using traffic projections developed under a toll-free scenario. Potential impacts which are uniquely attributable to SH 130’s construction and operation as a toll road are discussed, where appropriate. Ultimately the roadway will reach projected toll-free traffic levels, as current state laws require the facility to be converted to a toll-free road upon retirement of all project-related debt.

ALTERNATIVES CONSIDERED

A variety of project alternatives, alternative roadway alignments, combinations of alignments, and the No-Action Alternative were considered and analyzed. Some were identified during previous studies, some were suggested by members of the public or by elected officials, and others were developed by the project engineers. Initially, TxDOT chose to develop SH 130 as three separate projects known as Segment A, Segment B and Segment C. Generally, Segment A went from Georgetown south to US 290; Segment B went from US 290 south to just north of Lockhart; and Segment C covered the remainder of the corridor south to Seguin. For each segment, route location and environmental studies were conducted by project planners and design engineers, and several public meetings were held. Subsequently, in May, 1999, TxDOT decided to combine the three segments into a single Environmental Impact Statement (EIS), as represented by this document.

Some of the alternatives previously considered were dismissed because they failed to meet the purpose of and need for the project. Some of the previously considered alternatives were discarded because they did not offer improvements over similar alignments and were therefore considered redundant. Alternatives that were advanced for further analysis were those that enhanced the project's ability to meet the purpose and need, avoided or minimized adverse environmental impacts, or were supported by local governments.

Various regional transportation initiatives—such as improvements to existing roadways, construction of new roadways, implementation of Transportation Systems Management (TSM) and Travel Demand Management (TDM) strategies, extensive public transportation improvements, and high-occupancy vehicle (HOV) facilities on I-35 – have been included in the Austin and San Antonio metropolitan area long range plans. As part of the broader transportation system, these long range plan elements are neither intended nor able to fully satisfy the specific purpose of and need for SH 130. Even with all of these improvements assumed to be in place by the year 2020, TxDOT's Major Investment Study (1997) showed that the addition of SH 130 to the transportation network had the direct effect of lowering future annual congestion costs on I-35 by 68 percent.

The SH 130 build alternatives are identified as Alternatives 1 through 8 (see **Figure**). The proposed facility would generally consist of six main lanes, with a median width capable of accommodating additional transportation modes. SH 130 is proposed to be constructed without frontage roads in most areas. It is TTA's intent to minimize the construction of frontage roads along SH 130. However, frontage roads will be provided when necessary to restore access to adjacent

properties. In addition, frontage roads will be considered when requested by local elected officials, provided they are (1) consistent with official local or regional transportation plans, (2) paid for by others, and (3) do not negatively affect toll revenues if the facility is constructed as a toll road. Actual construction of SH 130 is proposed to be accomplished in phases. The frontage roads, where needed, may be constructed first depending on funding, accessibility, and other factors. The proposed roadway may be initially constructed with fewer lanes than the ultimate facility. Additional capacity would be added as traffic demand and conditions warrant. The total estimated cost of SH 130 (including construction and right-of-way acquisition) ranges from approximately \$1.436 billion to \$1.513 billion, depending on the alternative selected. Construction of the Preferred Alternative as a toll road would cost approximately \$1.53 billion. All build alternatives feature the following design elements:

- The design for SH 130 *without* frontage roads calls for a usual right-of-way of 349 feet, with either two or three 12-foot travel lanes in each direction. There are ten-foot inside and outside shoulders, and a 103-foot median. Potential future bicycle trails may be provided (by others) within and adjacent to the right-of-way. A variable width scenic easement may be provided by others (i.e., local governments) outside and immediately adjacent to the right-of-way on one or both sides. The interim toll road design may be of lesser capacity than the ultimate toll-free facility.
- The design *with* frontage roads calls for a usual right-of-way of 529 feet, with three 12-foot mainlanes in each direction and three 12-foot frontage road lanes (one-way) in each direction. The mainlanes will have ten-foot inside and outside shoulders, while the frontage roads will have a four-foot inside shoulder and an eight-foot outside shoulder. Bicycle traffic may be accommodated on the eight-foot outside shoulder of the frontage roads. In urbanized areas, sidewalks may also be provided. There will be a 103-foot median. Like the design without frontage roads, potential future bicycle trails may be provided (by others) within and adjacent to the right-of-way. Scenic easements may be provided outside the frontage roads at the option of local governments or others. The interim toll road design may be of lesser capacity than the ultimate toll-free facility.
- The alignment and proposed median width for SH 130 have been designed to accommodate future transportation needs. These can include general multi-purpose lanes, HOV facilities, light rail transit, or some combination of these modes. The median can also accommodate freight rail, but this would preclude the other options. Although no plans currently exist for the inclusion of other modes of transport, the proposed right-

of-way will allow for their future development if so desired. Additional environmental documentation would be prepared as part of the development process for any proposed future transportation facilities in the SH 130 median.

ENVIRONMENTAL IMPACTS

Land Use Impacts

All SH 130 build alternatives would change land use within the right-of-way of the proposed action. The No-Action Alternative would be incompatible with the plans and policies of most local governments within the SH 130 corridor. Local governments generally support the construction of SH 130, and many of the cities and counties within the SH 130 corridor have formally stated their support for specific build alternatives.

Under the No-Action Alternative, current land use trends within the corridor would probably continue. As the population of the four-county region grows by as much as 150 percent over the next 30 years, increased residential, commercial, and other development will generate additional automobile trips within the SH 130 corridor. Without SH 130, the transportation system will be less able to accommodate additional trips, resulting in increased traffic congestion, travel delays, and the need for additional roadways, widening of existing highways and arterial roadways, and other congestion-reduction improvements. This is especially true within the northern portion of the corridor where urbanization is already occurring.

SH 130 directly results in the conversion of approximately 5,300 acres to 5,700 acres of land from current uses to SH 130 right-of-way. Direct land use impacts would be related to the relocation of residential and business structures and the loss of agricultural and developable land within the proposed right-of-way. Construction of SH 130 may indirectly affect land use within the corridor, resulting in long-term land use changes to the landscape. Like most new location highways, construction of SH 130 could enhance land development opportunities, helping to create attractive opportunities for the location of land uses that benefit from drive-by exposure or access to major transportation routes. However, SH 130 will be by no means the only ingredient for growth within the corridor, as land development depends on the presence of several other factors. There must be market demand for new development, favorable local and regional economic conditions, adequate utilities, and supportive local land development regulations and policies. Many of these

ingredients are present within the SH 130 corridor, especially in the northern portion. The substantial development that has occurred for many years in the suburban areas east of I-35 in Williamson and Travis counties would indicate the presence of favorable market and economic conditions.

Farmland Impacts

The build alternatives will result in a slight reduction in the amount of important farmland soils within the four-county area. The total amount of important farmland converted by the build alternatives – approximately 3,781 acres to 3,984 acres depending on which alternative is selected – represents about 0.35 percent to 0.37 percent of the total important farmland in Williamson, Travis, Caldwell, and Guadalupe Counties.

Social Impacts

Impacts to existing and proposed neighborhoods are anticipated as a result of the proposed action. These impacts will be both beneficial and adverse. Adverse impacts may include residential relocations, business and community facility displacements, and a variety of proximity effects (such as noise impacts, visual intrusion, or increased traffic on local arterials and residential collector streets.) No public schools or cemeteries will be displaced by the build alternatives, although some of the build alternatives would displace a church located on Yager Lane.

All build alternatives are consistent with Executive Order 12898, Environmental Justice, because they do not create any disproportionately high and adverse effects on minority and/or low income populations that cannot be mitigated or otherwise compensated with offsetting benefits. The proposed action is similarly consistent with Title VI of the Civil Rights Act of 1964 in that there is no discriminatory intent or effect.

Two unimproved and unused parks in the vicinity of Lake Walter E. Long, the City of Austin's Colony Park along Loyola Lane, and Travis County's unnamed park along Blue Bluff Road, will experience a direct partial taking by some of the build alternatives. Coordination under Section 4(f) of the Department of Transportation Act for these two properties was initiated with the City of Austin and Travis County as part of the Draft EIS. The Preferred Alternative does not require the taking of any publicly owned park land, recreational area, or wildlife and waterfowl refuge.

All SH 130 build alternatives will result in less traffic on I-35 than the No-Action Alternative. According to TTA's traffic forecast (August, 2000), traffic volume per mile on I-35 from Georgetown to San Antonio will average 12 percent less with the Preferred Alternative. The greatest benefit for I-35 will be experienced in the areas from Georgetown to Austin, and from Austin to San Marcos. The least amount of benefit for I-35 will be in the area through Austin.

SH 130 would also offer improvements to travel patterns and accessibility within the corridor. As an alternate route to I-35, especially in the more congested areas, SH 130 may present an attractive option for NAFTA-related commercial truck traffic and other regional travel (trips that begin and end outside the Austin–San Antonio corridor). Access to Austin-Bergstrom International Airport would be improved from the north and south by all of the SH 130 alternatives. The Travis County Exposition and Heritage Center and the Round Rock Express baseball stadium would be particularly well served by SH 130, depending on which alternative is selected. Access to the corridor's major employment sites would also be improved with the construction of SH 130. Construction of SH 130 is also consistent with the City of San Antonio's plan to redevelop Kelly Air Force Base. Low-income residents within the SH 130 corridor who rely on public transportation or who may be eligible for ride subsidies or "welfare-to-work" programs would also benefit from improved mobility and accessibility.

Year 2025 forecasts of SH 130 toll-free traffic range from a high of 115,000 vehicles per mile within the area just north of US 290, to a low of 29,000 vehicles per mile in the area just south of I-35 at SH 195. The total average volume per mile under the 2025 toll-free traffic forecast for SH 130 ranges from 60,000 to 75,000 depending on the alternative.

Relocations and Displacements

Depending on which alternative is selected, SH 130 will result in the relocation of between 155 and 175 residences, and the displacement of 16 to 29 businesses. Other displacements include two water storage towers and one church. There are no school or cemetery displacements. TxDOT's Relocation Assistance Program will be available to all residents, businesses, and non profit organizations displaced as a result of the construction of the proposed action.

Economic Effects

The construction of SH 130 would have direct, indirect, and induced effects on local, regional and state employment, output, and income. The total estimated statewide economic effect

from the construction of SH 130 would be approximately \$4.35 billion – \$4.51 billion. The exposure provided by the SH 130 build alternatives will potentially increase the commercial appeal and in turn the property value of land located primarily at on/off access points and along frontage roads. Residential property values near the proposed right-of-way may decrease due to the perceived negative effects associated with highways (noise, pollution, dust, and decreased privacy). There also exists the possibility of an increase in residential property values due to the advantages of increased accessibility. Within the more rural areas, SH 130 could result in decreases to the value of agricultural property where fields and pastures may be transected.

Noise Impacts

The various build alternatives would result in noise impacts to between 174 and 350 receivers, which include residences or other sensitive land uses. The noise and mitigation analysis showed that along the Preferred Alternative noise barriers would be both feasible and reasonable for the Hills of Forest Creek subdivision adjacent to FM 685. A summary of the noise barrier analysis is included in this FEIS for the Preferred Alternative using both toll and toll-free traffic projections.

Air Quality Effects

No substantial effects are expected to result from the proposed action. The proposed roadway is intended to reduce traffic congestion on major roadways and enable more efficient traffic movement within the study corridor. In general, the air quality impacts resulting from the proposed action are expected to be negligible.

Water Quality Impacts

All build alternatives will require the crossing of several rivers, creeks, and streams in the SH 130 corridor, and erosion and sedimentation during construction could potentially have short-term, adverse effects on receiving waters. During construction, best management practices will be employed to minimize the adverse effects of erosion and sedimentation on surface water resources. Once the project is completed, rainfall runoff rates will increase slightly due to the increase in impervious cover. This runoff from the completed facility may contain pollutants which could have long-term effects on the quality of surface water. To minimize the possibility of contamination of

surface water due to pollutant runoff, water pollution control measures will be incorporated into the design of the proposed action.

All build alternatives cross Berry Creek and the San Gabriel River within the Edwards Aquifer Recharge Zone. Temporary and permanent water pollution control measures to be taken during and after construction will be in compliance with guidelines set forth by the Texas Natural Resource Conservation Commission (TNRCC) for actions located within the recharge zone. In accordance with the Edwards Aquifer Rules, no construction activities will occur within the Edwards Aquifer Recharge Zone until a Water Pollution Abatement Plan (WPAP) has been completed and approved by TNRCC under 30 TAC § 213.5, Required Edwards Aquifer Protection Plans, Notification, and Exemptions. Mitigation measures to control contaminated runoff from entering surface streams and eventually ground water reservoirs will be included in the design and construction of SH 130.

Numerous water supply wells were identified through state well inventory reports as being in an area potentially affected by the proposed action. These include wells used for private drinking water, industrial and irrigation uses, and test holes for oil or gas exploration. Wells known, or ultimately found, to be within the right-of-way of the selected alternative will be capped and covered according to state and federal standards to avoid contamination of ground water supplies. Compensation to well owners would be addressed during right-of-way acquisition.

Wetland Impacts

The SH 130 build alternatives will cross 65 to 77 drainages and impact approximately 50 to 64 acres of wetlands. The proposed highway will cross creeks and streams using bridges or concrete box culverts. Although the use of bridges will likely minimize impacts to wetlands and aquatic areas, bridge construction often requires placement of fill material such as dirt, concrete, bridge pillars, etc., within jurisdictional wetland boundaries. Construction of the roadway and bridges would itself alter the wetlands by removing vegetation, compacting soils, and changing the hydrology of the immediate area, even if only temporarily. Impacts to wetlands will be avoided or minimized in compliance with Section 404 of the Clean Water Act.

None of the wetlands identified along the proposed alternatives appear to be unique for the area, and they likely perform functions similar to those of other wetland areas located nearby. Because of their small extent and location amid agricultural or range land, the majority of wetlands within the area would likely be categorized as low to moderate relative quality. A full wetlands

delineation will be performed for the Preferred Alternative once access to the right-of-way has been obtained.

Vegetation and Wildlife Impacts

The SH 130 build alternatives will directly affect between approximately 4,500 acres and 4,800 acres of vegetative cover. Grassland and cropland represent the most common vegetation types affected. Certain types of vegetation are considered sensitive due to their relative rarity and/or unique qualities. Among these are native prairie remnants, a type of grassland community that was once widespread throughout the central United States, but which is now increasingly rare due to conversion to agricultural use and suburban development. Although the rarity of native prairies is widely recognized, no official regulatory protection is currently afforded to this natural community type. The “MoKan Prairie,” a privately-owned parcel located in Round Rock in Williamson County, and the Indiangrass Preserve, near Lake Walter E. Long in Travis County, are two such prairie remnants found within the study corridor. Some of the SH 130 build alternatives may require taking a portion of the “MoKan Prairie,” which is a relatively small (about 12-18 acres according to a 1990 City of Austin study) isolated prairie remnant located along and adjacent to the abandoned M-K-T right of way. The Preferred Alternative avoids the “MoKan Prairie”. None of the build alternatives will cause direct impacts to the Indiangrass Preserve.

Construction of SH 130 would impact approximately 700 acres to 1,200 acres of general wildlife habitat, of which between approximately 90 acres to 125 acres can be described as high quality wildlife habitat.

Flood Plain Impacts

The hydraulic design practices for the construction of the proposed action will be in accordance with current TxDOT and Federal Highway Administration (FHWA) design policies and standards. Based on a preliminary hydraulic analysis, encroachments on the flood plains would not increase the base flood elevation to a level that would violate applicable Federal Emergency Management Agency (FEMA) flood plain regulations. The proposed facility would permit the conveyance of the 100-year flood over the roadway without causing significant damage to the roadway, stream, or other property and would not be designed to support incompatible flood plain development.

Threatened and Endangered Species

No known occurrences of federally listed Endangered or Threatened species have been documented along the SH 130 study corridor, and no impacts to any federally listed species are anticipated. According to the U.S. Fish and Wildlife Service, the project area is not located within the designated critical habitat of any federally listed species, nor does the project area provide suitable habitat for federally listed or proposed species.

Historic Property Effects

The proposed undertaking has the potential to affect historic properties that are eligible for nomination to the National Register of Historic Places (NRHP) and for designation as State Archeological Landmarks. TxDOT has initiated Section 106 coordination of the National Historic Preservation Act with the State Historic Preservation Officer (SHPO) to appropriately address potential impacts to historic properties. The identification (through pedestrian and subsurface investigation) of historic properties that are archeological in nature, the evaluation, assessment of effects, and mitigation of affected historic properties shall be completed under the terms of the Programmatic Agreement (PA) between the FHWA, Texas Historical Commission (THC), Advisory Council on Historic Preservation (ACHP) and TxDOT and the Memorandum of Understanding (MOU) between TxDOT and THC. This survey will be conducted for the Preferred Alternative following right-of-way acquisition and consultation with the SHPO. In addition, coordination has taken place with the SHPO regarding the NRHP eligibility of several potentially historic structures located within and adjacent to the build alternatives. This coordination determined that some of the SH 130 build alternatives would have direct, adverse effects on properties that are eligible for the NRHP. The SHPO has determined that the Preferred Alternative will have indirect, adverse effects on NRHP eligible properties. Mitigation for adverse effects will be conducted pursuant to the “Protocol for Historic Property Identification, Evaluation, and Treatment for the SH 130 Project,” in accordance with the PA and MOU.

Effects on Hazardous Materials Sites

The SH 130 build alternatives would affect a variety of hazardous materials sites, including underground storage tanks, leaking underground storage tanks, and above ground storage tanks. The actual construction of the proposed action poses very little risk of hazardous waste contamination of the environment. Hazardous waste impacts associated with the proposed action will more likely be associated with currently operating sites and facilities or historical sites and

facilities that have already affected the existing environment or have the potential to affect the existing environment. Facilities such as these that are located within the selected right-of-way will be acquired by TTA and secured in accordance with TxDOT policies and applicable state and federal laws to ensure that no contaminants are released to the environment. Prior to right-of-way acquisition it is recommended that a Phase I Environmental Site Assessment be conducted for the proposed right-of-way of the Preferred Alternative, once selected, or at a minimum for each site and/or facility that has known or potential occurrences of hazardous materials. Based on the results of the Phase I Environmental Site Assessment, sampling, analysis, and, possibly, remedial activities may be warranted at certain sites or facilities.

Impacts to Visual and Aesthetic Quality

The proposed action will result in the introduction of a major highway into suburban and rural areas. It will alter the local landscape and have some effect on the aesthetic quality of the surrounding area. However, the majority of the roadway would be constructed at grades similar to other area travelways and should have minimal impact on area aesthetics. The roadway itself would be aesthetically designed.

Energy Requirements

A detailed energy analysis has not been conducted for this study. Generally, the overall amount of energy resources saved by the proposed action over its design life, due to improved traffic flow on other area roadways, is expected to at least compensate for the energy resources required for its construction and maintenance. In addition, no impacts to mineral or energy resources are expected as a result of the proposed action.

Construction Phase Impacts

Construction phase effects will be of relatively short duration. These effects include the generation of dust, erosion and sedimentation, soil compaction, increased noise levels, and temporary interference with normal traffic patterns. To mitigate temporary water resource effects, a Stormwater Pollution Prevention Plan will be prepared and implemented during construction. In addition, a Water Pollution Abatement Plan will be prepared as required by the Edwards Aquifer Rules.

Secondary and Indirect Impacts

Construction of the proposed highway may create some secondary social, economic and environmental impacts that result indirectly from the existence and operation of the new highway. They are not a direct result of construction or operation, but may be expected to occur due to reasonably foreseeable related activities. These impacts are already occurring as a result of development activity within the corridor, especially in the northern portion. Development impacts – both beneficial and adverse – will continue to be felt within the corridor regardless of whether or when SH 130 is built. Generally, as access to the study corridor becomes more convenient, more areas will become practical and economically feasible for development and land use changes to occur.

Cumulative Impacts

There are a number of actions that have been (or are likely to be) undertaken by federal and non-federal agencies and persons that, when combined with proposed SH 130, will have cumulative impacts on the environment. For example, the federal government's North American Free Trade Agreement (NAFTA) trade policies, and the commercial and trucking interests that are acting in response to those policies, have substantially contributed to increased congestion on I-35 in recent years and will generally benefit from the I-35 congestion relief provided by SH 130. This will result in positive economic effects as congestion levels on I-35, an international trade corridor, are reduced. SH 130 will combine with other substantial public and private investments, such as the development of Austin-Bergstrom International Airport and the potential redevelopment of Kelly Air Force Base, to cumulatively affect the Austin-San Antonio corridor economy.

Another type of cumulative effect involves improvements to the regional transportation system. For example, TTA and FHWA are now constructing SH 45, an approximately 15 mile controlled access east-west highway through the rapidly urbanizing area of northern Travis/southern Williamson counties in the north Austin area. State Highway 45 – a candidate toll road – extends from US 183 in Williamson County to FM 685 east of I-35 in Travis County. Near its eastern terminus, SH 45 would interchange with all SH 130 build alternatives. Combined, the two potential toll roads would connect to other planned toll facilities in northern Travis County and southern Williamson County, such as US 183-A and an extension of Loop 1, both west of I-35. Cumulative effects of this network of new toll facilities would include improvements to local and regional travel conditions as well as increased mobility and access. The construction of these four proposed transportation facilities – SH 130, SH 45, US 183-A, and Loop 1 – will also result in the cumulative

direct loss of important farmland (an estimated 4,532 acres), and a cumulative number of residential relocations (a total of 186 residences). Adequate farmland and sufficient housing is available within Williamson, Travis, Caldwell, and Guadalupe Counties. Other potential transportation improvements within the region – roadways, public transportation, TSM/TDM measures, commuter rail, and light rail – will cumulatively improve local and regional travel conditions within the Austin-San Antonio corridor, which in turn will help to sustain growth in the region.

Planned and future development could impact several resource categories within the SH 130 corridor over the life of the facility. Portions of the SH 130 corridor are expected to see continued urbanization as the communities of Georgetown, Round Rock, Pflugerville, Austin, Lockhart and Seguin grow, guided by their respective comprehensive plans. The cumulative impacts of continuing development within the corridor will be both beneficial and adverse. Beneficial effects include new economic opportunities, housing alternatives, employment, services, and recreational resources. As development occurs, the need for additional infrastructure and services (transportation, utilities, fire, police, emergency medical services, etc.) will increase. Potential adverse cumulative effects include loss of habitat, water quality impacts, and the conversion of agricultural land associated with the continued urbanization within the SH 130 corridor.

Toll Road Considerations

As a candidate toll facility, SH 130 may require approximately 220 acres of additional right-of-way to accommodate toll plazas and other amenities unique to toll facilities. The exact amount of additional right-of-way is subject to design decisions to be made later in the project development process. Additional amounts of developed, undeveloped or agricultural land uses may be converted to SH 130 right-of-way. No residential, commercial, or community facilities are expected to be displaced as a result of additional right-of-way at the toll plaza locations. This FEIS identifies the tentative locations of proposed toll plazas.

Consideration is also given to whether there is a disproportionate impact on minority and low income persons resulting from operation of SH 130 as a toll road. Generally speaking, because all motorists pay the same toll regardless of their income, the toll for using SH 130 would constitute a greater burden on lower income motorists. A theoretical price of 8 cents per mile produces a full-length toll of \$7.28 for the 91 mile SH 130 project. The actual toll to be charged on opening day and beyond has not yet been established and is subject to on-going consideration by TTA. The network of existing toll-free roads within the corridor is available to motorists who wish to avoid

paying tolls. The noise and air quality effects of future toll road and toll-free traffic are documented in this Final EIS.

PUBLIC INVOLVEMENT AND IDENTIFICATION OF A PREFERRED ALTERNATIVE

Throughout the SH 130 planning process, public involvement has been an integral element of the environmental assessment of alternatives. A total of 17 public meetings have been held at various locations along the proposed corridor since 1994. A Public Hearing was held in Round Rock, Austin and Seguin on February 10, 2000. Along with recommendations of various federal, state, and local agencies, the concerns of the public have played a significant role in shaping the priorities of the environmental review, as well as the recommendation of a Preferred Alternative.

Subsequent to the Draft EIS and Public Hearing for SH 130, TTA prepared new traffic forecasts based on CAMPO's updated 2025 Transportation Plan. In response to issues raised through the public involvement process, TTA also adjusted the alignments of each of the eight build alternatives. In addition, land use changes within the rapidly developing SH 130 corridor, including recently approved development projects, were mapped so that the Final EIS would be able to document the effects of SH 130 on an up-to-date landscape. Section 106 coordination with the State Historic Preservation Officer (SHPO) also progressed, and more information became available about the status of historic properties throughout the corridor and the potential effect that SH 130 would have on them. All of this information helped guide the selection of a Preferred Alternative for the Final EIS.

The Final EIS identifies Alternative 2 as the Preferred Alternative. Alternative 2 is characterized as the easternmost route in the Round Rock area, the "East Lake" route in the Lake Walter E. Long area, and east in the southern portion of the project corridor. The Draft EIS had identified Alternative 3 as preferred, which features alignments closer to Round Rock and west of the lake. Following are the primary reasons for identifying Alternative 2 as the Preferred Alternative in the Final EIS:

- New travel demand forecasts developed by TTA and based on updated long range transportation plans by the Capital Area Metropolitan Planning Organization (CAMPO) and the San Antonio MPO show that both Alternative 2 and Alternative 3 meet the project's purpose and need in terms of relieving I-35 traffic congestion.

- Alternative 3 (preferred in the Draft EIS) takes land from two public parks, which under federal regulations requires a finding that there is no reasonable alternative. The Draft EIS stated that the park impacts associated with Alternative 3 were justified because the eastern alternative (Alternative 2) carried substantially less traffic and was therefore considered to be less effective in meeting the project's purpose and need. The new traffic data, which show only a minor difference in 2025 I-35 traffic levels between these two SH 130 alternatives, make it easier to conclude that there is a reasonable alternative to taking public park land.
- Alternative 2 has overwhelming public citizen support. It is supported by the City of Austin, City of Round Rock, Travis County, CAMPO Policy Advisory Committee, and other elected officials.
- The social, economic and environmental impacts of the build alternatives remain roughly equivalent. The recent alignment adjustments have improved all alternatives with respect to neighborhood impacts. With the exception of Section 4(f) issues, there is still little variation between the build alternatives with respect to adverse effects.
- Alternative 2, the Preferred Alternative, avoids direct adverse effects on historic properties that are eligible for the National Register of Historic Places. Alternative 3 would have directly affected an NRHP eligible property.

REMAINING ISSUES IN NEED OF RESOLUTION

The majority of issues which need to be resolved fall into the categories of permitting and possible mitigation. These issues are addressed in the body of the impacts sections of the document (see **Section 4.0 Environmental Consequences**, and **Section 5.0 Mitigation Recommendations**). The following list briefly itemizes and addresses remaining issues which need further resolution before the proposed action may be constructed.

- Right-of-Way Acquisition and Relocations/Displacements. The Preferred Alternative would require 168 residential relocations and displacement of 22 businesses and no community facilities. Relocation coordination will take place during the right-of-way acquisition process.

- Surface Water Permitting and Ground Water Protection. The proposed action will require compliance with the Environmental Protection Agency National Pollutant Discharge Elimination System General Permit for Industrial Activity, and will therefore require the preparation and implementation of a Storm Water Pollution Prevention Plan (SW3P). Impacts to ground water quality will be minimized by preparation and implementation of a Water Pollution Abatement Plan (WPAP) for portions of the proposed action located over the Edwards Aquifer Recharge Zone.
- Wetland Permitting. The proposed action will require permitting and coordination with the U.S. Army Corps of Engineers (USCE) under Section 404 of the Clean Water Act. The type of permit(s) required, either Nationwide #14 or Individual, will be determined once a full, detailed wetlands delineation has been completed. A Coast Guard permit may also be required for the proposed bridge crossing of the Colorado River.
- Historic Properties and Archeology. The Preferred Alternative has the potential to affect unidentified historic properties that are archeological in nature. Identification (through pedestrian and subsurface investigation), evaluation, assessment of project effects, and mitigation for adverse effects shall be coordinated with the THC and completed under the terms of the Programmatic Agreement between the FHWA, THC, ACHP, and TxDOT. In addition, in the event that previously unidentified buried archeological materials are discovered during subsequent construction, work in the area of discovery shall cease and accidental discovery procedures shall be implemented in accordance with the provisions of the Programmatic Agreement (see **Appendix F**).
- Toll Feasibility Study. A toll feasibility study is currently being prepared which evaluates SH 130 as a toll road candidate. Information pertaining specifically to toll roads (such as anticipated toll road traffic volumes) has been included in this Final EIS.
- Design Charette. In order to enhance the operational efficiency and visual appeal of the proposed facility, the Texas Turnpike Authority intends to sponsor a SH 130 design charette. The charette, which is not an element of the traditional project development process, will serve as a forum for involving key members of the community and the public in the decision making process with regard to such design details as roadway aesthetics, landscaping, scenic easements and bicycle and pedestrian-related issues. The charette will be held during the design phase of project development, after the environmental process is complete and the route has been established. The THC will be

invited to the charette as part of mitigation measures (see **Appendix F**). The goal of the charette will be to mold SH 130, through active public participation, into a functional, aesthetically pleasing roadway that will enhance the regional roadway network as well as the communities it serves.

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1.0 PURPOSE AND NEED

The purpose of proposed State Highway 130 (SH 130) is to relieve congestion on Interstate Highway 35 (I-35) and other major transportation facilities within the Austin–San Antonio corridor, improve mobility, and increase accessibility to important public facilities. In 1991, the U.S. Congress adopted the Intermodal Surface Transportation Efficiency Act (ISTEA) which included funds for developing an alternative route to relieve I-35 traffic congestion. The importance of this purpose is underscored by the rising number of fatalities resulting from traffic accidents and the mounting losses in economic productivity resulting from travel delays. The problem is particularly acute because of the mix of truck traffic and commuter traffic on I-35.

Since the mid-1980s, transportation officials, planners, and members of the public have recognized the need for transportation improvements along I-35 in Central Texas and within the corridor east of I-35, from Georgetown to San Antonio (see **Section 1.2.1** for a history of the SH 130 project). The initiatives of the Federal Highway Administration (FHWA), Texas Department of Transportation (TxDOT), Texas Turnpike Authority (TTA), local governments and individual citizens have culminated in this Final Environmental Impact Statement (FEIS).

State Highway 130 is a proposed controlled access, multimodal transportation facility which is planned to extend from I-35 north of Georgetown to I-10 near Seguin, a distance of approximately 91 miles. The proposed facility would consist of six main lanes, with a median width capable of accommodating additional transportation modes (see **Section 2.0 Alternatives**). SH 130 is proposed to be constructed without frontage roads in most areas. Frontage roads would be added in other areas to restore property access where it exists now and may be provided in a limited number of locations requested by local officials. Actual construction of SH 130 is proposed to be accomplished in phases. The frontage roads, where needed, may be constructed first depending on funding, accessibility, and other factors. The proposed roadway may be initially constructed with fewer lanes than the ultimate facility, particularly if constructed as a toll road. Additional capacity would be added as traffic demand and conditions warrant. Funding for the proposed project is anticipated to be provided by state and federal sources, and possibly through the imposition of tolls.

This section of the FEIS is intended to describe the purpose and need for transportation improvements and summarize the project development process to accomplish those improvements. The first subsection describes the corridor's characteristics and current congestion problems. The second subsection traces the history of SH 130 and describes the planning process in the context of long range local and regional transportation goals.

1.1 NEED FOR TRANSPORTATION IMPROVEMENTS

Since its construction, beginning in the 1950s, I-35 has served as a vital link in the transport infrastructure foundation for the nation's economic growth and development. Interstate highways serve America's major centers of activity and regional travel, interconnecting and augmenting other major arterial highways, providing important system linkage and continuity and serving important mobility functions. Within Central Texas, I-35 accommodates traffic in the Austin–San Antonio corridor, serving local community residents traveling to and from their homes, business and retail centers, and places of employment. Interstate Highway 35 is also an important interregional travel corridor, extending 1,500 miles from Laredo, Texas, to Duluth, Minnesota. An important link in the national transportation infrastructure and an increasingly important route for international trade activity, I-35 is the only interstate highway that connects Mexico, the United States and Canada through the heartland of America.

In recent years, I-35 has grown congested through Central Texas, which is illustrated by poor Levels of Service¹, long travel times at peak periods and high accident rates. The underlying cause of this transportation problem is that local, regional and interregional travel demands have exceeded the capacity of the existing transportation system to efficiently move people and goods through the corridor. The existing roadway network has certain system limitations and does not meet either current or projected transportation demands of the area. The result is congestion and safety concerns which have a negative impact on Central Texas communities, and a negative impact on I-35's ability to function efficiently as a national and international trade corridor.

The following subsections describe the elements of the problem in detail. First the transportation demand within the study corridor is characterized, with emphasis on I-35 and the area parallel to and east of I-35, from Georgetown to Seguin (see **Figure 1.1-1**). Then, the area's transportation system is described with respect to the availability, capacity, and enhancement potential of alternative transportation modes.

1.1.1 Transportation Demand

Transportation demand is a function of travel requirements associated with land use, demographics, and economic trends that include: 1) local activity (employment, shopping, schools,

¹Level of Service (LOS) is a measure of the ability of roadways to move traffic efficiently. It is defined further in **Section 1.1.2.4**.

recreation, and other local needs); and 2) regional travel (trips that begin and end outside the Austin–San Antonio corridor). Projections of future growth and development characteristics are also important indicators of future travel demand.

1.1.1.1 Local Activity

The Austin–San Antonio corridor, generally comprising Williamson, Travis, Bastrop, Caldwell, Hays, Comal, Guadalupe and Bexar counties, has experienced high population growth since 1960 (see **Table 1.1-1**). Between 1960 and 1998, the area’s population grew by more than 150 percent. Projections of future population for the corridor by the Texas State Data Center (SDC), show a continuation of this rapid growth. The SDC projects that the corridor’s population will more than double over the next 30 years, reaching 5.4 million persons by the year 2030 (see **Table 1.1-2**).

Table 1.1-1
Population History for the Austin-San Antonio Corridor, 1960-1998

County	1960	1970	1980	1990	1998^a
Williamson	35,044	37,305	76,521	139,551	223,910
Travis	212,136	295,516	419,335	576,407	710,326
Bastrop	16,925	17,297	24,726	38,263	50,390
Hays	19,934	27,642	40,594	65,614	88,536
Caldwell	17,222	21,178	23,637	26,392	32,447
Comal	19,844	24,165	36,446	51,832	73,391
Guadalupe	29,017	33,554	46,708	64,873	80,472
Bexar	687,151	830,460	988,800	1,185,394	1,353,052
Corridor Total	1,037,273	1,287,117	1,656,767	2,148,326	2,612,524

Note: ^aU.S. Census Bureau estimate.

Sources: U.S. Census Bureau; and Texas Almanac and State Industrial Guide, 1993.

Table 1.1-2
Population Projections for the Austin–San Antonio Corridor, 2000 – 2030

Projections are Rounded to the Nearest Thousand					
County	1998	2000	2010	2020	2030
Williamson	223,910	240,000	401,000	657,000	1,026,000
Travis	710,326	747,000	925,000	1,146,000	1,402,000
Bastrop	50,390	53,000	73,000	98,000	125,000
Hays	88,536	89,000	119,000	154,000	192,000
Caldwell	32,447	33,000	39,000	46,000	52,000
Comal	73,391	82,000	127,000	195,000	288,000
Guadalupe	80,472	81,000	99,000	119,000	140,000
Bexar	1,353,052	1,414,000	1,553,000	1,917,000	2,190,000
Corridor Total	2,612,524	2,739,000	3,336,000	4,332,000	5,415,000

Sources: U.S. Census Bureau; and “1990-96 Migration Scenario,” Texas Population Estimates and Projections Programs, Texas State Data Center, Texas A&M University System, February 1998.

Williamson County anchors the north end of the corridor. One of the fastest growing counties in the nation, Williamson County’s population nearly tripled between 1980 and 1998. The county’s principal cities, Round Rock and Georgetown, are rapidly growing urban centers with direct access to I-35. Each has experienced population growth in excess of nine percent *per year* between 1990 and 1998². Major new employment and activity centers are emerging east of I-35 in Round Rock, such as Dell Computer Corporation’s headquarters, expected to reach 12,000 employees in 2000, and the Round Rock Express Double-A baseball stadium (Dell Diamond), which opened in April 2000. Several residential developments have contributed to a growing number of new communities east of I-35 near Round Rock, including Round Rock Ranch, Rolling Ridge, and Forest Creek.

The City of Austin is the capital of Texas, home to the University of Texas at Austin, and the county seat for Travis County. The city’s traditional economic base, comprised primarily of government and academia, has expanded during the last decade to feature an increasing number of high technology firms in the semiconductor, computer, and communications equipment industry. Several major manufacturing facilities located east of I-35, including Samsung Electronics, Dell Computer, Applied Materials, and Motorola, contribute to heavy peak-hour demands on I-35, US 183 and other area roadways. The Austin-Bergstrom International Airport, opened in May 1999,

²Capital Area Planning Council (based on information from the Texas State Data Center), September 1998, “Williamson County Census Data.”

and located on SH 71 at US 183, accommodates over 6.6 million passengers per year with 260 commercial flights per day. Access to the new airport has added traffic to I-35, US 183 and SH 71. The study corridor is becoming increasingly residential, especially northeast of the US 290 and I-35 interchange, with large mixed-use (residential and retail/commercial) developments like the planned Pioneer Crossing and existing Harris Branch, and in the Del Valle (southeast Austin) area near the new airport. Development can be expected to continue in eastern Travis County as a result of the City's Smart Growth initiatives. Within the Austin metropolitan area, the study corridor is included in the City of Austin's "Desired Development Zone," which includes the city limits and Extraterritorial Jurisdiction (ETJ) east of the Edwards Aquifer Recharge Zone. More information about development patterns and plans is contained in **Section 3.0 Affected Environment**.

Guadalupe County anchors the south end of SH 130. The County's principal city is Seguin which is also the county seat. Guadalupe County's population increased 72 percent between 1980 and 1998. The major employers include Motorola, Tyson Foods, and Structural Rentals. Randolph Air Force Base is also located in Seguin. Seguin will have direct access to SH 130 which will terminate at I-10.

The City of Lockhart in Caldwell County will be an activity center along SH 130. The City of Lockhart is 28 miles south of Austin. John W. Clary, director of the City of Lockhart Economic Development Council, has estimated that up to 50 percent of the work force in Lockhart travels to Austin to work. SH 130 would provide an additional north-south corridor to Austin.

Bexar County anchors the south end of the Austin-San Antonio corridor. The county's principal city is San Antonio, the ninth largest city in the nation. Bexar County's population has increased 36 percent between 1980 and 1998. San Antonio attracts over 7 million tourists a year who come to see the Alamo, Sea World of Texas, Fiesta Texas, the San Antonio River Walk and the San Antonio Spurs. Major employers include USAA, HEB, and SBC Communications.

Several other activity centers along the Austin-San Antonio corridor contribute to traffic growth on I-35. San Marcos is an activity center along I-35. Southwest Texas State University is located in San Marcos which employs 2,200 people and has a student body of 22,000. New Braunfels is also an activity center along I-35. New Braunfels attracts 2 million tourists a year. Tourists visit Canyon Lake, Guadalupe and Comal Rivers, and Schlitterbahn Water Park. The major employers include Schlitterbahn, Wal-Mart Distribution, Plains Cotton Coop Association, and Hunter Industries. Commuter traffic generated by these cities adds to the mix of interregional truck traffic. All together, the corridor encompasses two major metropolitan areas, numerous small cities

and rural communities, 17 universities and colleges, large corporations, major research organizations, and a variety of tourist and cultural attractions.

1.1.1.2 Regional and Interregional Travel

In addition to the local activity described above, international trade and economic development along the U.S.–Mexico border and throughout Texas and the Central United States has led to an increase in traffic, including large trucks, which depends on I-35. I-35 extends from Laredo, the busiest U.S. border crossing into Mexico, to Duluth, Minnesota. The segment of I-35 from Laredo to Dallas is a dominant U.S.–Mexico truck transportation corridor. Between San Antonio and Dallas, trade accounts for 500,000 to 750,000 trucks per year.³ The large amount of truck traffic is in part related to the effects of the North American Free Trade Agreement (NAFTA), which took effect on January 1, 1994. Loaded truck crossings at Laredo on the Texas/Mexico border have gone from fewer than 20,000 per month prior to NAFTA to nearly 100,000 per month in 1997, with 75 percent of that trade traffic estimated to pass through the Austin–San Antonio corridor on I-35.⁴

1.1.2 Current and Projected Transportation Deficiencies

This subsection addresses the ability of the various elements of the study corridor’s transportation system – including alternative transportation modes – to respond to the travel demands described above. The following paragraphs describe the mobility and access characteristics of the existing transportation network, and then, the existing and potential capabilities of alternative (non single occupant vehicle) modes of transportation are addressed as they relate to the project need.

1.1.2.1 Mobility and Access Constraints

The Austin–San Antonio corridor comprises a variety of roadway facilities (see **Figure 1.1-2**). Major north-south roadways include I-35, Loop 1, US 183 and SH 123. East-west roadways

³McCray and Harrison, Transportation Research Board 78th Annual Meeting, January 1999, “NAFTA Trucks on U.S. Highway Corridors.”

⁴Capital Area Metropolitan Planning Organization (CAMPO), December 1998, “Application for FY 1999 Grant, National Corridor Planning Development Program and Coordinated Border Infrastructure Program.”

include SH 29, US 79, US 290, SH 71, SH 21, SH 142, SH 80, US 90 and I-10. A number of smaller state, county and local roadways provides the network for collecting and distributing traffic.

Interstate Highway 35 is the primary travel artery in the Austin–San Antonio corridor. As such, it is an important component of the corridor’s economic infrastructure in terms of the movement of people, goods and services to the many activity centers located along the corridor. The Interstate currently exists as a four- to six-lane freeway throughout most of the corridor from Georgetown to San Antonio. Heavily-traveled sections of I-35 in downtown Austin and San Antonio provide up to eight lanes. The geographic distribution of residential, employment, and retail/commercial centers within the corridor has created a substantial reliance by the traveling public on I-35. Recognizing this, TxDOT is pursuing plans and projects to reconstruct I-35 to a six- to eight-lane facility from Georgetown to San Antonio. Even with these improvements, congestion is expected to still be a problem, as discussed further in **Sections 1.1.2.4 and 1.1.2.5**.

Mobility within the corridor is hampered by the physical layout of the roadways. North-south roadways parallel to and east of I-35 do exist, but they are discontinuous. This disjointed network forces most north-south trips within the corridor to use the already congested I-35. To get to I-35, they must first travel on an east-west roadway, only a few of which offer higher-speed direct access to I-35. Those trips that do manage to navigate the disconnected series of two-lane or four-lane roadways are usually faced with relatively long travel times. This is due to numerous intersections and driveways which result in turning movement conflicts that lead to congestion and operating inefficiencies. Many of the existing roadways within the study corridor were designed primarily for access to private property and do not provide easy access between cities or to major employment centers. Many roads follow property boundaries, resulting in numerous curves, the majority of which cannot safely accommodate higher speeds. These factors combine to reduce north-south mobility in the corridor.

Limitations in the current roadway network also pose particular problems for important public facilities. Two facilities – Austin-Bergstrom International Airport and Kelly Air Force Base – represent major public transportation investments with different but equally important access needs that could be improved with the development of the SH 130 project.

Austin-Bergstrom International Airport. Access to Austin’s new airport, which also features major air cargo facilities, is primarily gained via I-35, US 183 and SH 71. All three of these facilities currently pose limitations. SH 71 and US 183 have frequent traffic signals and are becoming increasingly congested due to more businesses and residences being built in eastern Travis

County. In addition, access to the new airport from I-35 takes traffic through East Austin, where community leaders have expressed concern about neighborhood impacts. Most travelers to the new airport will be coming from the population centers north of the airport. This traffic places additional pressure on US 183, which, in the section from I-35 south to SH 71, has already experienced a 60-70 percent increase in traffic between 1990 and 1997. An alternate route to the new airport is needed that provides a direct connection to the growing areas of northeast Travis County and the rapidly urbanizing areas of Williamson County – and avoids I-35, US 183, the congested segments of SH 71, and the neighborhood streets of East Austin.

Kelly Air Force Base. According to the San Antonio – Bexar County Metropolitan Planning Organization (SA–BC MPO), the SH 130 project is key to the long term redevelopment of Kelly Air Force Base as a NAFTA logistics and distribution center following its closure as a defense facility.⁵ The SA–BC MPO also points out that the San Antonio City Council adopted a resolution in 1997 affirming its support for the construction of SH 130 as part of the city’s long range strategic plan to redevelop Kelly Air Force Base as an “inland port” to facilitate the distribution of NAFTA traffic.

Two other public facilities of regional importance in the corridor, the Travis County Exposition and Heritage Center located on FM 3177 (Decker Lane) in East Austin and the new Dell Diamond baseball stadium located on US 79 east of Round Rock, also have access constraints. Since 1990, traffic volumes have increased on both Decker Lane (by more than 60 percent) and on US 79 (by more than 80 percent). Both are currently four-lane arterial roadways, and both depend on other congested roadways like I-35 and US 183 for regional access.

In summary, the study corridor is characterized by a relatively undeveloped transportation network. Unlike the area west of I-35 in Austin, where Loop 1 and Loop 360 provide freeway or major arterial service in a north-south direction, the area east of I-35 mostly provides a discontinuous series of minor arterials or collector roadways capable of moving north-south traffic. This condition limits both mobility and accessibility within the corridor. The adverse effects of impaired *mobility* in the corridor are felt mostly by residents, commercial establishments, and other interests within the corridor, in the form of increased travel time and costs of congestion. The lack of *accessibility* to key public facilities and centers of economic activity negatively affects interests

⁵San Antonio – Bexar County MPO, December 1998, “Application to the Federal Highway Administration for Fiscal Year 1999 Grant Funding under the National Corridor Planning and Development Program and Coordinated Border Infrastructure Program”.

located for the most part outside the corridor, including residents and commercial transporters trying to get to Austin-Bergstrom International Airport, Travis County Exposition and Heritage Center, Kelly Air Force Base in San Antonio, and several large manufacturing facilities in Travis, Williamson, and Guadalupe Counties.

The proposed SH 130 project is intended to address mobility and accessibility for roadway users both inside and outside the study corridor. With improved mobility and accessibility, the study corridor will also be able to help accommodate future travel demands, such as those created by the City of Austin's *Smart Growth* long range planning initiative. Existing mobility and accessibility deficiencies within the corridor east of I-35 pose transportation-related disadvantages within the city's "Desired Development Zone." These deficiencies will hamper the City of Austin's goal of encouraging *projected* residential and commercial development in the area east of I-35 and away from the environmentally sensitive area west of I-35. It should be emphasized that the development referred to is development that, given the region's robust economy, is anticipated to occur in the region regardless of whether or when SH 130 is built. The proposed action could induce secondary land use impacts which could result in a "sprawl" model of suburban growth. However, the city of Austin's explicit intention to focus growth in eastern Travis County is accompanied by the need to provide new infrastructure, including transportation infrastructure. **Section 4.0 Environmental Consequences** contains information about how local governments can control the type and extent of development.

Lockhart is the largest city in Caldwell County. The majority of growth in the county has been attributed to the growth in Lockhart. The City has recently opened a new business park, having almost sold out the existing park. The Lockhart city council has recently developed business incentives for enticing new industries to locate in their city. Their economic development strategies are centered around their workforce and the availability of land. City officials have indicated that an additional major north-south arterial such as SH 130 could improve the city's economic conditions by supporting both industry and residents. City officials indicate that up to 50 percent of the local workforce currently commute to the Austin area to work. Both Lockhart and the City of Seguin are in unique positions to control their economic and environmental growth, and both of these cities have indicated that SH 130 could only improve upon current conditions.

1.1.2.2 Traffic Volumes

Traffic on I-35 from Georgetown to San Antonio has increased steadily over recent years as a result of the growth in population and economic activity within the corridor, as well as increased

international trade. **Table 1.1-3** shows increases in the number of vehicles per day (vpd) between 1990 and 1997; growth in truck traffic is shown in **Table 1.1-4**.

Table 1.1-3 Traffic Volume Changes Along I-35, 1990-1997

Location	1990 Vehicles Per Day	1997 Vehicles Per Day	Percent Increase 1990-1997
South of SH 29 in Georgetown	50,000	75,000	50%
South of US 79 in Round Rock	77,000	136,000	77%
South of FM 1825 in Pflugerville	84,000	135,000	61%
South of US 183 in Austin	148,000	206,000	39%
Colorado River Crossing in Austin	163,000	202,000	24%
South of SH 71 in Austin	114,000	166,000	46%
South of FM 1327 in Austin	53,000	78,000	47%
At RM 12 in San Marcos	56,000	75,000	34%
Hays/Comal County Line	37,000	59,000	59%
FM 1044 in New Braunfels	44,000	68,000	55%
Comal/Bexar County Line	53,000	77,000	45%
Loop 410 in San Antonio	120,000	152,000	27%
South of I-10 in San Antonio	90,000	171,000	90%

Source: Capital Area Metropolitan Planning Organization (CAMPO), "Austin Metropolitan Area Traffic Volume Report," June 1998; and Texas Department of Transportation.

Table 1.1-4 Truck Traffic Along I-35, 1992 and 1996

Location	Year	24-Hour Truck Volume	Percent Change
South Austin	1992	6,100	59.0%
	1996	9,700	
North Austin	1992	7,800	51.0%
	1996	11,800	

Source: TxDOT Austin District, 1998. (Note: Truck counts are rounded to the nearest hundred.)

As previously discussed, the growing amount of commercial activity outside of the Austin–San Antonio corridor is a major cause of the steadily increasing truck traffic on I-35. For example, in 1996 the number of trucks on I-35 in the segment from Buda to Georgetown whose trips neither began nor ended within that segment was estimated to be about 5,900 per day, or about

50-60 percent of the total number of trucks on I-35 in this area.⁶ Known as “through” trips, this trucking activity is expected to increase to about 13,300 trucks per day in this area by the year 2020⁷.

Although the largest traffic volumes occur within Austin and San Antonio, traffic on I-35 is not just an urban problem. A recent study sponsored by TxDOT and conducted by the University of Texas Center for Transportation Research found that in the rural areas of I-35 between San Antonio and Dallas, traffic grew between four and eight percent annually between 1983 and 1992.⁸ The study reported that a trip from San Antonio to Dallas, which took approximately 4.5 hours in 1972, will require eight hours by the year 2006, assuming only 4 percent traffic growth annually. The study concluded that unless corrective measures are taken, traffic conditions along the rural sections of I-35 will decline sharply with time and could even approach urban-like gridlock in the near future.

Other roadways in the study corridor have also experienced increases in vehicles per day between 1990 and 1997 (see **Table 1.1-5**). On most of these roadways, traffic has grown by as much as 50 percent or more during this period.

Table 1.1-5 Traffic Volume Changes on Other Area Roadways, 1990 – 1997

Roadway	Location	1990	1997	Percent Increase
		Vehicles Per Day	Vehicles Per Day	1990–1997
US 79	East of FM 1460	9,700	17,700	82%
US 183	East of I-35	37,000	61,000	65%
	South of US 290	35,000	54,000	54%
	South of Colorado River	43,000	67,000	56%
	South of FM 1625	8,000	12,200	53%
	At FM 2001	7,500	10,900	45%
Loop 1	North of US 183	23,000	88,000	283%
	South of US 183	70,000	144,000	106%
US 290 (E)	West of US 183	37,000	52,000	41%
	East of US 183	22,000	42,000	91%
	West of FM 973	14,100	22,000	56%

⁶TxDOT Austin District, Advanced Project Development, 1998, “IH-35/SH 130 Through Truck Diversion Analysis.”

⁷*Ibid.*

⁸Center for Transportation Research, The University of Texas at Austin, May, 1996, “A Vision for Increasing Personal Intercity Mobility.”

Table 1.1-5 Traffic Volume Changes on Other Area Roadways, 1990 – 1997
- continued -

Roadway	Location	1990 Vehicles Per Day	1997 Vehicles Per Day	Percent Increase 1990–1997
SH 71 (E)	West of FM 973	26,000	38,000	46%
	East of FM 973	18,500	31,000	68%
FM 685	North of Pfluger Lane	5,200	8,500	63%
FM 812	West of FM 973	7,700	9,900	29%
	East of FM 973	4,600	6,700	46%
FM 969	West of US 183	10,800	13,500	25%
	East of US 183	13,300	19,000	43%
FM 973	South of US 290 (E)	3,100	4,600	48%
	South of SH 71 (E)	6,000	7,600	27%
	At FM 812	5,800	8,300	43%
FM 1327	West of US 183 (S)	1,600	2,800	75%
FM 1460	North of FM 3406	1,200	2,600	117%
	South of FM 3406	2,700	5,100	89%
FM 1825	East of FM 685	12,600	18,500	47%
FM 3177	North of Decker Lake Road	2,400	4,000	67%
	South of Decker Lake Road	3,800	6,200	63%
SH 142	East of FM 2720	4,700	5,400	15%
SH 123	At FM 20	8,800	10,300	17%
I-10	At US 90	15,800	19,700	25%
	Bexar/Guadalupe County Line	20,000	29000	45%

Source: CAMPO, “Austin Metropolitan Area Traffic Volume Report,” June 1998; and TxDOT.

The rise in traffic volumes on I-35 and other area roadways, including the increase in truck traffic, has resulted from population growth, a robust Central Texas economy, and increasing trade with Mexico. One of the effects of this growing congestion problem is travel delay. A recent study prepared for the Austin–San Antonio Corridor Council, Capital Area Metropolitan Planning Organization (CAMPO) and the Capital Metropolitan Transportation Authority (Austin’s transit agency) estimated that current traffic delays on I-35 in the corridor cost truck operators more than \$100 million per year.⁹ The study also notes the cost that congestion imposes on commuters in terms of lost work, lost leisure time, and automobile operating costs. It estimates that I-35 congestion in the Austin–San Antonio corridor cost passenger vehicle occupants almost \$83 million in 1997.

⁹Weinstein & Associates, August 1997, “Economic Impact Assessment of the Proposed Austin–San Antonio Corridor Project.”

1.1.2.3 Accidents

Another symptom of traffic congestion on I-35 in the Austin–San Antonio corridor is an increase in the number of traffic accidents. During the mid-1990s, the accident rate for certain urban sections of I-35 (which in a stretch through downtown Austin was as high as 343 accidents per 100 million miles traveled) was more than double the statewide rate for urban freeways (which was 124 accidents per 100 million miles traveled).¹⁰ In recent years, the number of accidents on I-35 within the Austin–San Antonio corridor has grown (see **Table 1.1-6**). In 1999, the corridor accounted for 22 fatal accidents resulting in 32 deaths and 1,989 injury accidents resulting in 3,262 injuries. Deaths resulting from traffic accidents on I-35 within the Austin-San Antonio corridor increased by 78 percent between 1993 and 1999.

**Table 1.1-6 Traffic Accidents on I-35
from SH 29 in Georgetown to Loop 1604 in San Antonio**

Year	Fatalities	Fatality Accidents	Injuries	Injury Accidents	Non-injury Accidents	Total Accidents
1993	18	18	2,634	1,585	1,759	3,362
1994	26	24	3,005	1,808	1,881	3,713
1995	32	28	2,830	1,733	1,448	3,209
1996	42	32	3,458	2,030	1,127	3,189
1997	35	32	3,768	2,203	1,405	3,640
1998	31	27	3,534	2,080	1,389	3,496
1999	32	22	3,262	1,989	1,392	3,403
Percentage Increase, 1993–1999	78%	22%	24%	25%	NA	NA

Note:

Beginning with May 22, 1997, not injured occupants were not tabulated unless the accident was a fatal accident; therefore, not injured occupant data cannot be compared to years prior to 1997.

Beginning with July 1, 1995, accidents resulting in property damage only (PDO) were not tabulated unless at least one of the vehicles was towed from the scene due to damage; therefore, total accidents and non-injury accidents cannot be compared to prior years.

Source: Texas Department of Public Safety, Accident Records Bureau, 12/4/00.

According to the Texas Department of Public Safety, between the years 1989 and 1996, fatal accidents on interstate, US and state highways in the Austin metropolitan area increased by

¹⁰Texas Department of Public Safety, modified by TxDOT-Environmental Affairs Division.

12.9 percent, while injury accidents increased by 33.3 percent.¹¹ During that same time period, according to a Roadway Congestion Index developed by the Texas Transportation Institute, congestion increased along freeways and principal urban arterials in Austin from 0.96 to 1.03.¹² (A Congestion Index value above 1.0 indicates an undesirable level of congestion.) While a direct correlation between the number of accidents and congestion can not be made using these data, it does, nevertheless, suggest that decreased congestion could contribute to a decrease in fatal and injury accidents along major roadways such as I-35.

1.1.2.4 Future Roadway Congestion

The growth in population and economic activity that has contributed to increases in traffic volumes on I-35 and other area roadways in recent history is expected to continue well into the 21st Century. As a result, traffic volumes on I-35 and throughout the study corridor are also expected to rise. **Table 1.1-7** shows year 2020 forecasted vehicles per day (assuming that SH 130 is not constructed).

Table 1.1-7 Year 2025 Forecasted Vehicles Per Day (VPD) for I-35 and Other Area Roadways

Road	Approximate Location	1997 VPD	Projected 2025 VPD ^a	Percent Increase 1997–2025
I-35	Round Rock	136,000	252,000	85%
	Downtown Austin	202,000	356,000	76%
Loop 1	North of US 183	88,000	182,000	107%
US 183	Colorado River Crossing	67,000	210,000	213%

¹¹ Fatal and Injury Accident information was provided by the Texas Department of Public Safety's Accidents Records Bureau. This data includes only those accidents reported as occurring on Interstates, US or State Highways in the area, and are not necessarily limited to the City of Austin's jurisdictional boundaries.

¹² The Texas Transportation Institute's Roadway Congestion Index (RCI) estimates congestion levels in a format that is easy to understand and communicate to the general public. Average daily travel volume per lane on freeways and principal arterial streets are estimated using areawide estimates of vehicle-miles of travel (VMT) and lane-miles of roadway. The resulting ratios are combined using the amount of travel on each portion of the system so that the combined index measures conditions on the freeway and principal arterial street systems. This variable weighting factor allows comparisons between the 50 metropolitan areas TTI monitors throughout the United States. The roadway network used in the RCI calculations, therefore, includes other major urban arterials not necessarily defined as Interstate, US or State Highway in the Accident Data referred to in Footnote 11.

Table 1.1-7 Year 2025 Forecasted Vehicles Per Day (VPD) for I-35 and Other Area Roadways
- continued -

Road	Approximate Location	1997 VPD	Projected 2025 VPD ^a	Percent Increase 1997–2025
US 290	East of US 183	42,000	140,000	233%
FM 969	East of US 183	19,000	51,000	168%
SH 71	East of US 183	46,000	197,000	328%

Notes:

a – Assumes SH 130 is not constructed.

Source: Capital Area Metropolitan Planning Organization, “Austin Metropolitan Area Traffic Volume Report,” June 1998. 2025 traffic projections are from Alliance-Texas Engineering Company, “SH 130 Toll Traffic Forecasts, Austin - San Antonio Super Regional Model,” August 2000 and are based on CAMPO’s 2025 Transportation Plan.

The particularly large traffic increases anticipated for US 183, US 290, FM 969 and SH 71 shown in **Table 1.1-7** are in recognition of the travel demand created by the new Austin–Bergstrom International Airport and surrounding development, as well as the population and employment growth anticipated for eastern Travis County over the 25-year period.

As part of the Major Investment Study (MIS) for SH 130 prepared by the TxDOT–Austin District in 1997, project planners developed performance measures to evaluate whether SH 130 could meet the goal of relieving congestion on I-35 and other major transportation facilities.¹³ More information about the SH 130 MIS is presented in **Section 2.0 Alternatives**. Based on the 1994 “Austin Metropolitan Area Transportation Plan,” which was the official long-range transportation plan prepared by the Capital Area Metropolitan Planning Organization (CAMPO, formerly known as the Austin Transportation Study), the performance evaluation focused on I-35, US 183 and Loop 1, all of which were believed to be potentially affected by the development of SH 130.

The conclusion of the MIS evaluation was that traffic congestion on all three facilities would be worse in the future without SH 130. The traffic demand model showed that 94 percent

¹³TxDOT Austin District, April, 1997, “Draft Major Investment Study for State Highway 130.”

of the combined miles of the above mentioned three facilities were operating at a level of service (LOS) E or worse when SH 130 was removed from the future transportation network.¹⁴

Conversely, when SH 130 was added to the future transportation network, the benefits to I-35, US 183 and Loop 1 were definitely noticeable. With SH 130 taking some of the traffic off of the other facilities, their combined facility miles at LOS E or worse fell to just 78 percent. Only 21 percent of these miles were estimated to operate at LOS F3 or more.

The MIS performance evaluation also looked at the cost of congestion under the “with SH 130” and “without SH 130” scenarios.¹⁵ The MIS concluded that with SH 130, the annual congestion cost in the year 2020 on the four freeways (SH 130, I-35, US 183 and Loop 1) would be \$51 million. Without SH 130, the annual congestion cost would be more than \$123 million.

1.1.2.5 Improvements to the Existing Roadway Network

The increase in population and employment within the Austin–San Antonio corridor, combined with the rise in trade-related interregional trucking, has resulted in heavy demands for improvements and additions of transportation infrastructure. TxDOT is already implementing many of the relatively low-cost improvements to I-35 that are needed to improve traffic flow and traffic safety. These projects have focused primarily on improving the operation of on- and off-ramps, many of which are dangerously outdated and overwhelmed by the current traffic levels. These improvements, while important, are not intended to, nor are they capable of, permanently relieving congestion and improving mobility in the corridor.

As mentioned earlier, TxDOT is also pursuing improvements that would add lanes to I-35 within both urban and rural sections of the corridor. Options for improving the urban sections of I-35 in the Austin area are being explored through a major investment and environmental impact study. The option of adding capacity to I-35, by constructing high occupancy vehicle (HOV) lanes is addressed in **Section 2.0 Alternatives**.

¹⁴LOS is a qualitative measure of traffic operating conditions and is directly related to a roadway’s volume to capacity ratio. LOS is given a letter designation from A to F, with LOS A representing very good operating conditions and LOS F representing poor operating conditions with lengthy delays and heavy congestion. As a practical consideration, LOS D is generally considered the limit of acceptable operation with LOS C or better the desirable condition.

¹⁵The Texas Transportation Institute assisted with the congestion cost analysis.

Within the urban areas of New Braunfels and San Marcos, TxDOT is currently improving I-35 with the construction of additional general purpose lanes. The TxDOT–San Antonio District is also exploring improving I-35 through a Major Investment Study such as construction of HOV lanes, express lanes or additional general purpose lanes. **Section 2.0 Alternatives** addresses these improvements.

Other major improvements in the transportation system that are currently in the development process but have not yet received construction funding include US 183-A, Loop 1 north extension, and SH 45. All of these projects are included in the CAMPO long-range plan. The SH 130 MIS analysis discussed above (as well as the projected I-35 volumes shown in **Table 1.1-7**) assumed the inclusion of these projects in the calculation of future congestion and future traffic volumes.

1.1.2.6 Alternative Transportation Modes

Some communities within the Austin–San Antonio corridor are beginning to stress the importance of land use development patterns that encourage alternatives to the single-occupant vehicle (SOV) mode of travel. This alternative pattern, or neo-traditional development as it is sometimes called, is characterized by mixed-use and higher densities and has the potential to influence travel behavior by making options such as walking and biking or the use of transit more appealing. These land use patterns are evident within the corridor in older urban neighborhoods and in a few new land development projects. This approach to development is believed to be more efficient from a transportation standpoint, in that residential, employment, commercial and retail land uses are located in close proximity or along transit lines, meaning less reliance on automobile travel. Over time, these more transport-efficient land use patterns, assuming they take hold, could result in an increase in alternative travel modes.

However, the predominant land use pattern within the corridor is not of this type. It is a much more single-use, low-density, conventional pattern, where residential areas are located away from employment and shopping areas. It has meant that most trips require traveling by automobile. For example, reliance on the privately-owned vehicle can be seen by looking at the percentage of work trips¹⁶ by mode for counties within the corridor (**Table 1.1-8**). The vast majority of persons

¹⁶Work trips account for approximately 25 percent of total daily trips (and a much higher percentage during peak hours), and are therefore a good measure of assessing dominant modes of travel.

age 16 and older within the corridor in 1990 used private vehicles or rode in carpools for their journey to work, much like the state as a whole.

Table 1.1-8 Mode of Travel for Work Trips, Persons 16 Years and Older

Travel Mode to Work	State of Texas	Williamson County	Travis County	Hays County	Caldwell County	Guadalupe County
Private vehicle	76.7%	78.2%	75.4%	73.9%	66.2%	77.1%
Car Pool	14.9%	15.5%	13.4%	15.7%	23.3%	16.0%
Public Transit	2.2%	0.7%	4.2%	1.1%	0.5%	0.1%
Bicycle	0.2%	0.1%	0.6%	0.5%	0.2%	0.2%
Walk	2.7%	2.0%	2.9%	4.6%	5.9%	2.4%
Other (other mode, work at home)	3.3%	3.5%	3.5%	4.2%	3.8%	4.1%

Source: U.S. Census Bureau, 1990.

Public transportation improvements, such as commuter rail or light rail transit, are discussed in more detail in **Section 2.0 Alternatives**. Such improvements could help to relieve congestion on I-35 and other major transportation facilities, improve mobility within the corridor, and provide access to important public facilities. (It should be noted that transit improvements, including an extensive light rail system within the Austin metropolitan area, are included in the CAMPO long-range plan. The SH 130 MIS analysis discussed above, and the projected traffic volumes shown in **Table 1.1-7**, assumed the inclusion of these projects in the calculation of future congestion.)

Given existing land use patterns and travel behavior, it is not likely that transit investments alone could accommodate current and anticipated travel demand. Furthermore, there is still the problem of truck traffic or traffic that originates and/or terminates outside the corridor, which transit is not designed to directly accommodate. In addition, only the metropolitan areas of Austin and San Antonio are served by large transit systems. While some rural transit service is available in the non-urban areas of the corridor, these services are limited in terms of their service areas and frequency of service.

1.1.3 Summary: Purpose and Need for Transportation Improvements

Population growth within the Austin–San Antonio corridor during the last several decades, combined with a more recent intensification of interregional commerce, has led to

unacceptable levels of congestion on I-35. The effects of this congestion – increased traffic fatalities and rising costs due to travel delays – suggest the need to take action. Other transportation problems in the corridor stem from a poorly developed roadway network that is constrained in its ability to meet the mobility and access needs of the corridor’s population and major public facilities. Population growth projections for the corridor, development initiatives that encourage growth east of Loop 1, and the anticipated increase in trade-related trucking activity indicate that corridor congestion problems will continue to worsen unless some action is taken.

Efforts to improve traffic flow and safety on I-35 are underway. Other improvements to the transportation system are planned for the future, including major upgrades to I-35, US 183, and SH 71. Long-range plans also call for substantial new investments in transit infrastructure along with programs and policies to curb travel demand, encourage more transport-efficient land use patterns and generally provide for other alternatives to SOV travel. However, long-range traffic forecasts have shown that even with these improvements, programs and policies, there will remain a high level of congestion on I-35 and other major transportation facilities in the corridor.

The proposed SH 130 project is intended to function as an integral part of the future transportation system in the Austin–San Antonio corridor. Its purpose – to relieve congestion on I-35 and other major transportation facilities, improve mobility, and increase accessibility to important public facilities – will complement other transportation investments, resulting in a safer, more economically productive transportation system for Central Texas and the North American free trade community.

1.2 TRANSPORTATION PLANNING

1.2.1 History

Since 1984, effort has been expended in considering traffic congestion and mobility limitations in the Austin–San Antonio corridor. Over the years, studies were conducted, plans were developed and certain actions were taken by TxDOT and others regarding an alternative highway corridor for I-35. These plans and studies have provided valuable antecedents to this FEIS. Throughout the process, local officials, citizens and various agency personnel have met to discuss and define the traffic congestion and mobility problems and formulate possible solutions. The summaries presented below only refer to portions of the referenced documents that directly pertain to these issues and should not be construed as comprehensive summaries. These references are not

included in this FEIS but are public documents and available through the listed source. This material is presented to provide historical and technical context for the need for the project.

Feasibility Study for an I-35 Alternate Route – TxDOT. December 1988.

On December 22, 1986, Transportation Commission Minute Order 85260 authorized TxDOT to conduct a feasibility study for an I-35 alternate route between Austin and San Antonio. This study was conducted by TxDOT's Division of Transportation Planning and Programming in conjunction with the Austin District, the San Antonio District, and the Division of Highway Design, with the assistance of the Texas Transportation Institute of Texas A&M University. The study, which was completed in December 1988, determined that there was sufficient evidence of feasibility to continue the project development process. Project development work on this alternate route, designated as Texas Highway 297, continued up through 1992, after which it was incorporated into the SH 130 project.

Overview Environmental Assessment – The MoKan Transportation Corporation. April 1988.

Texas Transportation Commission Minute Order 83157, dated May 22, 1985 provided for the creation of a Transportation Corporation to develop a facility from I-35 north of Georgetown to US 183 near Austin, a distance of approximately 31.5 miles. A Transportation Corporation was formed and a location study and environmental assessment were completed for several alternative segments. The overview environmental assessment was approved for further processing by the FHWA on April 25, 1988. Public meetings were held concerning the project in Georgetown on May 17, 1988, and in Austin on May 24, 1988. Key issues included the concern over potentially adverse impacts to East Austin neighborhoods and the protection of sensitive ecological resources. After the economic downturn in Texas in the late 1980s, the Transportation Corporation ceased work on the project and was dissolved under Texas Transportation Commission Minute Order 100450, dated January 28, 1992.

Acquisition of the M-K-T Railroad Right-of-Way – TxDOT. October 1988.

Under Commission Order 88030, dated October 28, 1988, TxDOT assisted with the acquisition of approximately 28 miles of abandoned Missouri-Kansas-Texas (M-K-T) Railroad right-of-way located between the cities of Austin and Georgetown. Both state and local funds were used for the purchase. The purchase of the right-of-way was intended to preserve an existing transportation corridor for future transportation purposes. This purchase was made with the

acknowledgment that the selection of any future transportation route would be subject to environmental studies. Williamson County, Travis County, the City of Austin, the City of Georgetown, and the Capital Metropolitan Transportation Authority also helped purchase the abandoned M-K-T right-of-way.

Feasibility Study for SH 297 – The Greater Austin-San Antonio Corridor Council, Inc. April 16, 1990

The Greater Austin-San Antonio Corridor Council, Inc. entered into a contract with Bender/Pape-Dawson Joint Venture on April 16, 1990. The purpose of this contract was to develop a route for a four-lane highway connecting US 183 (north of Lockhart) with I-10 (northeast of Seguin), covering approximately 34 miles. During the course of selecting the final route, several alternate routes were developed and presented to the Corridor Transportation Committee for consideration. The final alternate route, incorporating the various recommendations made by the Corridor Transportation Committee during the review process, was 31.44 miles long with 13.45 miles in Guadalupe County and 17.99 miles in Caldwell County. There is no document of record indicating that the City of Seguin adopted the proposed route. Guadalupe County adopted the proposed route on November 25, 1991.

Intermodal Surface Transportation Efficiency Act (ISTEA) – U.S. Congress. 1991.

Section 11.08, Priority Intermodal Projects, of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 specifically called for “[r]oute studies, preliminary engineering, and right-of-way acquisition for [an] Alternative Route to relieve I-35 traffic congestion.” Federal funds in the amount of \$5.2 million were designated for the SH 130 project for these purposes.

Draft Overview Environmental Assessment for the Proposed IH-35 Alternate Facility – TxDOT. August 1993.

In August 1993, TxDOT prepared a draft overview environmental assessment which provided an analysis of the entire SH 130 project. The study covered an 86-mile corridor located in Williamson, Travis, Caldwell, and Guadalupe Counties, from I-35 north of Georgetown to I-10 near Seguin. The purpose of the overview was to provide a history of the proposed project, discuss general social, economic, and environmental factors, and describe the process for further

investigation of project alternatives, public involvement and coordination with other governmental agencies. This draft overview environmental assessment was never approved by FHWA.

Austin Metropolitan Area Transportation Plan – CAMPO. December 1994.

The long-range transportation plan for the Austin metropolitan area, approved by CAMPO (formerly ATS) in December 1994, included SH 130, subject to the MIS process (see **Section 1.2.2** for more information about CAMPO’s long-range plan). Because the SH 130 study corridor is outside the boundary of the San Antonio–Bexar County MPO, the SH 130 MIS is not subject to endorsement by that body.

Major Investment Study (MIS) for SH 130 – TxDOT. April 1997.

Upon completion of the SH 130 Overview Environmental Assessment and as part of the SH 130 planning process, the TxDOT–Austin District prepared an MIS. A summary of the SH 130 MIS findings is located in **Section 2.0 Alternatives**. The MIS documented the need to relieve congestion on I-35 and serve the growing mobility needs of the corridor. It also identified opportunities for how SH 130 could be developed in a way that demonstrates innovative intermodal operations. The MIS was endorsed by CAMPO in July 1997, with several provisions (many of which are being address through the NEPA environmental process).

Transportation Equity Act for the 21st Century (TEA-21) – U.S. Congress. 1998.

Federal funds in the amount of \$29.7 million were “earmarked” for the SH 130 project within the legislation that re-authorized ISTEA. Portions of this legislation, known as the Transportation Equity Act for the 21st Century, or simply TEA-21, provide discretionary funds for specific projects such as SH 130.

Designation of SH 130 as a Candidate Toll Road – TxDOT. May 1998.

In May 1998, the Board of Directors of the Texas Turnpike Authority Division of the Department of Transportation (TTA) passed Resolution 98-17 which authorized feasibility studies subject to approval by the Texas Transportation Commission (TTC) and further requested that monies from the TTA’s Feasibility Study Fund be used in the pursuit of those studies. In response, the TTC adopted Minute Order No. 107491 which authorized TTA to spend up to \$12 million from its Fund for the purpose of studying, planning, and developing several proposed transportation

improvements, including State Highway 130, as turnpike projects on the designated state highway system. In September 1998, an agreement between TxDOT and TTA officially transferred the responsibility of the project's development from TxDOT to TTA.

CAMPO 2025 Transportation Plan – CAMPO. June 2000.

The June 2000 update of the long-range plan continues to include SH 130 in the future roadway network.

1.2.2 Transportation Goals and Objectives

The overall goal of the proposed SH 130 project is to relieve congestion on I-35 and other major transportation facilities within the Austin–San Antonio corridor, improve mobility, and increase accessibility to important public facilities. By relieving congestion on I-35, the proposed project should achieve important benefits such as reducing the rate of increase in fatalities resulting from traffic accidents and lowering the amount of lost economic productivity resulting from travel delays. The FHWA, TxDOT, CAMPO, San Antonio – Bexar County MPO, Alamo Area Council of Governments and the cities and counties along I-35 within the Austin–San Antonio corridor all share this common goal. The proposed SH 130 project has been endorsed through resolutions of support from every city and county government in the region, both of the Metropolitan Planning Organizations, both Metropolitan Transit Authorities, every Chamber of Commerce and major newspaper in the area.¹⁷

The CAMPO long-range transportation plan provides general guidance for the development of transportation improvements in the Austin metropolitan area. Local governments have also expressed their viewpoints about specific alignments for SH 130, and these are discussed in **Section 4.1.1 Compatibility of SH 130 Alternatives with Local Plans and Policies**. Excerpts from the long-range plan are presented below to provide regional context for the SH 130 FEIS process.

¹⁷San Antonio–Bexar County Metropolitan Planning Organization, December 1998, “Application to the Federal Highway Administration for Fiscal Year 1999 Grant Funding under the National Corridor Planning and Development Program and Coordinated Border Infrastructure Program.”

Austin Metropolitan Area Transportation Plan – CAMPO. December 1994.

Vision: The CAMPO regional transportation plan and program will provide for the maximum mobility for the people of the Greater Austin Metropolitan Area with the least detrimental effects. It will support the goals of safety, clean air, clean water, and preservation and respect for neighborhoods. It will anticipate future conditions and be realistic, affordable and effective to the community. It will foster the development and maintenance of a metropolitan area with full opportunity for and inclusion of a citizenry which is culturally, economically and physically diverse.

Objectives: Undertake transportation planning within the framework of comprehensive regional planning and support regional growth and development goals.

Maintain personal mobility.

Coordinate the provision of facilities for all major modes of travel for a balanced transportation system.

Be compatible with the unique and sensitive environment in the greater Austin metropolitan area and be consistent with natural resource limitations.

Be consistent with the area's social, environmental, economic and energy conservation goals.

Be consistent with all adopted land use plans and ordinances.

Ensure that the Austin metropolitan area continues to meet clean air standards.

Provide for a diversity of life and work styles and travel behaviors for different subareas with a comprehensive multipurpose transportation system.

Be fiscally constrained.

SH 130: It is the vision of the CAMPO Policy Advisory Committee that SH 130 be a true intermodal facility, with a freight and passenger rail element. To protect the

concerned neighborhoods of East Austin, the portion of SH 130 which stretches from US 290 to SH 71 is adopted as a parkway and must have limited access points.

The MIS shall also include discussion of alignment options, freeway/parkway options, social/economic impacts, and tollway feasibility. During the MIS the planners should evaluate whether construction of SH 130 will eliminate the need for conversion of US 183 to a freeway from US 290 to SH 71.

Furthermore, no construction of any SH 130 segment in the CAMPO study area should proceed until realistic and comprehensive design and financial plans are in place for all segments.

CAMPO 2025 Transportation Plan – CAMPO. June 2000.

SH 130: CAMPO supports building SH 45(N), SH 130, Loop 1(N), and US 183A and the newly recommended portion of SH 45(S) as new toll roads, as well as other appropriate roads to be identified.

It is the vision of the CAMPO Policy Advisory Committee (PAC) that SH 130 be a true intermodal facility, with a freight and passenger rail element. To protect the concerned neighborhoods of East Austin, the portion of SH 130 which stretches from US 290 to SH 71 is adopted as a parkway and must have limited access points.

SH 130 is adopted as a six-lane parkway toll road, with frontage roads where required.

The CAMPO PAC approves both alternative alignments of SH 130 in the 2025 Plan with the following planning parameters for the project:

- The project's main purpose is to serve as a bypass for through traffic around urban areas in Central Texas.
- The project must avoid environmental justice issues in East Austin as required by FHWA Order 6640.23.
- The project must not have unacceptable noise impacts on neighborhoods.

- The project must not have unacceptable impacts on parks and park acquisition plans.
- The project must not have unacceptable impacts on watersheds with a high resource value.

Support the development of SH 130 as an express freight route.

Support the relocation of the UPRR to the east for through-rail freight movement in conjunction with the development of SH 130, if feasible.

Support the development of alternative roadway freight routes in order to bypass traffic congestion and construction activities on IH 35.

1.2.3 Other Goals Important in the Selection of an Alternative

In addition to the goals, objectives and viewpoints mentioned above, other issues were considered in the FEIS decision process. Throughout the history of the SH 130 project, various concerns have been voiced by the public (see **Section 8.0 Comments and Coordination** for more information about public comments). The primary issues are summarized as follows:

- minimize adverse impacts (like traffic, residential and commercial relocations, disruption and noise) to existing neighborhoods, residences and businesses,
- preserve unique ecological resources, such as remnant prairies,
- limit the ability of the proposed action to encourage land development in unincorporated areas (i.e., avoid promoting “urban sprawl”), and
- develop SH 130 as a multimodal corridor.

These concerns are consistent with the transportation goals and objectives discussed earlier; therefore, an effort was made to integrate these considerations into the planning and impact assessment process. The concerns stated above reflect public commitment to protect and enhance the human and natural environment. The assessment of social and economic impacts in this FEIS is done with the understanding that portions of the corridor are rapidly being developed, thus requiring careful attention to minimizing negative impacts to neighborhoods and individual residences and businesses. With respect to the natural environment, the evaluation begins by recognizing that the Austin–San Antonio corridor enjoys an attractive and ecologically valuable physical location. The proposed action must be designed and constructed in a manner which

maximizes these resources by minimizing neighborhood impacts and avoiding sensitive habitats, among other objectives. The balancing of these human and natural environmental considerations with transportation planning objectives is a fundamental goal of the FEIS process.

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2.0 ALTERNATIVES

This section presents and describes the alternatives considered for meeting the purpose of and need for SH 130, including those eliminated from further analysis. In accordance with guidelines provided in FHWA's Technical Advisory T6640.8A, both build and no build alternatives have been considered. In addition to an assessment of traditional approaches to increase capacity, this section examines congestion reduction strategies and public transportation alternatives as part of the planning process for the proposed SH 130.

Possible alternatives were evaluated according to the project's purpose and need (see **Section 1.0 Purpose and Need**). Alternatives that met the following requirements were considered.

- An alternative must relieve congestion on I-35 and other major transportation facilities within the Austin-San Antonio corridor.
- An alternative must improve mobility within the Austin-San Antonio corridor.
- An alternative must increase accessibility to important public facilities within the Austin-San Antonio corridor.

In addition to these requirements, project alternatives were identified according to various considerations contained in the SH 130 MIS (as endorsed by CAMPO in July 1997), as well as the more general transportation goals and objectives expressed for SH 130 throughout the project's history.

- An alternative should be a multimodal and intermodal facility.
- An alternative should have limited access points.
- An alternative should have a realistic and comprehensive design and financial plan. (All build alternatives will be candidate toll roads.)
- An alternative should minimize adverse impacts to existing neighborhoods, residences and businesses.
- An alternative should preserve unique ecological resources.

- An alternative should limit the ability of the proposed action to encourage land development in unincorporated areas (i.e., avoid promoting “urban sprawl”).

Of the range of alternatives evaluated, eight build alternatives meet the above criteria and have been advanced for detailed analysis. These are termed Alternatives 1 through 8. Alternative 2 has been identified by TTA as the Preferred Alternative. (A detailed rationale for identifying the Preferred Alternative is presented in **Section 4.0 Environmental Consequences**.) However, all of the eight alternatives are viable options for implementation because they meet the stated purpose and need of the project. In addition, the No-Action Alternative is considered as a viable option even though it does not meet the stated purpose and need of the project. This FEIS provides an objective evaluation of all eight build alternatives and the No-Action Alternative. Each is described in detail in **Section 2.4 Alternatives Considered Reasonable**.

2.1 SUMMARY OF ALTERNATIVES DEVELOPMENT PROCESS

A variety of project alternatives, alternative roadway alignments, combinations of alignments, and the No-Action Alternative were considered and analyzed. Some were identified during previous studies, some were suggested by members of the public or by elected officials, and others were developed by the project engineers. Following is a brief summary of the alternatives development process.

2.1.1 Preliminary Alternatives Identified in the Major Investment Study

As part of the MIS for SH 130 completed by the TxDOT-Austin District in 1997, project planners developed recommendations regarding route and design characteristics. The MIS generally recommended that SH 130 be constructed as a six-lane highway from north of Georgetown to Seguin with a median width capable of accommodating other transportation facilities such as HOV lanes or rail. Specific route design and considerations referenced in the MIS are briefly described as follows.

2.1.1.1 Route Considerations

The MIS’s suggestions regarding route considerations are shown in **Figure 2.1-1**. The MIS acknowledged that specific route alternatives for SH 130 need to be determined through the NEPA process; however, it recommended that a route east of Lake Walter E. Long be examined in

addition to routes west of the Lake. While affirming that the termini for SH 130 should be Georgetown on the north and Seguin on the south, the MIS noted that consideration should be given to phasing the construction of SH 130, with construction segments connecting to I-35 via US 290, SH 71, FM 1327, or Slaughter Lane. The MIS encouraged the consideration of future intermodal connections between SH 130 and Austin-Bergstrom International Airport (ABIA) via SH 71. It also recommended that consideration be given to an intermodal connection with a possible rail transit route north of the Colorado River. The rail transit route is included as a preserved rail corridor in CAMPO's 2025 Transportation Plan.

2.1.1.2 Design Considerations

The MIS also contained several recommendations about the design of SH 130. It suggested that SH 130 include provisions for sections with and without frontage roads, HOV lanes, transit and rail (but not high-speed rail), and pedestrian/bicycle facilities. It noted that the specific locations for each of these options and the final decision for whether to include them in the SH 130 right-of-way will depend upon further study.

The MIS also recommended that consideration be given to other potential aspects of design, including operating SH 130 as a toll road; coordinating with Union Pacific railroad to determine freight rail needs in the SH 130 right-of-way; considering scenic easements based on input from local governments; and considering intelligent transportation system technology. More detailed information about these design considerations is contained in **Section 2.3 Multimodal and Intermodal Strategies**.

2.1.2 Preliminary Alternatives Developed by the Project Engineers and Through Public Involvement

Initially, TxDOT chose to develop the SH 130 project as three separate projects known as Segment A, Segment B and Segment C.¹⁸ Generally, Segment A went from Georgetown south to US 290; Segment B went from US 290 south to just north of Lockhart; and Segment C covered the remainder of the corridor south to Seguin. For each segment, route location and environmental studies were conducted by project planners and design engineers, and several public meetings were held. (For detailed information about public meetings, see **Section 8.0 Comments and**

¹⁸ Subsequently, in May 1999, TxDOT decided to combine the three segments into a single Environmental Impact Statement, as represented by this document.

Coordination.) The objectives of the route location process included the preservation, to the maximum extent possible, of the quality of the natural environment; the avoidance or minimization of conflict with existing and planned land uses; utilization of existing rights-of-way; compliance with applicable state and federal laws and regulations; and to the extent possible, conformance with the plans and policies of local governments within the study corridor.

Based on these general criteria, together with engineering and economic considerations, the input of elected officials, and comments made by citizens at the various public meetings, several preliminary alternative alignments were identified. The following paragraphs describe the preliminary alternative alignments for each of the previous SH 130 segments. The alignments for Segments A, B, and C are shown in **Figures 2.1-2, 2.1-3 and 2.1-4**, respectively. The descriptions contain references to land use and natural features of the landscape that can be found either on these Figures or on **Plates 1-1 through 1-46 Human Environment & Flood Plains** in **Appendix A** of this FEIS.

2.1.2.1 “Segment A” Preliminary Alignment Alternatives

Alignment W-1 (Williamson County)

Alignment W-1 began at the intersection of I-35 and SH 195 about five miles north of Georgetown. It traveled south, coinciding with I-35, until a point about 2,500 feet south of Berry Creek where it veered southeast through the Live Oaks at Berry Creek RV park and towards the San Gabriel River. It followed along this line crossing the San Gabriel River within the Edwards Aquifer Recharge Zone,¹⁹ where it turned to a more southern route. After crossing SH 29 south of the river, the route again veered to the southeast until it reached the intersection of CR 111 and CR 110. At this point the alternative turned south once again and eventually joined and followed the M-K-T right-of-way. It followed this right-of-way across McNutt Creek, across US 79 through portions of the city of Round Rock, and across the Williamson/Travis County line. It veered southeast again, away from the M-K-T right-of-way, at its intersection with Wilke Lane. The route then traveled southeast until crossing FM 685 where it turned south once more toward its terminus at Pfluger Lane.

¹⁹More information about the Edwards Aquifer is contained in **Section 3.0 Affected Environment**. Potential impacts to the Aquifer in this area are discussed in **Section 4.0 Environmental Consequences**.

Alignment W-2 (Williamson County)

Alignment W-2 began at the intersection of I-35 and SH 195 about five miles north of the city of Georgetown. It traveled south, coinciding with I-35, until a point about 2,500 feet south of Berry Creek where it veered southeast through the Live Oaks at Berry Creek RV park and toward the San Gabriel River. It traveled in this southeast direction crossing the San Gabriel River within the Recharge Zone. After crossing SH 29 south of the river, it turned to the southwest, crossed CR 110, and eventually joined and followed Alignment W-1 until its terminus at Pfluger Lane.²⁰

Alignment W-3 (Williamson County)

Alignment W-3 began at the intersection of I-35 and SH 195 about five miles north of Georgetown. It traveled south, coinciding with I-35, until a point about 2,500 feet south of Berry Creek where it veered southeast through the Live Oaks at Berry Creek RV park and toward the San Gabriel River. It traveled in this southeast direction crossing the San Gabriel River within the Recharge Zone and turning to the southwest after crossing SH 29, similar to Alignment W-2. Unlike Alignment W-2, however, Alignment W-3 turned to a more southern route before it crossed CR 110. It followed this southern route, passing to the east of the impoundment on McNutt Creek, before turning west-southwest just north of and eventually along CR 112. The route followed CR 112 until its intersection with the M-K-T right-of-way where it turned south along the right-of-way, coinciding with Alignments W-1 and W-2. The route split off at a point approximately 4,600 feet north of US 79 and traveled southeast across Brushy Creek and across the Williamson/Travis County line. After crossing the county line it veered south again, crossed Wilke Lane, veered southeast across FM 685, and then turned south once more towards its terminus at Pfluger Lane.

Alignment W-4 (Williamson County)

Alignment W-4 began at the intersection of I-35 and SH 195 about five miles north of Georgetown. It traveled south, coinciding with I-35, until a point about 2,500 feet south of Berry Creek where it veered southeast through the Live Oaks at Berry Creek RV park and towards the San Gabriel River. It traveled in this southeast direction crossing the San Gabriel River within the

²⁰At the February 1998 public meeting, Alignment W-2 was displayed along an alignment that was different from Alignment W-1 after crossing CR 110. Instead, W-2 was shown as turning to the south prior to reaching CR 110 and passing to the east of the man-made impoundment on McNutt Creek (i.e., similar to Alignment W-3). Following the public meeting, Alignment W-2 was shifted to join the W-1 alignment south of CR 110, running west of the impoundment and proceeding as described above. The W-1 alignment was straighter and more direct.

Recharge Zone and crossing SH 29 where it turned to the southwest (coinciding with Alignment W-2). At a point about 4,300 feet north of CR 110, Alignment W-4 turned back to the southeast and followed this line across CR 122 and US 79 before turning south near the Williamson/Travis County line. It then followed this southern route toward its terminus at Pfluger Lane.

Alignment W-5 (Williamson County)

Alignment W-5 began at the intersection of I-35 and SH 195 about five miles north of Georgetown. It traveled south, coinciding with I-35, until a point about 2,500 feet south of Berry Creek where it veered southeast through the Live Oaks at Berry Creek RV park and towards the San Gabriel River. It traveled in this southeast direction crossing the San Gabriel River within the Recharge Zone and crossing SH 29, where it turned east-southeast and eventually back to the southeast towards the city of Hutto. North of US 79 the route turned south. Passing to the west of the new Hutto High School site, the alignment crossed US 79 and eventually joined and followed FM 685. At the Williamson/Travis County line it joined and followed Alignment W-4 to its terminus at Pfluger Lane.

Alignment W-6 (Williamson County)

Alignment W-6 began at the intersection of I-35 and SH 195 about five miles north of Georgetown. From there it veered to the southeast crossing Berry Creek within 2,000 feet downstream of Berry Creek Springs, an Edwards Aquifer discharge point. It continued on toward the San Gabriel River, joining Alignments W-2, W-3, W-4, and W-5 at their crossing of the river, and then following Alignment W-5 to its terminus at Pfluger Lane.

Alignment T-1 (Travis County)

Alignment T-1 began at Pfluger Lane and traveled south for a short distance before veering southwest across Wilbarger and Gilleland Creeks. It continued traveling southwest across Pflugerville East Road, past the Gatlinburg Subdivision and toward the M-K-T Railroad right-of-way, eventually reaching and following adjacent to the east of the right-of-way at Yager Lane. Here it passed along the western property line of the Samsung Austin Semiconductors manufacturing facility, and then turned south, still following adjacent to the M-K-T right-of-way toward its terminus at US 290.

Alignment T-2 (Travis County)

Alignment T-2 began at Pfluger Lane and traveled south across Pflugerville East Road. Once past this road the route curved to the southwest and traveled generally in that direction across Gilleland Creek, through the new Boulder Ridge manufactured home development, and past Travis County's proposed site for the Northeast Metropolitan Park along Killingsworth Road. It continued along, crossing first Gregg Lane, then Yager Lane, then Parmer Lane, and finally Cameron Road. It joined Alignment T-1 at a point 2,200 feet south of Cameron Road and followed it to the terminus at US 290.

Alignment T-3 (Travis County)

Alignment T-3 began at Pfluger Lane and traveled south across Pflugerville East Road. Once past this road, the route curved to the southwest, coinciding with Alignment T-2, until a point just south of Killingsworth Road where Alignment T-3 split off to join Alignment T-1 at its intersection with Gregg Road. The route then followed Alignment T-1 adjacent to the M-K-T Railroad right-of-way to the terminus at US 290.

Alignment T-4 (Travis County)

Alignment T-4 began at Pfluger Lane and traveled south across Pflugerville East Road. Once past this road, the route veered to the southeast toward Manor. The route turned to the south before crossing Gregg Manor Road, and then to the southwest before crossing the Harris Branch of Gilleland Creek. It traveled in this southwest direction until it crossed Boyce Lane where it turned back to the southeast and intersected US 290 at a point 2,800 feet east of FM 3177.

2.1.2.2 "Segment B" Preliminary Alignment Alternatives

Alignment N-1 (Travis County)

Alignment N-1 began at US 290 approximately 2,800 feet east of FM 3177. It traveled in a southeast direction toward the intersection of Bloor Road and FM 973. From here N-1 turned southwest along FM 973, passing to the east of Lake Walter E. Long. It followed this line to the southwest, traveling toward the Colorado River before turning to the south to cross the river at a generally perpendicular angle. After crossing the river N-1 continued on to the south towards its terminus at SH 71, just less than one mile east of FM 973.

Alignment N-2 (Travis County)

Alignment N-2 began at US 290 approximately one and one-half miles east of the US 290/US 183 interchange. From there it traveled southeast toward the Giddings-Llano Railroad (GLRR, formerly the Austin-Northwestern Railroad), west of Lake Walter E. Long. Near its crossing of the GLRR, the alignment turned to the south and traveled between the neighborhoods of Colony Park and Colony Meadows before crossing Loyola Lane. Once past Loyola Lane, Alignment N-2 turned east-southeast and traveled parallel to and along Decker Lake Road to Blue Bluff Road. Past Blue Bluff Road, the alignment turned south toward FM 973. It crossed FM 973 merging with and following Alignment N-1 to its terminus at SH 71, just less than one mile east of FM 973.

Alignment N-3 (Travis County)

Alignment N-3 began at US 290 approximately one and one half miles east of the US 290/US 183 interchange. From that point, the alignment traveled southward along the abandoned M-K-T Railroad right-of-way, until it reached the Walnut Creek Greenbelt and crossed Walnut Creek itself. From that point it turned to the southeast to follow FM 969 until its intersection with FM 3177. After the FM 969/FM 3177 intersection, Alignment N-3 turned south and then southeast, continuing in that direction until joining Alignment N-2 at FM 973. These alignments both joined Alignment N-1 east of FM 973 and continued on toward their terminus at SH 71, just less than one mile east of FM 973.

Alignment N-4 (Travis County)

Alignment N-4 began at US 290 approximately one and one half miles east of the US 290/US 183 interchange. From its beginning the alignment coincided with Alignment N-3; along the M-K-T Railroad right-of-way, past the Walnut Creek Greenbelt, and across Walnut Creek. At FM 969, Alignment N-4 continued southward while Alignment N-3 veered to the east. N-4 traveled along the eastern boundary of the Motorola manufacturing facility before veering to the southeast. Traveling southeast it crossed the Colorado River three separate times before turning south-southwest and joining Alignments N-1, N-2, and N-3 near their terminus at SH 71, just less than one mile east of FM 973.

Alignment C-1 (Travis County)

Alignment C-1 began at SH 71, just less than one mile east of FM 973. It traveled southwest briefly and veered slightly to the south after crossing Onion Creek. It then passed through the Deer Wood manufactured home development and near the site of the Del Valle Junior High School before crossing Pearce Lane and veering back to the southwest. C-1 paralleled FM 973 nearly one and one half miles off to the east, passing within 1,000 feet of the new site of Popham Elementary School. C-1 continued southwest across FM 812, veering slightly to the west to join and follow US 183, ending at the intersection of US 183 and Evelyn Road.

Alignment C-2 (Travis County)

Alignment C-2 began at SH 71, just less than one mile east of FM 973. It traveled southwest in more or less a straight line, crossing Onion Creek, passing just to the east of the Timber Creek manufactured home development, crossing FM 812, and joining US 183 near FM 1327. It followed US 183 to the terminus of Alignment C-1 at the intersection of US 183 and Evelyn Road.

Alignment C-3 (Travis County)

Alignment C-3 began at SH 71, just less than one mile east of FM 973. It traveled southwest coinciding with Alignment C-2 until a point approximately one half of a mile north of FM 812. At this point, the alignment veered to the west-southwest, crossing FM 812 and joining FM 973 at McKenzie Road. C-3 then followed FM 973 to its intersection with US 183, where it joined US 183 and followed it to the terminus of Alignments C-1 and C-2 at the intersection of US 183 and Evelyn Road.

Alignment S-1 (Travis and Caldwell County)

Alignment S-1 began at the intersection of US 183 and Evelyn Road and followed US 183 to its intersection at FM 1185, about five miles north of Lockhart.

Alignment S-2 (Travis and Caldwell County)

Alignment S-2 began at the intersection of US 183 and Evelyn Road and generally followed the alignment of S-1 to the intersection of US 183 and at FM 1185. Alignment S-2, however, wove from one side of US 183 to the other, varying from S-1, in order to avoid displacing

certain residences and the Mustang Ridge City Hall and Police Station, located directly east of the intersection of Old Lockhart Road and Laws Road.

2.1.2.3 “Segment C” Preliminary Alignment Alternatives

Alignment A (Caldwell and Guadalupe County)

Alignment A began at the intersection of US 183 and FM 1185 approximately five miles north of Lockhart. It traveled south along US 183, veering to the southwest before crossing CR 221. After crossing CR 221 the alignment veered more to the west, crossing Elm Creek and Plum Creek on its way toward FM 2001. In the vicinity of FM 2001, Alignment A gradually curved to the south. As it curved it crossed a Union Pacific Railroad line (UPRR), FM 2720 and Boggy Creek. Once past Boggy Creek the alignment continued on to the south, crossing US 142, CR's 108 and 109 and several tributaries to Plum Creek. Just prior to its crossing of the West Fork of Plum Creek, Alignment A turned to the southwest. It continued along this route, crossing SH 80, the San Marcos River, and passing to the east of the community of Staples. At its intersection with FM 621, the alignment turned to the west for a brief stretch and then back to the southwest. As it traveled southwest it crossed CR 242, FM 3353, York Creek and several of its tributaries. Prior to crossing CR 147, Alignment A veered more to the south-southwest and eventually, at CR 124, to the south. It traveled south briefly, following CR 123, and then curved to the west at its intersection with FM 2623. It headed west toward SH 123, eventually turning south parallel and to the east of SH 123. It joined SH 123 about one and a half miles north of I-10, and proceeded along SH 123 terminating at its intersection with I-10 in Seguin.

Alignment B (Caldwell and Guadalupe County)

Alignment B began at the intersection of US 183 and FM 1185 approximately five miles north of Lockhart. It traveled south along US 183, crossed Plum Creek and veered off of US 183 toward the southwest. It traveled in this southwest direction across FM 2001 and a UPRR line to US 142. Here the alignment turned to the southeast briefly before turning back to the southwest at CR 218. From here Alignment B briefly followed CR 110 southwest across the Clear Fork of Plum Creek and several other tributaries, and then veered off to cross SH 80 and the San Marcos River toward the intersection with FM 621. Here Alignment B headed south to FM 20, and upon meeting with this road it joined and followed or paralleled it to CR 120. From here Alignment B traveled south to the intersection with I-10 and US 90 east of Seguin.

Alignment C (Caldwell and Guadalupe County)

Alignment C was identical to Alignment B up until its intersection with CR 218 just west of Lockhart. Here Alignment C headed slightly further south before veering south-southwest across the Clear Fork of Plum Creek and CR 215 to FM 20. Alignment C followed FM 20 for a short distance, crossed the West Fork of Plum Creek and then turned south toward the intersection of SH 80 and CR 116. Just prior to the intersection, the alignment turned southwest, crossed SH 80 and eventually joined US 90 near Kingsbury and followed it to the terminus at I-10 east of Seguin.

Alignment H (Caldwell and Guadalupe County)

Alignment H began at the intersection of US 183 and FM 1185 approximately five miles north of Lockhart. It traveled south along US 183, crossed Plum Creek and veered off of US 183 toward the southwest. It traveled in this southwest direction across FM 2001 and a UPRR line to US 142. Here the alignment turned to the southeast briefly before turning back to the southwest at CR 218. From here Alignment H briefly followed CR 110 southwest across the Clear Fork of Plum Creek and several other tributaries, and then veered off to cross SH 80, the San Marcos River and FM 621. The alignment continued on to the southwest across York Creek, turning southeast briefly near FM 3353 crossing FM 20 at a perpendicular angle. Past FM 20, it turned southwest again parallel to CR 230. It turned south once again crossing CR 119 and a UPRR line before joining US 90 and following it to the terminus at I-10 east of Seguin.

Alignment I (Caldwell and Guadalupe County)

Alignment I was identical to Alignment B through its intersection with FM 20. Here, where Alignment B turned southwest along FM 20, Alignment I continued south across York Creek, CR 230, and Brushy Creek. Just south of Brushy Creek the alignment joined Alignment C along US 90 and followed it to the terminus at I-10, east of Seguin.

2.2 ALTERNATIVES CONSIDERED BUT NOT ADVANCED

As noted previously, a number of alternatives were eliminated from further analysis during the alternative development process. This section presents the rationale for eliminating these alternatives. Some of the alternatives considered were dismissed because they failed to meet the purpose of and need for the project. The purpose of the proposed SH 130 project is to relieve congestion on I-35 and other major transportation facilities within the Austin-San Antonio corridor,

improve mobility, and increase accessibility to important public facilities. (Purpose and need are described in detail in **Section 1.0** of this FEIS.) Some of the previously considered alignment alternatives were discarded because they did not offer improvements over similar alignments and were therefore considered redundant. Alternatives that were advanced for further analysis are those that enhanced the project's ability to meet the purpose and need, minimized adverse environmental impacts, or were supported by local governments.

2.2.1 Alternatives That Failed to Meet Project Purpose and Need

Transportation improvements within the Austin-San Antonio corridor are on-going in a continuing effort by local, state, and federal agencies to address the travel needs of this growing region. A variety of improvements are currently underway and others are programmed for future years, including improvements to existing roadways and several traffic congestion reduction programs, policies and projects. This section briefly summarizes these improvements and assesses their potential to assist in accomplishing SH 130's purpose and need. This section concludes with the finding that while contributing to an overall improvement in the performance of the transportation system, these alternatives – either separately or collectively – are not capable of meeting the purpose of and need for the project.

2.2.1.1 Improvements to Existing Roadways

Section 1.0 of this FEIS references efforts already underway by TxDOT to improve traffic flow and safety on I-35. These improvements address deficiencies in on- and off-ramps within urban areas and provide for additional travel lanes in the rural sections of the corridor. However, TxDOT may not be able to cost-effectively widen the urban sections of I-35 due to limitations on available right-of-way.²¹ Additional capacity for I-35 within the Austin metropolitan area could be provided through the construction of a HOV facility, which is discussed further in the following subsection.

Planned improvements to existing roadways in the corridor are included in the CAMPO 2025 Transportation Plan and summarized in **Table 2.2-1**.²²

²¹TxDOT Austin District, 1999.

²²CAMPO's 2025 Transportation Plan covers Travis County, Williamson County and Hays County. The southern portion of the study corridor in Caldwell and Guadalupe County is not served by a metropolitan planning organization. According to Dannenbaum Engineering Corporation, there are no long-range plans by TxDOT or the two

Table 2.2-1 Planned Improvements to Existing Roadways, CAMPO Area

Roadway	Location	Existing 1997	Planned 2025
I-35	North of US 183	FWY6	FWY6/HOV
	South of US 183	FWY8	FWY8/HOV
	South of 15 th Street	FWY6	FWY6/CD4
	South of William Cannon	FWY6	FWY8/HOV
US 79	East of FM 1460	MAU4	MAD6
US 183	East of I-35	MAD6	FWY6
	South of US 290	MAD6	FWY6
	South of Colorado	MAD6	FWY8
	South of FM 973	MAU4	FWY6
Loop 1	North of US 183	FWY6	FWY6/HOV
	South of US 183	FWY6	FWY6/HOV
US 290 (E)	West of US 183	FWY4	FWY6
	East of US 183	MAD4	FWY6
	West of FM 973	MAD4	FWY6
SH 71 (E)	West of FM 973	MAD4	FWY6
	East of FM 973	MAD4	FWY6
FM 685	North of Pfluger Lane	MAU4	MAD6
FM 812	West of FM 973	MAU4	Existing
	East of FM 973	MAU2	Existing
FM 969	West of US 183	MAU4	Existing
	East of US 183	MAU4	Existing
FM 973	South of US 290 (E)	MNR2	MAD4
	South of SH 71 (E)	MNR2	MAD6
FM 1327	West of US 183 (S)	MAU2	Existing
FM 1460	North of FM 3406	MNR2	MAD4
	South of FM 3406	MNR2	MAD4
FM 1825	East of I-35	MAD4	MAD6
FM 3177	North of Decker Lake Road	MAU4	Existing

Legend:

MNR2 = 2-Lane Minor Arterial Roadway, MAU4 = 4-Lane Major Undivided Arterial Roadway, MAD6 = 6-Lane Major Divided Arterial Roadway, FWY6 = 6-Lane Freeway (with frontage roads), FWY6/HOV = 6-Lane Freeway with HOV facility, CD=collector-distributors, Existing = Same as existing 1997.

Source: CAMPO, "2025 Transportation Plan," June 2000.

In addition to improving existing roadways, the CAMPO long-range plan calls for the construction of new roadways such as US 183-A, Loop 1 North extension, and SH 45. The SH 130

counties to improve the roadway network in that area.

MIS traffic analysis (summarized in **Section 1.0**) assumed that this enhanced roadway network and light rail would be in place when it concluded that traffic congestion on I-35, US 183 and Loop 1 would be worse in the future without SH 130. The MIS found that when SH 130 was added to the future transportation network, I-35, US 183 and Loop 1 experienced lower congestion levels. Widening of existing roadways within the study corridor may serve to improve local access and circulation needs, but it will not offer any appreciable benefit to I-35 congestion.

The San Antonio-Bexar County MPO and TxDOT also have efforts underway to improve traffic flow and safety on I-35 from San Antonio to San Marcos. Several projects are already under construction and others are planned. **Table 2.2-2** summarizes the transportation plan for I-35 and northeast San Antonio. In addition to the proposed roadway projects, TxDOT prepared an MIS for the Northeast (I-35) Corridor dated October 28, 1996. The study limits were from US 281 to Loop 1604. The recommendation of the report was to add additional general purpose lanes with express lanes. A preliminary engineering study on I-35 is currently being prepared from US 281 to I-410 to develop schematics for the proposed improvements.

**Table 2.2-2 Planned Improvements to Existing Roadways
San Antonio-Bexar County MPO Area**

Roadway	Location	Existing	Planned
I-35	North of Blanco	Fwy 4	Fwy 6
I-35	North of SH 123	Fwy 4	Fwy 6
I-35	North of FM 306	Fwy 4	Fwy 6
I-35	North of SH 46	Fwy 4	Fwy 6
I-35	North of FM 725	Fwy 4	Fwy 8
I-35	North of Walnut Ave.	Fwy 4	Fwy 8
I-35	North of FM482	Fwy 4	Fwy 6
I-35	North of Walzem	Fwy 6	Fwy 10
I-410	At US 281	Interchange	Direct Connector
I-410	East of Blanco	Fwy 6	Fwy 10
I-410	East of McCullough	Fwy 6	Fwy 10
I-410	East of Nacogdoches	Fwy 6	Fwy 10

EXPY 4 = 4-Lane Expressway (without frontage roads), FWY 6 = 6-Lane Freeway (with frontage roads)

Source: San Antonio-Bexar County MPO.

2.2.1.2 HOV Lane on I-35

The SH 130 MIS also analyzed the annual congestion cost on I-35 in the year 2020 with and without SH 130. The analysis, which used the approved CAMPO transportation model, estimated the annual cost of congestion on I-35 with and without a HOV lane from US 79 in Round Rock to FM 1626 south of Austin. The MIS determined that with SH 130 and the I-35 HOV lane, the annual congestion cost on I-35 in 2020 would be approximately \$22 million. Without SH 130, I-35's annual congestion cost, even with the HOV lane, rose to over \$70 million. The analysis showed that traffic congestion on I-35 can be only partially addressed through the provision of a HOV facility.

In addition to providing only limited congestion relief for I-35, the HOV lane is not designed to address mobility improvements within the corridor east of I-35. The HOV lane is also not designed to improve access to major public facilities other than those located in Austin's central business district. The use of HOV lanes was also addressed in the Northeast (I-35) Corridor MIS in San Antonio. The MIS analyzed the congestion projected for the year 2015 and determined that the use of HOV lanes would not provide the required level of service in 2015. The locally preferred alternative was to add general purpose lanes and express lanes. The use of express lanes will provide flexibility for conversion into other transportation improvements. The locally preferred alternative would also meet the required 2015 level of service.

2.2.1.3 Transportation Systems Management /Travel Demand Management

Transportation Systems Management (TSM) refers to a set of transportation policies or strategies that were first articulated in the 1970s as a means of managing existing highway facilities more efficiently in order to move more vehicles without automatically resorting to widening or new construction. The most prominent TSM strategies in use today include traffic signal timing, improvements in intersection geometry, and the designation of HOV lanes. While still focused on increasing roadway capacity, TSM strategies introduced the idea of relatively low-cost measures that can be implemented primarily within existing roadway rights-of-way.

As transportation planning began to shift from moving vehicles to moving people, a set of strategies called Travel Demand Management (TDM) emerged. The goal of TDM strategies is to reduce the number of vehicles on the road particularly during peak travel periods. This is done through various programs and policies aimed at increasing the number of occupants per vehicle, encouraging motorists to avoid driving during morning, noon and evening "rush hours," and

encouraging people to use alternative modes of transportation for some of their trips. Examples include parking preferences and price breaks for van pools or car pools, creation of HOV lanes for use by buses, car pools and van pools, “flextime” in the workplace to allow people to travel outside the most congested times, and improved transit service, pedestrian and bicycle facilities. Other programs and policies focus on improving peoples’ access to what they need so that not every trip has to involve getting in one’s car and driving long distances. This approach involves the integration of transportation planning with broader urban design and land use initiatives, such as higher densities, mixed land use, and increased use of telecommunications.

These TSM and TDM programs and policies are all strongly encouraged by and made an integral part of the CAMPO long range transportation plan. Their implementation and success is subject to a number of factors including project approvals by government agency sponsors, the degree of employer participation, changes in local land development regulations, and even human behavior and travel preferences. A variety of TSM and TDM measures are currently included in the congestion reduction programs for the Austin and San Antonio areas. They also form part of the long-range multi-modal transportation system plans for the two metropolitan areas.

However, as pointed out in **Section 1.0**, only about 22 percent to 34 percent of the work trips (by county within the study corridor) were by car pool, public transit, bicycle, pedestrian, work-at-home or other non-SOV modes.²³ Over time, efforts aimed at increasing the use of alternative travel modes through the application of various TSM/TDM programs and policies will undoubtedly prove beneficial. Still, these measures alone cannot address the purpose of and need for SH 130. They may succeed in easing traffic congestion on I-35 and other major transportation facilities within the Austin-San Antonio corridor, and thereby may also indirectly increase accessibility to important public facilities. But they cannot improve mobility within the corridor, which is hampered by the physical layout of the roadways. As described previously in **Section 1.0**, the roadway network parallel to and east of I-35 is largely characterized by disjointed two-lane and four-lane roadways resulting in congestion and operating inefficiencies. TSM and TDM measures are not designed to address this type of problem, and therefore cannot offer a complete solution. For the large portion of the traveling public that is expected to continue to rely on private automobiles for their primary mode of travel, TSM and TDM strategies alone will not meet future travel needs. This conclusion is supported by CAMPO’s 2025 Transportation Plan, which recommends the

²³ See **Table 1.1-8**, “Mode of Travel for Work Trips, Persons 16 Years and Older,” U.S. Census Bureau, 1990.

expansion of the roadway system – including construction of SH 130 – in addition to public transportation improvements and other TSM/TDM strategies.

2.2.1.4 Public Transportation

Most of the SH 130 study corridor falls outside the service area of a metropolitan transit authority. Public transportation services within the corridor are primarily provided by social service agencies and by a rural transit provider, the Capital Area Rural Transportation System (CARTS). CARTS serves several counties in the SH 130 study corridor, including Williamson, Travis and Caldwell. In Lockhart, for example, CARTS provides two buses daily that travel fixed routes through the city from 7:00 a.m. to 6:00 p.m., Monday through Friday. CARTS also provides demand response service, which requires a 24-hour advance notification for user service. Patrons can use the service for travel to and from Austin or San Marcos. Medina County Public Transportation provides transit services in Guadalupe County, including demand response services for persons with disabilities. In addition, Seguin receives special service through the Alamo Area Agency on Aging, which provides limited demand response services for senior citizens.

Only one area within the SH 130 study corridor, northeastern Travis County, is presently served by a transit authority, the Capital Metropolitan Transportation Authority (Capital Metro). Capital Metro provides regular fixed-route bus service, special transit service for persons with disabilities, demand-response service, and operates a vanpool program. Long-range transportation plans for the Austin metropolitan area have traditionally assumed an extensive network of public transportation service. Approximately 52 miles of fixed-guideway transit (i.e., light rail transit or busways) are included in CAMPO's 2025 long-range transportation plan. The adopted rail corridors generally emanate from Austin's central business district, extending to the northwest to Leander and to the south, parallel and to the west of I-35 to Slaughter Lane at I-35. They also extended southeast to ABIA. The 2025 plan also calls for the preservation of rail corridors into eastern Travis County and along SH 130 and the M-K-T Railroad Right-of-Way.

Although it is extensive, the public transportation network assumed for the Austin metropolitan area in 2025 is not capable of negating the need for roadway improvements. The travel demand analysis conducted by CAMPO for the long-range transportation plan still shows a need for improvements to I-35 in the Austin area and for the construction of SH 130. There are several reasons why public transportation is not able to meet the purpose and need for SH 130. First, as previously discussed, public transportation accounts for a relatively low percentage of trips, and the long range transportation plan generally assumes the continuation of current travel behavior which

relies heavily on privately-owned vehicles. Second, public transportation has difficulty in cost-effectively serving lower density, suburban and rural areas, as opposed to more densely developed urban areas. Third, the long-range transit plan for the Austin metropolitan area is a radial system centered on improved access to Austin's central business district. The adopted fixed-guideway transit system for 2025 (which is not currently funded) is not designed to address the mobility deficiencies within the mostly suburban and rural corridor east of I-35 and, with the exception of ABIA, is not intended to address access needs of major public facilities within the corridor.

2.2.1.5 Commuter Rail

TxDOT and other governmental agencies in the Central Texas area have conducted studies to determine if commuter rail is a practical and cost effective option for travel between the Austin and San Antonio metropolitan areas. A feasibility study completed in 1999 concluded that operation of a commuter rail system within this corridor is both technically and financially feasible. TxDOT is exploring the development of commuter rail as one of several elements in an integrated transportation system needed for the Austin-San Antonio corridor. The preferred route for the proposed commuter rail line is located within the M-K-T Railroad right-of-way east of I-35 between Georgetown and Round Rock, and the existing Union Pacific Railroad right-of-way west of I-35 between Round Rock and San Antonio. This rail corridor is included in the CAMPO 2025 transportation plan.

The forecasted number of daily boardings reported in the feasibility report – 11,000 per day in the year 2020 – would provide very limited congestion relief for I-35. (As mentioned in **Section 1.0**, daily traffic volumes on I-35 are expected to reach 356,000 vehicles per day in downtown Austin by the year 2025.) Furthermore, because of its route location primarily west of I-35, the commuter rail line is not able to improve mobility within the study corridor east of I-35.

2.2.1.6 Summary of Alternatives That Failed to Meet Purpose and Need

This section examined potential alternatives to constructing SH 130. Many of these alternatives – such as improvements to existing roadways, construction of new roadways, implementation of TSM and TDM strategies, extensive public transportation improvements, and a HOV lane on I-35 – are included in the Austin metropolitan area long-range transportation plan. Although necessary in the broader transportation system, these elements of the CAMPO plan are neither intended nor able to fully satisfy the purpose of and need for SH 130. For the portion of the study corridor that falls outside the boundaries of CAMPO's long range transportation plan,

improvements such as adding travel lanes to I-35 or constructing a commuter rail line will provide only minor benefits to I-35's traffic congestion problem, and will not improve mobility or access in the corridor east of I-35.

2.2.2 Alignments That Were Redundant

Several of the preliminary alignment alternatives presented in **Section 2.1.2** were variations developed by the project engineers (sometimes at the request of public officials or in response to public comments) in search of the optimal route available within certain areas. This led to a situation in which, after further investigation, it was determined that certain alignment options offered no appreciable benefit over other alignments within the same area. That is, they did not 1) appreciably enhance the project's ability to meet the purpose and need, 2) appreciably minimize adverse environmental impacts, or 3) garner local governmental support.

Because only a representative number of the most reasonable alternatives are to be presented and evaluated in the FEIS,²⁴ these redundant alignments are being eliminated from further analysis. This serves to simplify and focus the consideration of social, economic and environmental impacts on a representative number of reasonable end-to-end build alternatives.²⁵ Because they also contribute little or no value to the decision making process for SH 130, the following preliminary alignment alternatives are being eliminated from further consideration. (Please refer to **Figures 2.1-2, 2.1-3 and 2.1-4** for the location of these alignments.)

Alternative alignment W-1, which was primarily the same as alternative alignment W-2 except in the relatively short stretch between I-35 south to CR 110, would have potentially adverse neighborhood impacts and numerous relocations, including a Williamson County maintenance facility;

Alternative alignment W-3, which was primarily the same as alternative alignment W-2 except for the short section between CR 110 and CR 112 (where W-3 passed to the east of the man-made impoundment on McNutt Creek) and from just north of US 79 to Pfluger Lane; this alternative was investigated at the request of an individual property owner and found to be too circuitous;

²⁴ FHWA Technical Advisory T6640.8A.

²⁵ If all of the preliminary alternative alignments presented in **Section 2.1.2** were carried forward for detailed analysis, there would be a total of 1,440 alignment combinations between Georgetown and Seguin.

Alternative alignment W-4, which was primarily the same as alternative alignment W-5 except from just north of CR 102 in Williamson County to the Travis County line, would have potentially adverse neighborhood impacts, including relocations;

Alternative alignment W-6, which was primarily the same as alternative alignment W-5 except for the short distance from I-35 south to FM 971, would have crossed Berry Creek with a potentially adverse effect on the Edwards Aquifer;

Alternative alignment T-1, which was primarily the same as alternative alignment T-3 except from Pfluger Lane south to Gregg Lane, would have potentially adverse neighborhood impacts;

Alternative alignment T-2, which was primarily the same as alternative alignment T-3 except from Killingsworth Lane to Blue Goose Road, would have been inconsistent with the development plans of Samsung Austin Semiconductors;

Alternative alignments N-3 and N-4, which were the westernmost alignments from US 290 south to SH 71; of particular note, the N-4 alignment crossed the Colorado River three times, which posed excessive engineering and environmental constraints;

Alternative alignments C-2 and C-3, which were the westernmost alignments between SH 71 and Evelyn Road, would have required numerous relocations;

Alternative alignment S-1, which was primarily the same as alternative alignment S-2, would have required a higher number of relocations;

Alternative alignment B, which was similar to, and superceded by, alternative alignment H, would have required a higher number of relocations;

Alternative alignment C, the easternmost alignment in “Segment C”, would have potentially adverse neighborhood impacts; and

Alternative alignment I, which was similar to alignments B and H, would have potentially adverse neighborhood impacts.

In summary, these preliminary alignment alternatives failed to provide superior qualities over other reasonable options in the same vicinity. Their elimination enables the FEIS to focus on a set of end-to-end alternatives that adequately represent the range of social, economic and environmental issues surrounding SH 130. The end-to-end primary build alternatives are presented in **Section 2.4**.

2.3 MULTIMODAL AND INTERMODAL STRATEGIES

The MIS recommended that the SH 130 right-of-way provide for HOV lanes, mass transit, pedestrian and bicycle facilities, freight rail, and intelligent transportation systems. The goal to develop SH 130 as a multimodal facility with connections to other transportation modes stems from the 1991 ISTEA legislation that highlighted SH 130 as a priority intermodal project. This section presents the various transportation modes under consideration and summarizes their applicability for inclusion in the proposed SH 130 right-of-way.

2.3.1 HOV

The CAMPO long-range plan assumes that privately-owned, single-occupant vehicles (SOV) represent the highest percentage share of projected traffic on SH 130. Accordingly, all build alternatives feature general purpose travel lanes with SOV as the primary design vehicle. However, as these lanes eventually become congested it becomes increasingly problematic to provide additional capacity if the right-of-way is inadequate to allow for any expansion. Therefore, locating an area within the median of SH 130 for HOV facilities will allow the flexibility to construct additional lanes in the future as traffic levels warrant. Related facilities such as park-and-ride lots and access ramps may also be developed in the future at such time as the HOV lanes are being added.

2.3.2 Mass Transit

Another way to provide for future capacity within the SH 130 right-of-way is to reserve room for a passenger rail transit line. The CAMPO long-range plan calls for the preservation of a rail corridor along the SH 130 corridor. By acquiring adequate space within the right-of-way for both HOV and passenger rail, SH 130 will be better able to accommodate travel demand well beyond the forecast year of 2025. Buses would be able to utilize the HOV lane and passenger trains would operate on the rail line. The build alternatives for SH 130 intersect the publicly-owned Giddings-Llano Railroad line, which runs from Giddings to Llano through downtown Austin. If and

when rail transit service is operated on this line east of Austin, an intermodal connection can be developed between the transit line and SH 130.

2.3.3 Bicycle and Pedestrian

TEA-21 confirms and continues the principle that the safe accommodation of non-motorized users shall be considered during the planning, development, and construction of all Federal-aid transportation projects and programs.²⁶ FHWA's guidance states that to a varying extent, bicyclists and pedestrians will be present on all highways and transportation facilities where they are permitted and it is clearly the intent of TEA-21 that all new and improved transportation facilities be planned, designed, and constructed with this fact in mind.

TEA-21 defines a bicycle transportation facility as "a new or improved lane, path, or shoulder for use by bicyclists and a traffic control device, shelter, or parking facility for bicycles." The definition of a pedestrian includes not only a person traveling by foot but also "any mobility impaired person using a wheelchair." Section 1202 of TEA-21 says that bicycle facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities except where bicycle use and walking are not permitted. Transportation plans and projects shall also consider safety and contiguous routes for bicyclists and pedestrians. Safety considerations may include the installation of audible traffic signals and signs at street crossings.

The inclusion of bicycle and pedestrian facilities within the SH 130 right-of-way has been discussed by TxDOT and potential sponsors of such facilities. Bicycles will be accommodated on the paved shoulders of SH 130 frontage roads (see **Section 2.4.2.2 Design Features Common to All Build Alternatives**). Sections of SH 130 with frontage roads in urban areas may have pedestrian walkways (i.e., sidewalks) within the right-of-way, outside of the frontage road. In other areas where existing or proposed sidewalks would be crossed by the SH 130 right-of-way, an easement would be provided to safely connect the walkway on either side of SH 130. Beyond these instances, additional pedestrian walkways can be added to the SH 130 right-of-way if and when a local sponsor chooses to develop them in cooperation with TxDOT. For example, Austin Metro Trails and Greenways, a local advocacy group, has proposed the development of a potential hike and

²⁶ FHWA, February 1999, "Guidance on Bicycle and Pedestrian Provisions of Federal Transportation Legislation."

bike trail along the abandoned M-K-T Railroad Right-of-way, a portion of which is utilized by SH 130 build alternatives.

2.3.4 Freight Rail

In addition to future HOV and rail transit use of the proposed SH 130 median, consideration was given to whether freight rail could be accommodated.²⁷ Some participants in the MIS process suggested that the Union Pacific Railroad (UPRR), which currently operates freight service within and through the Austin-San Antonio corridor along right-of-way which it owns west of I-35, may desire to relocate its rail line to SH 130. The idea was that by moving to the SH 130 right-of-way, UPRR could avoid some undesirable operating conditions as it moved through the corridor, and their existing line west of I-35 could be converted to passenger rail service. So far, UPRR has made no commitments about relocating to the SH 130 right-of-way.

The proposed SH 130 median will safely and adequately accommodate a freight rail line, although providing for freight rail within the right-of-way is subject to a number of design parameters, including the requirement to build grade separation structures at each point where the railroad must diverge from the highway. The two modes are definitely compatible though, as demonstrated by the current operation of UPRR in the 100-foot median of Loop 1 in central Austin. However, the 103-foot right-of-way required for freight rail operational and safety purposes would preclude using the SH 130 median for any other mode.

2.3.5 Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) represent an array of technology aimed at reducing traffic congestion and improving traffic safety. They include the use of video surveillance cameras and speed and volume detectors for monitoring traffic and detecting traffic incidents such as accidents or vehicle breakdowns. Information from the cameras and detectors is typically monitored at a centralized location, such as a traffic management center. More advanced systems offer remote control of intersection signals and ramp meters, and the ability to communicate information to motorists through roadside changeable message signs, highway advisory radio and television broadcasts, and the Internet.

²⁷High speed passenger rail within the SH 130 right-of-way was also investigated, but was found to be incompatible with all other modes due to its exacting requirements for minimum radii of horizontal and vertical curvature. The SH 130 MIS recommended against further consideration of high speed rail.

The deployment of ITS on SH 130 will help reduce the delays caused by high traffic volumes, accidents and other incidents, and enhance emergency responses. In addition, the use of automatic vehicle identification (AVI) and other electronic payment systems will allow motorists to pay tolls with little or no delay, resulting in reduced congestion in and around toll plazas. These applications would also support the implementation of congestion pricing, which is the practice of charging higher tolls during periods of high demand. Congestion pricing can help maintain good traffic flow and encourage the use of public transportation and other HOV modes.

2.4 ALTERNATIVES CONSIDERED REASONABLE

Eight build alternatives have been identified as feasible for meeting the purpose of and need for SH 130. These are identified as Alternatives 1 through 8, and are depicted in **Figures 2.4-1a, b and c**. **Figure 2.4-1d** shows the build alternatives within the context of the entire SH 130 corridor, from Georgetown to Seguin. Alternative 2 has been identified by TxDOT as the Preferred Alternative. (The rationale for identifying the Preferred Alternative appears in **Section 4.0 Environmental Consequences**.) However, a thorough evaluation has been given throughout the FEIS to all eight feasible build alternatives and to the No-Action Alternative. As mentioned earlier, alternatives advanced for further analysis are those that enhanced the project's ability to meet the purpose and need, minimized adverse environmental impacts, or were supported by local governments.

2.4.1 Description of the No-Action Alternative

The No-Action Alternative represents the case in which SH 130 is not constructed. Other transportation improvements, including those identified in CAMPO's 2025 Transportation Plan, may or may not be constructed, depending on project development and funding availability issues for each such improvement. **Table 2.2-1** provided a list of planned roadway improvements located in the study corridor. In addition to these, CAMPO's long range plan includes transit system improvements and a variety of TSM and TDM measures. All of these improvements comprise the No-Action Alternative.

2.4.2 Description of the Build Alternatives

This section first describes the routes (termini, location, length and cost) of the eight build alternatives. It then describes the design features for SH 130 that are common to all build alternatives.

2.4.2.1 Route Descriptions

The following paragraphs generally describe the routes of each of the eight build alternatives indicating their location with respect to key features of the natural and human environment. For a detailed description of the alignments that comprise each alternative, see **Section 2.1.2**. Overall length and estimated costs for each build alternative are summarized in **Table 2.4-1**.

Alternative 1

Alternative 1 is formed by the combination of preliminary alignments W-2, T-3, N-2, C-1, S-2, and A. It is generally a western route, traveling through portions of Round Rock, west of Lake Walter E. Long, and connecting to I-10 in Seguin.

Alternative 2 (Preferred Alternative)

Alternative 2, the Preferred Alternative, is formed by the combination of preliminary alignments W-5, T-4, N-1, C-1, S-2, and H. This alternative passes east of Round Rock, east of Lake Walter E. Long, and connects to I-10 east of Seguin.

Alternative 3

Alternative 3 is formed by the combination of preliminary alignments W-2, T-3, N-2, C-1, S-2 and H. It travels through portions of Round Rock, passes to the west of Lake Walter E. Long, and connects to I-10 east of Seguin.

Alternative 4

Alternative 4 is formed by the combination of preliminary alignments W-2, T-4, N-1, C-1, S-2, and A. This alternative travels through portions of Round Rock, passes to the east of Lake Walter E. Long, and connects to I-10 in Seguin.

Alternative 5

Alternative 5 is formed by the combination of preliminary alignments W-5, T-4, N-1, C-1, S-2, and A. This alternative travels east of Round Rock, passes east of Lake Walter E. Long, and connects to I-10 in Seguin.

Alternative 6

Alternative 6 is formed by the combination of preliminary alignments W-5, T-3, N-2, C-1, S-2, and A. It travels east of Round Rock, passes to the west of Lake Walter E. Long, and connects to I-10 in Seguin.

Alternative 7

Alternative 7 is formed by the combination of preliminary alignments W-5, T-3, N-2, C-1, S-2, and H. It travels east of Round Rock, passes to the west of Lake Walter E. Long, and connects to I-10 east of Seguin.

Alternative 8

Alternative 8 is formed by the combination of preliminary alignments W-2, T-4, N-1, C-1, S-2, and H. It travels west through portions of Round Rock, passes to the east of Lake Walter E. Long, and connects to I-10 east of Seguin.

2.4.2.2 Alignment Modifications Subsequent to the Public Hearing

Following the February 10, 2000 Public Hearing, several alignment modifications to the eight build alternatives were made by project engineers and planners. Responding to comments made by citizens, property owners, and representatives of local governments, these modifications were made in order to avoid or minimize potentially adverse effects, or in some cases, to achieve a better fit with the local roadway access and circulation system. The following paragraphs describe the alignment modifications. All figures, plates and discussions of the primary build alternatives contained in this FEIS represent the modified alignments. For more information about the SH 130 Public Hearing comments, see **Chapter 8.0 Comments and Coordination**.

Alternatives 2 (Preferred Alternative), 5, 6 and 7 were slightly modified in the vicinity of FM 685 south of US 79.

Alternatives 2 (Preferred Alternative), 4, 5, and 8 were slightly adjusted in the vicinity of Travis County's Northeast Metro Park in order to avoid crossing of the park entrance road. Additional minor adjustments were made to these alternatives in the area south of US 290 to FM 973 northeast of Lake Walter E. Long.

All build alternatives were moved slightly to the west in the area from just north of SH 71 south to US 183.

Alternatives 2 (Preferred Alternative), 3, 7, and 8 were slightly modified between Lockhart and Seguin.

A possible modification to Alternatives 1, 3, 4, and 8 was investigated in the vicinity of Palm Valley Lutheran Church located on US 79 near Round Rock. The most optimal adjustment to the alignment in this area was still unable to avoid adverse impacts on the historic church property. Therefore, no change to the original alignment in this area was made. Alternative 2, the Preferred Alternative, avoids impacts to the church.

Table 2.4-1 Total Length and Estimated Cost of Build Alternatives

Alternative	Length (Miles)	Estimated Construction Cost	Estimated Right-of-Way Cost	Estimated Total Cost
1	92.64	\$1,208,000,000	\$290,000,000	\$1,498,000,000
2*	90.88	\$1,194,000,000	\$257,000,000	\$1,451,000,000
3	92.44	\$1,223,000,000	\$290,000,000	\$1,513,000,000
4	91.41	\$1,182,000,000	\$256,000,000	\$1,438,000,000
5	91.08	\$1,179,000,000	\$257,000,000	\$1,436,000,000
6	92.31	\$1,205,000,000	\$291,000,000	\$1,496,000,000
7	92.11	\$1,220,000,000	\$291,000,000	\$1,511,000,000
8	91.21	\$1,197,000,000	\$255,000,000	\$1,452,000,000

*Preferred alternative

Table 2.4-1 Total Length and Estimated Cost of Build Alternatives
- continued -

- Note:
1. These are preliminary cost estimates and subject to revision.
 2. All costs shown in 2000 dollars, rounded to the nearest million.
 3. These cost estimates are based on the ultimate typical section, i.e., 6-mainlanes, and 6-lane frontage roads (where proposed).
 4. Right-of-way costs include utility adjustments.
 5. Construction of the Preferred Alternative as a toll road would require an additional \$77 million for turnpike construction elements including mainline barrier plazas (operations buildings and employee parking), ramp plazas and toll collection equipment.

Sources: Carter & Burgess, June 1998, "Engineering Summary Report"; Earth Tech; and Dannenbaum Engineering Corporation.

2.4.2.3 Design Features Common to All Build Alternatives

All of the SH 130 Build Alternatives have the same essential design features, as shown in **Figure 2.4-2**. The design for SH 130 *without* frontage roads calls for a usual right-of-way width of 349 feet, with either two or three 12-foot travel lanes in each direction. There are ten-foot inside and outside shoulders, and a 103-foot median. Potential future bicycle trails may be provided (by others) within and adjacent to the right-of-way. A variable width scenic easement may be provided by others (i.e., local governments) outside and immediately adjacent to the right-of-way on one or both sides.

The design *with* frontage roads calls for a usual right-of-way width of 529 feet, with three 12-foot mainlanes in each direction and three 12-foot frontage road lanes (one-way) in each direction. The mainlanes will have ten-foot inside and outside shoulders, while the frontage roads will have a four-foot inside shoulder and an eight-foot outside shoulder. Bicycle traffic may be accommodated on the eight-foot outside shoulder of the frontage roads. In urbanized areas, sidewalks may also be provided. There will be a 103-foot median. Like the design without frontage roads, potential future bicycle trails may be provided (by others) within and adjacent to the right-of-way. Scenic easements may be provided outside the frontage roads at the option of local governments or others.

These design elements are called "typical" because they represent the standard configuration for SH 130 for most of its length. However, certain locations may require additional right-of-way in order to accommodate grade separations and interchanges with existing and proposed roadways, as well as toll plazas.

Four aspects of the design are of particular interest and are further discussed in the following subsections.

Median Reservation

The alignment and proposed median width for SH 130 have been designed to accommodate future transportation needs. These can include general multi-purpose lanes, HOV facilities, light rail transit, or some combination of these modes. The median can also accommodate freight rail, but this would preclude the other options. Although no plans currently exist for the inclusion of other modes of transport, the proposed right-of-way will allow for their future development if so desired. Additional environmental documentation would be prepared as part of the development process for any proposed future transportation facilities in the SH 130 median.

Toll Road Designation

The SH 130 build alternatives are all considered to be candidate toll facilities. The toll road designation for SH 130 is made for funding purposes for reasons explained in the following paragraphs. The Texas Turnpike Authority is continuing to assess the viability of designating SH 130 as a toll road and will make a decision on such a designation sometime after the Record of Decision for this Environmental Impact Statement (EIS). In order to preserve the option of developing SH 130 as either a toll or toll-free facility, this EIS provides information about both options. The following paragraphs explain the reasons for pursuing a toll designation and describe the toll-related features that would become part of SH 130 if developed as a toll road. **Section 4.0, Environmental Consequences**, discloses the social, economic and environmental impacts of SH 130 under a toll-free scenario, and also discloses these impacts for the Preferred Alternative under a toll-road scenario.

Developing a highway as a toll road can save both time and money. The use of toll-financed revenue bonds – which are sold to private investors at competitive interest rates – allows a project to be funded much more quickly than one which has to compete for limited tax dollars. Significant cost savings can also be achieved by avoiding the inflationary effect resulting from years of deferred completion.

Recent experience in Texas demonstrated the advantages of a toll road financing approach versus conventional funding. A case in point is the conversion of SH 190 in Dallas to the

President George Bush Turnpike.²⁸ By 1995, TxDOT had estimated that 31 years and a total of \$317 million had been invested in the development of SH 190. TxDOT estimated that it would still need an additional \$397 million to complete the project, at a time when the TxDOT Dallas District Office was facing a \$9.4 billion revenue deficiency for transportation projects included in their Mobility 2010 program. TxDOT estimated that it would likely be the year 2015 before SH 190 would be completed using conventional funding methods. By turning the project over to the Texas Turnpike Authority (and subsequently to the North Texas Tollway Authority), TxDOT estimates that the full freeway will be built by 2003 at a cost savings to the State of \$292 million.²⁹

The decision to develop SH 130 as a toll road candidate was made in order to take advantage of the potential savings in both time and money, and in the desire to fulfill the project's purpose and need within the shortest possible time frame. There are, however, certain ramifications of the toll road approach. The imposition of tolls will result in less traffic on SH 130. As a result, other roadways will experience higher traffic volumes than they would under the non-toll road scenario. The benefit to I-35, for example, will be somewhat diminished as a result of less traffic on SH 130. Commercial truck traffic is particularly sensitive to transportation costs, of which tolls represent one type. Travel time is also a cost. Depending on the time of day and level of congestion on I-35, SH 130 – even with the added toll expense – may offer a faster and therefore most cost-effective route for commercial trucks traveling through the Austin-San Antonio corridor. More information about the potential traffic impacts of the SH 130 alternatives is presented in **Section 4.0 Environmental Consequences**.

Another ramification of the toll road designation is the requirement for incorporating toll plazas and toll booths into the right-of-way. The purpose of the plazas and booths is to provide a means of collecting tolls to financially support the construction, operation, and maintenance of the toll road. Toll plazas come in various sizes and types. For example, barrier plazas – which are located across the mainlanes – will have an operations building, personnel/equipment tunnels, and personnel parking facilities.

Generally, toll plazas are designed to be easy, safe and convenient for the motorist. An effective design allows the fastest traffic to travel through the innermost lanes of the barrier plaza

²⁸ Only the mainlanes of SH 190 comprise the turnpike; SH 190 frontage roads are considered part of the state highway system rather than part of the toll road.

²⁹ Kerry C. Miller, P.E., 1998. Mr. Miller was a TxDOT Project Manager during the conversion of SH 190 to the President George Bush Turnpike.

via the use of automatic vehicle identification (AVI) technology. Automatic coin machine (ACM) users will be the next level in the middle lane(s), and the change made/receipts transactions will be in the outermost lane(s). The arrangement of the lanes on the ramp plazas is in opposite order with the faster traffic on the outside to facilitate exit from the turnpike for AVI participants. **Figure 2.4-3a** is a drawing of a typical multiple-lane barrier plaza, with attended booth lanes, ACM lanes, and AVI lanes. The figure also shows the operations building and associated parking lot. Typical layouts for mainline and ramp toll plazas are shown in **Figure 2.4-3b**. The drawing and typical layouts are shown for conceptual purposes only. The actual design of the toll collection facilities may differ from that depicted.

TTA has identified tentative locations of proposed toll plazas for the SH 130 build alternatives. These locations – shown on **Figures 2.4-4a, b, and c** – are preliminary and subject to change.

Frontage Roads

In most areas, SH 130 will be constructed without frontage roads (i.e., mainlanes only). Access to the mainlanes will be controlled, meaning that vehicles may enter and exit the highway only at on-and off-ramps. However, in certain areas the location of the highway right-of-way will sever access to particular parcels of land, leaving no other means of property access. In these instances, frontage roads will be constructed in order to restore property access. It is TTA's intent to minimize the construction of frontage roads along SH 130. However, frontage roads will be provided when necessary to restore access to adjacent properties. In addition, frontage roads will be considered when requested by local elected officials, provided they are (1) consistent with official local or regional transportation plans, (2) paid for by others, and (3) do not negatively affect toll revenues if the facility is constructed as a toll road. The anticipated locations of frontage roads for the primary build alternatives are shown on **Figures 2.4-4a, b and c**.

Actual construction of proposed SH 130 will be accomplished in phases. The frontage roads, where required, may be constructed first depending on funding and anticipated traffic volumes. The proposed roadway may be initially constructed with fewer lanes than the ultimate facility, particularly if constructed as a toll road. Additional capacity would be added as the traffic and conditions warrant.

Scenic Easements

The subject of scenic easements for SH 130 was originally associated with a desire to enhance the visual quality of the highway. The MIS refined the issue to include consideration of scenic easements as a way to preclude development along the right-of-way. The MIS suggested that since right-of-way acquisition will require the involvement of local governments, they should take the leadership in deciding when and where to use scenic easements. The MIS noted that these easements will have an effect on the adjoining properties and are very site specific. Also, CAMPO's long range plan recommended that scenic easements be considered along SH 130 based on input from local governments.

One of the transportation objectives for SH 130 previously mentioned was that an alternative must limit the ability of the proposed project to encourage land development in unincorporated areas (i.e., avoid promoting "urban sprawl"). While TxDOT has no authority to determine or control land use and development, new location highways such as SH 130 typically result in providing opportunities for land development. More information about secondary impacts of the proposed build alternatives is contained in **Section 4.0 Environmental Consequences**. Because the responsibility for overseeing land development rests with local cities and counties, the burden of either encouraging or discouraging development along SH 130 is partially born by the cities and counties which have the authority to do so.

By including scenic easements in the SH 130 build alternatives as an option available to local governments, these entities have the ability to stipulate where scenic easements are to be located. Cities and counties that desire to employ the use of scenic easements as a growth management tool will be able to acquire these easements during the right-of-way acquisition phase of project development.

3.0 AFFECTED ENVIRONMENT

This section of the SH 130 FEIS describes the existing social, economic, and environmental setting for the area affected by the proposed alternatives. The description is limited to data, information, issues, and values which will have a bearing on possible impacts, mitigation measures, and on the identification of a preferred alternative. Assessments of the potential impacts of each alternative, including the No-Action Alternative, on the existing social, economic, and environmental setting are presented in **Section 4.0 Environmental Consequences**.

3.1 LAND USE

This section describes the SH 130 study corridor in terms of its historical development patterns, existing and proposed land uses, and local government plans and policies. The SH 130 study corridor is defined as portions of Williamson, Travis, Caldwell, and Guadalupe counties encompassed by an area ranging from approximately one to eight miles wide and extending approximately 91 miles in length from I-35 at SH 195 north of Georgetown, in Williamson County, to I-10 near Seguin, in Guadalupe County (see **Figure 1.1-1** in **Section 1.0 Purpose and Need**). It includes portions of the corporate limits and/or the extra-territorial jurisdictions (ETJs)³⁰ of Georgetown, Round Rock, Pflugerville, Austin, Mustang Ridge, Lockhart and Seguin (see **Figures 3.1-1a, b, and c**). The land uses within the corridor are identified by category (Residential, Commercial/Industrial, Public Facility, Park/Recreational Facility, School, Church, or Cemetery) on **Plates 1-1 through 1-46 Human Environment & Flood Plains** in **Appendix A** of this FEIS.

3.1.1 Historical Development Patterns

Settlement within the four-county area began roughly in the 1820s and 1830s with colonists of the Stephen F. Austin land grant. Early agricultural activity consisted mainly of growing crops and raising livestock to provide for the basic needs of the settlers. The first major crops were cotton and pecans which, after the introduction of railroads into the area beginning in

³⁰The Municipal Annexation Act of 1965 provides Texas cities with a buffer zone known as the extra-territorial jurisdiction (ETJ). This zone is outside of the city limits, and can extend one-half to five miles, depending on the city size. Areas in the zone are “reserved” for future annexation. Within its ETJ, the city has authority to review subdivisions for compliance with the city’s subdivision ordinance and authority to issue building permits to assure compliance with building codes. Territory within the boundaries of the city’s ETJ are established by state law, by ordinance, or the resolution of Council approving an agreement with another municipality that allocates extraterritorial jurisdiction between a city and another municipality.

about 1875, were marketed outside the counties in which they were grown. With the advent of barbed wire, ranching became the predominant feature of the local economies.

During the livestock era of the late 19th century, Lockhart served as a major resting stop for cattle drives since the city was located just north of the convergence of two trails originating in south Texas. The oil era began in the early 1920s with the discovery of oil in eastern Williamson County and also in Caldwell and Guadalupe counties. Oil exploration spread in the area and major oil fields were soon developed.

More recently, development in the area has been widespread, with the most rapid urbanization occurring in southern Williamson and northern Travis counties. Much of the growth has concentrated along the major north/south transportation routes in the area, namely I-35 and US 183. The development in this portion of the SH 130 corridor has been mainly residential and commercial, with the cities of Georgetown, Round Rock, and Pflugerville being transformed from small rural communities into urban and suburban areas capable of sustaining major commercial and business enterprises. Many of the residents in these communities still commute to Austin where the majority of the region's jobs are located and will continue to do so despite the growth and influx of commerce into Williamson County.

The southern portion of the corridor has seen its development limited primarily to the incorporated cities of Lockhart and Seguin, with some urbanization also occurring in the smaller communities of Staples and Geronimo. Today, livestock, crops, and oil/gas production all play important roles in land use throughout this portion of the corridor.

Another area in the corridor which has experienced a high rate of development is the land adjacent to the new Austin-Bergstrom International Airport, in southeastern Travis County. The development in this area has been mainly commercial and industrial, with the introduction of several hotels, restaurants, rental car agencies, gas stations, air cargo transport services, and warehouses.

3.1.2 Existing and Proposed Land Uses

The following paragraphs provide an overview of the region, followed by a discussion of land uses (urban, agricultural, and recreational) within the SH 130 corridor that are in the vicinity of the proposed build alternatives.

3.1.2.1 Regional Overview

A review of 1992 Broad Cover/Land Use as determined by the Natural Resources Conservation Service (NRCS) reveals that a large majority of the land in Williamson, Travis, Caldwell, and Guadalupe counties is in agricultural use. These agricultural lands generally include either croplands, pasturelands, or rangelands and account for approximately 80 percent of the total land area in the four counties. Urban uses account for roughly 15 percent of the total land in the area, while the remaining five percent is made up of federally owned lands, streams, water bodies, or other miscellaneous uses.

3.1.2.2 Land Uses Specific to the SH 130 Corridor

The existing land uses within the SH 130 corridor were initially identified through interpretation of aerial photography, supplemented by the use of public mapping sources, such as TxDOT county highway maps, United States Geological Survey (USGS) topographic maps, and municipal planning documents. These preliminary assessments were verified and further refined through field investigations by project staff. In addition, proposed subdivisions within or near the proposed rights-of-way of the build alternatives which had final plat³¹ approval as of Spring 2000, were identified through city and county databases.

As mentioned above, the majority of the land in the corridor has traditionally been used for farming and ranching. More recently, development near Georgetown, Round Rock, Pflugerville, Austin, Lockhart, and Seguin has increased the amount of urbanized land in the corridor. Still, the majority of the land in the corridor is used for agricultural purposes.

Urban Development

The following discussion of urban land uses in the SH 130 corridor is organized according to the representative Human Environment & Flood Plains plates (color aerial photographs which have been digitally enhanced) in **Appendix A** and includes those uses associated with urban development such as residential areas, commercial/industrial sites, public facilities, community

³¹A final plat is a drawing of a subdivision intended for recordation in the plat records of the county in which the subdivision is located. Final plat submittal will normally be consolidated with construction plan/development permit submittal. A final plat requires a preliminary plan and concurrent construction plans for streets and infrastructure of the Land Development Code. The preliminary plan must be approved prior to the final plat approval.

facilities (i.e., schools, churches, cemeteries, etc.), and transportation corridors. It is not meant to be a complete inventory but rather an overview of the major urbanized uses in the corridor that may potentially be affected by the proposed action. The plates also indicate those locations where a final plat for a proposed subdivision (which could be for either residential or commercial development) has been recorded as of the Spring of 2000.

Plates 1-1 through 1-15

The urban development in this section from the northern terminus south to US 290 includes mostly residential and commercial uses, with some manufacturing, industrial, and community facilities as well. It consists of land uses within portions of the corporate limits or ETJs of Georgetown, Round Rock, Pflugerville, and Austin.

Residential land uses in this area generally consist of single-family homes in suburban and rural areas, with structures ranging from wood-frame, to brick, to manufactured style. Many of the residences, particularly in the more rural areas, are on large-acre ranch or farm lots and include related structures such as garages, barns, sheds, or prefabricated storage buildings. The named residential developments³² in this area include: the Live Oaks at Berry Creek RV park, along I-35 south of Berry Creek (**Plate 1-1**); Crystal Knoll Terrace, a collection of houses in the vicinity of CR 152 and CR 151 north of the Pecan Branch of the San Gabriel River and Pecan Branch North, a new addition of houses along FM 971 (**Plates 1-1 and 1-2**); Churchill Farms, Indian Creek and Dove Springs, three subdivisions to the south of SH 29 (**Plates 1-2 and 1-3**); Bell Meadows, a newer development along CR 105 (**Plate 1-3**); Saddlebrook Estates, located both north and south of Kippen Road (CR 113) (**Plate 1-6**); Chandler Creek and Apache Oaks, both along FM 1460 (**Plate 1-6**); Forest Creek, a large subdivision south of US 79 (**Plate 1-7**); South Creek, Round Rock Ranch, Rolling Ridge, High Country, Morningside Meadows, Bradford Park, and Springbrook, all neighborhoods and subdivisions with continuing development found both north and south of Gattis School Road (**Plate 1-8**); Steed's Crossing, an ongoing development along the east side of FM 685 just south of the Williamson/Travis County line (**Plate 1-9**); Bohl's Place and Gatlinburg, two older neighborhoods adjacent to Pecan Street (**Plate 1-11**); Boulder Ridge, a new manufactured home

³²The sources used to obtain the names of subdivisions and neighborhood developments include tax plats, city road maps, street guides, and field investigations by project staff. In some cases the sources conflicted with each other and with the information gathered through the site visits; therefore the list of named subdivisions in the project corridor may include unintentional omissions or differing nomenclature. Further, it is understood that not all residences are part of a named subdivision; however, due to proximity, and for the purposes of analysis, such residences may be considered part of the neighborhood to which they are adjacent.

development along Killingsworth Lane (**Plate 1-11**); Branch Creek Estates, a dense manufactured home development along Dessau Road just northwest of the Samsung Austin Semiconductor manufacturing facility (**Plate 1-13**); and Chimney Hills, an older subdivision adjacent to US 290 (**Plate 1-15**).

The commercial uses in this area are scattered throughout the corridor. North of US 79 there are a few individual sites located along thoroughfares or frontage roads, or adjacent to residential areas. South of US 79 there are individual sites as well as a few larger concentrations of businesses and commercial sites associated with the larger subdivisions or residential developments, such as the Forest Creek area (**Plate 1-7**) or the Steed's Crossing area (**Plate 1-9**).

The industrial land uses in this area include a few scattered sites, but overall this constitutes a very small percentage of the total land use in the corridor. The major sites include: a Williamson County maintenance yard south of the Churchill Farms neighborhood (**Plate 1-3**); the Samsung Austin Semiconductors manufacturing facility, north of US 290 and east of the abandoned M-K-T railroad right-of-way (**Plate 1-13**); and a large Travis County landfill adjacent to the north side of US 290 (**Plate 1-15**).

The community facilities in this area, which include churches, schools and cemeteries (historic cemeteries are further discussed in **Section 3.8.4 Historic Cemeteries**, and in the **SH 130 Historic Buildings Report** under separate cover) are the Heritage Baptist Church and the Georgetown Memorial Cemetery, located directly across from one another at the intersection of FM 971 and CR 152 (**Plate 1-2**); the Georgetown Church of the Nazarene, north of SH 29 (**Plate 1-2**); Cooper Elementary School and Katy Middle School (**Plate 1-2**); Double File Trail Elementary School, in the Chandler Creek neighborhood along FM 1460 (**Plate 1-6**); the new Hutto High School, at the southeast corner of the intersection of FM 685 and US 79 (not shown); the Palm Valley Lutheran Church and Cemetery, north of US 79 (**Plate 1-8**); the Camp Doublecreek Summer Day Camp and Gattis Elementary School, both located near the Round Rock Ranch subdivision north of Gattis School Road (**Plate 1-8**); the Fellowship at Forest Creek, a church near the Bradford Park subdivision south of Gattis School Road (**Plate 1-8**); and the Mercy of God Prayer Center, along Yager Lane across from the Samsung facility (**Plate 1-13**).

The public facilities found within this stretch of the SH 130 corridor include a Round Rock water storage facility along the M-K-T right-of-way, south of US 79, and the Round Rock Fire Station adjacent to the north side of Gattis School Road (**Plate 1-8**); the Pflugerville Wastewater

Treatment Facility on Gilleland Creek north of Killingsworth Lane (**Plate 1-11**); and a few electric substations.

There is also a considerable amount of proposed or platted development within this portion of the corridor, much of which may lie in the path of one more of the build alternatives. This planned development may include residential subdivisions, commercial sites, or possibly mixed-use developments. Some examples of this planned development include Star Ranch, a golf course community currently being developed along the west side of FM 685 (**Plate 1-9**) and the Hidell Addition, a residential subdivision at the intersection of Cameron Road and Gregg Manor Road, the Meadows at Trinity Crossing, a commercial site planned just to the southeast along Gregg Manor Road, and the Patrick Addition, another residential area planned north of Gregg Lane, east of the M-K-T right-of-way (all on **Plate 1-12**).

The existing transportation network in this area includes roadways, railways, and airfields, and it services residents, businesses, and employees in the corridor as well as the region as a whole. The major north/south roadway facility, carrying the majority of the region's traffic, is I-35, while several other minor north/south arteries, like FM 1460 on the west and FM 685 on the east, serve several residential and commercial areas in the corridor. The east/west traffic traveling to and from Georgetown generally uses either FM 971 or SH 29, while US 79 services traffic traveling to residential or commercial areas in the eastern portions of Round Rock, Hutto, Taylor or points beyond. US 290 is the major east/west roadway, servicing residential and commercial areas in the corridor, as well as destinations outside the corridor. These larger facilities are supplemented by several county roads and residential collector streets. Union Pacific Railroad owns and operates an active freight line adjacent to US 79.

Plates 1-16 through 1-29

Due to its proximity to the city of Austin, urban development in this stretch of the study corridor, from US 290 south to FM 1185, is somewhat more prevalent than in the northern stretch. It includes residential and commercial development as well as large industrial and manufacturing facilities and major landmarks. In this stretch, the SH 130 corridor crosses both the corporate and ETJ limits of Austin.

The residential development in this area includes many family homes on large ranch or farm lots, as well as several single-family type neighborhoods and subdivisions. The named subdivisions or neighborhood developments in this area include: Colony Park and Colony

Meadows, along the north side of Loyola Lane, and the Gardens of Decker Lake across from the Travis County Exposition and Heritage Center (**Plates 1-17 and 1-19**); Winding Trails, a collection of homes along Hog Eye Road southeast of Lake Walter E. Long (**Plate 1-18**); The Meadows at Trinity Crossing, a large development along the south side of Loyola Lane (**Plate 1-19**); Imperial Valley, a neighborhood located on both sides of Webberville Road (**Plate 1-19**); Garden Valley, a small neighborhood along FM 973 (**Plate 1-22**); and Timber Creek and Deer Wood, two manufactured home developments along the north side of Pearce Lane (**Plate 1-23**); and an expanding subdivision known as Moore's Crossing just west of Popham Elementary School (**Plate 1-23**). The remainder of the residential development in this area includes several farmsteads and ranches in unincorporated areas, as well as the more dense developments in places such as Mustang Ridge and the Maha Loop community.

The commercial uses within this portion of the corridor are generally limited to either scattered individual sites or occasional groupings of small markets or retail centers along major travel routes such as US 183, FM 969, and FM 973. There are likewise a few scattered industrial or manufacturing facilities within the corridor. The most distinguishable are the Motorola (not shown) and Tracor electronics manufacturers along US 183 (**Plate 1-19**) and the several sand and gravel mining operations ongoing along the Colorado River (**Plate 1-21**).

Community facilities found in this area include several churches, schools, and cemeteries, and the Del Valle South Rural Community and Health Center (**Plate 1-22**). The schools in this portion of the corridor include: Manor High School, along US 290 (**Plate 1-16**); Lyndon B. Johnson High School, located near the intersection of US 183 and Springdale Road (**Plate 1-17**); Barbara Jordan Elementary, along Johnny Morris Road (**Plate 1-17**); Decker Elementary, located adjacent to the Decker United Methodist Church and Cemetery along FM 3177 (**Plate 1-17**); Del Valle High School and Junior High north of Pearce Lane (**Plate 1-23**); and Popham Elementary along Elroy Road (**Plate 1-23**). Churches in the area include the Decker Free Church (**Plate 1-16**) and the aforementioned Decker United Methodist Church (**Plate 1-17**). Cemeteries include one adjacent to the Decker Free Church (**Plate 1-16**), the one adjacent to the Decker United Methodist Church (**Plate 1-17**), Roger Hill Cemetery, along FM 969 (**Plate 1-19**), Hornsby Cemetery, west of the intersection of FM 969 and FM 973 (**Plate 1-21**), San Jose Cemetery, along San Jose Road south of Austin-Bergstrom Airport (**Plate 1-24**), and Guadalupe Cemetery, along US 183 (**Plate 1-28**).

This portion of the corridor also includes several public facilities. The City of Austin maintains the Decker Creek Power Plant along FM 3177, adjacent to Lake Walter E. Long (**Plate**

1-17), as well as four separate wastewater treatment facilities: the Walnut Creek Wastewater Treatment Plant (WWTP) at Walnut Creek and FM 969 (**Plate 1-19**); the Govalle WWTP near US 183 and the Colorado River (not shown); the Hornsby Bend WWTP near FM 973 and the Colorado River (**Plate 1-22**); and the South Austin Regional WWTP immediately west of the confluence of Onion Creek and the Colorado River (**Plate 1-22**). There is also a closed City of Austin landfill located at the northeast corner of FM 812 and FM 973 (**Plate 1-23**). Travis County operates a correctional facility south of FM 969 (**Plate 1-22**). Another public facility in this area is the Travis County Exposition and Heritage Center adjacent to FM 3177 near Lake Walter E. Long (**Plate 1-19**). The most prominent public facility in this portion of the corridor is the Austin-Bergstrom International Airport, opened in May 1999 and located adjacent to SH 71 and US 183 (**Plate 1-22**). The City of Mustang Ridge City Hall and Police Station is adjacent to US 183 (**Plate 1-27**).

Examples of the proposed development in this portion of the SH 130 study corridor include the Horse Ranch mixed use development along FM 973 and US 290 northeast of Lake Walter E. Long (**Plate 1-16**); a large planned commercial site known as Industrial Group on Johnny Morris Road along the Giddings-Llano rail line (**Plate 1-17**); the small Hermann's Sons commercial site platted near the intersection of Hog Eye Road and Decker Lake Road (**Plate 1-19**); and a large residential development known as Good Land Farms located south of Pearce Lane along Ross Road (**Plate 1-23**).

The existing transportation network in this portion of the corridor includes several major highways, a railway, and the Austin-Bergstrom International Airport. The major highways include the north-south running US 183, and the east-west running US 290, SH 21, and SH 71. Other roadways include several Farm-to-Market roads such as FM 3177, FM 969, FM 973, FM 812, and FM 1185. These larger facilities are supplemented by county roads and residential collector streets. The Giddings-Llano Railroad line, a low-activity freight line owned by the Capital Metropolitan Transportation Authority, also runs through this area.

Plates 1-30 through 1-46

Urban development in this stretch of the corridor, from the intersection of US 183 and FM 1185 to I-10, has generally been limited to Lockhart and Seguin, and, while the corridor does extend into the corporate limits of these cities, extensive urbanization is not encountered.

Residential subdivisions within this area include Cardwell and Oak Trails, located southeast of the intersection of US 183 and FM 1185 (**Plate 1-30**); Oak Village North and Country

Acres located between the SH 123 Bypass and US 90, north of I-10 (**Plates 1-42 and 1-46**); and Sunrise Acres and Deerwood Circle located southeast of the I-10/US 90 intersection (**Plate 1-42**). Residential development throughout the remainder of the area consists of clusters of homes within the smaller communities of Staples, Geronimo, and Weinert as well as scattered homesteads within the framework of farms throughout the area.

Commercial land uses here include a broad range of structures and uses. With the exception of agricultural-related operations and central business districts within the city limits of Seguin and Lockhart, the bulk of the area's commercial land uses are most prominent along primary roads within or near communities. Commercial land use within the corridor is concentrated along US 90, I-10, and the SH 123 Bypass north of Seguin, and along US 183 north of Lockhart. Commercial land uses in these areas include primarily local and highway travel oriented service establishments (food stores, convenience stores, gas stations, personal services, hotels, business services, etc.).

Community facilities within this portion of the corridor include several churches and cemeteries, as well as new high school under construction on the west side of Lockhart (**Plate 1-33**). The churches in the area are the First Assembly of God located on US 183, north of Lockhart (**Plate 1-30**); a tabernacle associated with the San Isidro Cemetery located west of SH 80 (**Plate 1-36**); and Canyon View Baptist Church located on FM 20, north of US 90 (**Plate 1-42**). Cemeteries include Nelly Cemetery, located south of CR 221 and west of US 183 (**Plate 1-30**); Cardwell/Miscenheimer Cemetery located on CR 214 (**Plate 1-31**); San Isidro Cemetery located west of SH 80 (**Plate 1-36**); Wade Cemetery and Jechow Cemetery both located on CR 214A (**Plate 1-38**); Ilka Cemetery located on FM 20, north of US 90 (**Plate 1-42**); and numerous unnamed cemeteries. In addition, a Caldwell County equipment maintenance yard is located on FM 2720 (**Plate 1-32**) and a new fire station is proposed at the SH 123 Business/Bypass intersection (**Plate 1-46**).

Land uses associated with oil and gas production occur primarily in the northern portion of this area between Staples and Lockhart. Although these natural resources are an important part of the economy of the region, the facilities associated with this type of exploration consist primarily of scattered rigs found in pastures. More densely concentrated oil operations are more common in the larger oil fields south and east of the SH 130 corridor.

There are two proposed residential developments in this portion of the corridor. One is the Glenewinkel Road Estates, east of SH 123 (**Plate 1-45**), and the other is FM 20 Estates, also east of SH 123 (**Plate 1-46**).

The existing transportation network in this southern portion of the SH 130 corridor is a mix of rural county and farm-to-market roads, city streets and thoroughfares, and major state and federal highways, railways, and airfields. Major transportation arteries within this area include I-10, US 183, US 90, SH 142, SH 80, SH 123, FM 2720, and FM 20.

The area is served by Union Pacific Railroad lines. One line crosses the corridor west of Lockhart before traversing the city. The other line passes through Seguin and crosses the corridor approximately two and one half miles north of I-10. Two FAA-registered airfields are also located within the corridor and include the Lockhart Municipal Airport south of Lockhart, and the Randolph Air Force Auxiliary east of Seguin (not shown).

Agricultural Uses

Despite the historical and continuing urbanization of land in the corridor, agriculture constitutes the major land use. The leading crops produced in the corridor include grain sorghum, cotton, wheat, corn, and pecans. Other agricultural activities include the raising of beef and dairy cattle, horses, hogs and goats.

Much of the corridor contains “important farmland soils” according to the Natural Resources Conservation Service (NRCS). Coordination with the NRCS concludes that approximately 88 percent of the farmable land in Williamson, Travis, Caldwell, and Guadalupe counties is subject to the Farmland Protection Policy Act (FPPA). Forms AD-1006, found in **Appendix B**, depict NRCS’ assessment of the conversion of these lands to transportation uses as a result of the proposed action. Under FPPA, “sites that receive a Farmland Conversion Impact Rating combined score of less than 160 points will need no further consideration for protection against conversion activity. In addition, sites that receive a combined score of less than 160 points are considered as ‘farmland committed to or already in urban development’.”

Parks, Recreational Lands and Recreational Facilities

There are several publicly owned (existing and proposed) parks and recreational facilities in the corridor, including: Old Settlers Park at Palm Valley, a 440 acre, multi-purpose recreation area located just north of US 79 (**Plate 1-6**); Travis County Northeast Metropolitan Park along Killingsworth Lane (**Plate 1-11**); Lake Walter E. Long Metropolitan Park (**Plates 1-16 through 1-19**); Walnut Creek Park, comprising 85 acres located along Johnny Morris Road west of Lake Walter E. Long Park (**Plate 1-17**); Colony Park, a 27.9 acre unimproved and unmaintained parcel

along Loyola Lane (**Plates 1-17 and 1-19**); Travis County Park, another unimproved parcel between FM 973 and Blue Bluff Road approximately 122.8 acres in size (**Plates 1-19 and 1-20**); and Onion Creek Nature Preserve along SH 71 (**Plate 1-22**).

Several privately owned recreational facilities – primarily golf courses – exist within the corridor as well. Another example of a privately owned recreational facility utilized by the public is the Manor Downs horse racing track along Hill Lane (**Plate 1-14**).

In addition to these publicly and privately owned lands, there is also an extensive network of proposed hike and bike trails and greenbelts within the SH 130 corridor. The Austin Metro Trails and Greenways, a local trails advocacy group, published the “Community-Based Vision and Inventory of Potential Trails” in 1995 which identified possible trail routes and categorized them with regard to their potential for completion. **Table 3.1-1** lists those trails within the SH 130 corridor that may potentially be affected by the SH 130 alternatives.

Table 3.1-1 Existing and Proposed Trails in the SH 130 Corridor

Trail	Description	Potential for Completion	Potential Partners
San Gabriel River	From Georgetown to Granger Lake along the river or SH 29	Long term potential; further research required	Williamson County, Travis County, City of Austin, City of Georgetown
MoKan Right-of-Way*	From Georgetown to Austin	High potential from US 183 to Georgetown; Highest potential for east Austin and Pflugerville sections	TxDOT, Capital Metro, Travis and Williamson counties, Austin, Pflugerville, Round Rock, Georgetown
Gilleland Creek	Along the creek from I-35 to Austin	Long term potential for eastern and western most sections. Highest potential from Heatherwilde Blvd. to existing trail	City of Pflugerville, City of Austin, other interests
Bohl's Place and Saxony	Will link Bohl's Place neighborhood with Saxony and Katymead neighborhoods	Completed. Funded by Statewide Transportation Enhancement Program.	TxDOT, City of Pflugerville
Dessau Loop	Loop along Dessau Road, Killingsworth Lane and Gilleland Creek	Long term potential	City of Pflugerville, other interests

Table 3.1-1 Existing and Proposed Trails in the SH 130 Corridor
- continued -

Trail	Description	Potential for Completion	Potential Partners
Wells Point	Loop along Heatherwilde Blvd. And other proposed roadways	Long term potential	City of Pflugerville, other interests
Weiss Loop	Connects other proposed trails	High potential	City of Pflugerville, other interests
Pfenning Lane	From FM 1825 to MoKan right-of-way along Pfenning Lane	Long term potential	City of Pflugerville, neighborhood groups
Harris Branch	From Pflugerville to the Colorado River	Long term potential	Travis County, City of Austin, City of Manor
Walnut Creek	From Balcones District Park to the Colorado River	Highest potential	TNRCC, Travis County, City of Austin, Jordan-Bachman Pioneer Farm, other interests
Austin-Northwestern Right-of-Way	Follows Giddings-Llano railroad from Colorado River to Manor	High potential	Travis County, City of Austin, City of Manor, Jordan Elementary, Manor High and Junior High
Onion Creek	From Richard Moya Park to the Colorado River	Long term potential	TxDOT, TPWD, Travis County, City of Austin, LCRA
Plum Creek	From Lockhart City Park along Plum Creek to US 183	Long term potential	City of Lockhart, other interests

*Any trail to be located within the abandoned M-K-T railroad right-of-way will need approval from TxDOT, which owns the right-of-way.

Source: Austin Metro Trails and Greenways, 1995, "Community-Based Vision and Inventory of Potential Trails."

3.1.3 Local Government Plans and Policies

Municipal governments in the state of Texas are granted broad authority to regulate land use within their respective jurisdictions. This authority allows considerable flexibility in the adoption of zoning and subdivision ordinances as well as land use and transportation plans. The SH 130 study corridor comprises several local government jurisdictions that have adopted land use or transportation plans and policies for the purpose of controlling future growth within their city limits and ETJs. Such efforts by local governments are intended to ensure the orderly growth of their respective communities through determinations about future land use intensity, transportation, and

utilities. The SH 130 study corridor traverses the city limits and/or ETJs of Home-Rule Cities³³: Georgetown, Round Rock, Pflugerville, Austin, Lockhart and Seguin. Although land use zoning is applied within city limits only, these cities typically regulate plats, subdivision of land and thoroughfare development within their respective ETJs. Counties do not have zoning authority, but may regulate subdivisions through the issuance of septic tank permits. This section briefly summarizes plans and policies that have been adopted (or are pending adoption) by local governments that may influence the selection of an alternative for SH 130 or have some bearing on possible impacts and mitigation measures.

3.1.3.1 Williamson County

Williamson County

The Commissioners Court adopted a resolution declaring its support for the westernmost alternative between SH 29 and Pflugers Lane.³⁴ The County's resolution noted the importance of determining the route of SH 130 through the County in order to further plan for proper growth and development in the affected areas.

City of Georgetown

According to the City of Georgetown "Century Plan – Development Plan,"³⁵ the area east and southeast of the city will feature some of Georgetown's highest intensity land uses. This high growth area falls within the SH 130 study corridor. The Transportation Plan Element of the Development Plan recognizes the proposed SH 130 and designates the roadway corridors that must be preserved and enhanced to support the development of the "MoKan Roadway." The Plan states that preserving and developing these roadways will "enhance the potential for development along the MoKan Roadway."

³³Home-Rule cities, which generally have over 5,000 population, can write their own constitutions, called city charters, and can have any power in their charter not prohibited by the state constitution, including the power to annex land on an involuntary or non-consensual basis.

³⁴Williamson County Commissioners Court, January 20, 1998.

³⁵City of Georgetown, March 1990 (Second Edition August 1996), "Century Plan – Development Plan."

In addition, the Georgetown City Council adopted a resolution in January 1998 expressing their support for preliminary alignment alternative W-2.³⁶

City of Round Rock

The City of Round Rock's master plan – "General Plan 2000" – allows for continued growth east of I-35 within the SH 130 study corridor.³⁷ Round Rock's transportation plan³⁸ places the proposed SH 130 within its "ultimate roadway plan," a time frame generally defined as after the year 2017. It is shown on an alignment located east of the city, outside Round Rock's city limits and ETJ. The plan also includes Arterial A, a four- and six-lane new location roadway, located generally along the same alignment as the westernmost alternative for SH 130. Other new location four-, six- and eight-lane roadways are included in the city's ultimate plan for the area east of I-35, including a new location freeway, SH 45, which runs generally east-west along Round Rock's southern border, intersecting SH 130 southeast of the city. Some of the proposed future new location roadways are planned to be extended easterly to a terminus at SH 130. Existing roadways such as US 79 and Gattis School Road are proposed for widening and shown to have intersections with SH 130. In addition to the transportation plan, the City of Round Rock's general plan contains specific mention of SH 130. The Plan notes the following:

While the City's Transportation Master Plan depicts SH 130 on an eastern alignment along FM 685, TxDOT is still considering a western alignment... The western alignment is in direct conflict with the City Transportation Master Plan, as it precludes the City from building two major north-south arterials, Arterial A and Double Creek Boulevard. The City has identified north-south arterials as critical to local transportation needs.

On February 25, 1999, the City Council passed a resolution endorsing an eastern alignment for SH 130.

³⁶City of Georgetown, January 27, 1998, Resolution 980127-GG.

³⁷City of Round Rock, May 1999, "General Plan 2000."

³⁸City of Round Rock, January 14, 1999, "Comprehensive Transportation Master Plan."

3.1.3.2 Travis County

Travis County

The Travis County Commissioners Court adopted a resolution in February 1998 endorsing the proposed SH 130.³⁹ The resolution stated the County's preference for a particular alignment, as evident in the following excerpt:

The T-4⁴⁰ alignment best mitigates social, economic, and environmental concerns in all segments of SH 130 through Travis County. The Travis County Commissioners Court endorses an alternative alignment "T4" around the Northeast Metropolitan Park and requests the Texas Department of Transportation to seriously consider this eastern most alternative alignment through Travis County; and Travis County Commissioners Court encourages TxDOT to complete its route and feasibility studies and to select a final alignment of SH 130 as soon as possible in order to enable the local governments to preemptively acquire properties for the right of way of SH 130 before further land development takes place within the corridor of SH 130.

City of Pflugerville

The Pflugerville City Council addressed the issue of SH 130 in relation to the city's growth plans in a January 1998 resolution.⁴¹ The resolution cited the City's support for an alignment located on the eastern edge of the Boulder Ridge development (see **Plate 1-11**), stating that SH 130 would "promote the economic interests of the City of Pflugerville" and "generally conforms to the City's Thoroughfare Plan and Comprehensive Master Plan."

³⁹Travis County Commissioners Court, February 3, 1998, Resolution 19980203R004.

⁴⁰See **Section 2.4.2 Description of Build Alternatives** for clarification of current nomenclature for primary build alternatives.

⁴¹City of Pflugerville, January 27, 1998, Resolution 9801275A.

City of Austin

The City of Austin's official land use plan, "Austin Tomorrow Plan," was adopted in 1980. This plan pre-dated SH 130, but it did express a desire for a north-south growth corridor in order to preserve the environmentally sensitive areas of western Travis County. Through the "Smart Growth Initiative," the 1998-99 Austin City Council is building on the previous Plan's recommendation and has designated the most environmentally sensitive (western) third of the Austin region as the "Drinking Water Protection Zone" and the remaining (eastern) two-thirds as the "Desired Development Zone (DDZ)" (see **Figure 3.1-2**). The City intends to offer incentives to developers to develop within the DDZ, which will have the likely effect of continuing (and even stimulating) growth in eastern Travis County within the SH 130 study corridor. To further enhance the appeal of the development zone east of I-35, the City of Austin has designated four generalized areas for future development as public parks and traditional neighborhoods, identified on **Figure 3.1-2** as "Destination Parks/TND."

Like other local jurisdictions, the Austin City Council has also taken a position with respect to endorsing a particular alignment for SH 130. The following excerpts are from a 1998 resolution of the Austin City Council⁴²:

The City Council adopted a resolution to endorse the concept of a controlled access transit and transportation facility in the vicinity of M-K-T railroad right-of-way to ensure the movement of traffic while preserving the beauty of the landscape; The alignment of SH 130 should complement our efforts to accommodate commuter rail; The economic funding alternatives, socioeconomic and traffic impacts on East Austin and elsewhere of the various alignments of SH 130 shall be addressed in the project development stage, with the desired result of mitigating negative impact; Relieving of traffic of IH-35 within the City limits of Austin and particularly Central and East Austin is of critical importance and SH 130 can play an important role in this relief; Resolved: The City of Austin endorses an alignment for SH 130 that 1) passes east of Walter E. Long Lake, thus providing, according to current information, the least disruption of East Austin and other neighborhoods; and 2) limits the number of interchanges and frontage roads,

⁴²City of Austin City Council, February 12, 1998, Resolution 980212-49.

truly designating SH 130 as a bypass; and 3) accommodates co-located railroad tracks.

3.1.3.3 Caldwell County

City of Lockhart

The proposed “Lockhart 2020 Comprehensive Plan” (not yet adopted) includes land use, housing, zoning, annexation, transportation, and economic elements. The plan calls for regulation of development along state-designated major thoroughfares, specifically the proposed SH 130 corridor, by adopting corridor overlay zoning provisions. Lockhart’s ETJ for annexation purposes extends one mile beyond the city limits, with the exception of the area to the north of the City where it extends 4.5 miles in an irregular pattern. This ETJ extension was initiated by property owners to ensure inclusion in the ETJ of Lockhart rather than Austin.⁴³ The most recent annexations within the ETJ took place in December 1998 and consisted of three parcels south of Lockhart. A review of recent maps depicting proposed annexations for 1999 show a 690-acre parcel along the northwest city boundary in the vicinity of FM 2001, FM 2720 and SH 142; a 463-acre parcel extending from the northern city limit boundary along US 183 to Plum Creek; and a 218-acre parcel on the eastern city boundary. As stated in the comprehensive plan, annexation should encompass growth areas as future development occurs and should also be utilized for extending the City’s jurisdiction to encompass critical areas and facilities, such as SH 130. The City of Lockhart supports the preferred alternative for SH 130. Specifically, the plan recommends establishing the SH 130 corridor as an annexation priority. The SH 130 study corridor currently crosses Lockhart’s ETJ along US 183 north of the city limits and again northwest of the corporate boundary. In addition, the SH 130 study corridor will cross the proposed 690-acre annexation west of the city.

Also proposed in Lockhart’s comprehensive plan are multimodal transportation centers including park and ride facilities, a rail depot to accommodate passenger rail service when available, bike storage facilities, and covered pedestrian waiting areas. Acquisition of land adjacent to the proposed SH 130 is recommended by the plan for these purposes.

⁴³Dan Gibson, Lockhart City Planner, June 30, 1999, Personal Communication.

3.1.3.4 Guadalupe County

City of Seguin

The “Comprehensive Plan, 2005” was prepared for Seguin in 1995 and has not been amended since its adoption.⁴⁴ The ETJ of Seguin extends approximately four miles outside the city limits and provides subdivision platting and other inspection authority. At the time the comprehensive plan was drafted, it was estimated that enough undeveloped land existed within the city limits to support steady growth over the next 10 to 15 years and that there was no spatial demand for substantially extending the city’s boundaries.⁴⁵ However, annexations in the SH 130 study corridor have taken place on the north side of the city since the plan was adopted. Large tracts of land on the west side of the SH 123 Bypass are zoned pre-development and could be available for development with a zoning change approved by the city.

Future growth is expected within the SH 130 study corridor with the annexation of 453 acres approximately one-half mile east of the SH 123 Bypass between FM 20 and Stremple Road proposed for 1999, and with the 654-acre annexation west of SH 123, south of Cordova Road, proposed for 2000.⁴⁶ A review of proposed future community facilities indicated a new fire station to be located south of the SH 123 Business/Bypass intersection (**Plate 1-46**). The City of Seguin supports the preferred alternative for SH 130.

In an effort to diversify employment, Seguin’s comprehensive plan calls for the creation of a commercial/industrial corridor along I-10, extending from the I-10/US 90 interchange east of Seguin westerly along the interstate highway. Land in this area is currently zoned commercial. Although hike/bike trails are recommended in Seguin’s comprehensive plans, no potential alignments were identified within the SH 130 study corridor.

3.2 SOCIAL AND ECONOMIC CONDITIONS

This section of the FEIS discusses the social and economic conditions found within the SH 130 corridor, focusing on a comparison of its population, demographic, employment, and

⁴⁴Schultz, D. City of Seguin, Assistant Director of Planning, May 26, 1999, Personal Communication.

⁴⁵City of Seguin. 1995, Comprehensive Plan, 2005.

⁴⁶City of Seguin. 1997, Three year annexation plan.

income characteristics with those of the surrounding cities and counties, and with the state of Texas. This socioeconomic information was collected for those 1980 and 1990 census tracts which are intersected by, or, are adjacent or in close proximity to, any of the SH 130 build alternatives. This is assumed to be a representative area suitable for allowing analysis to be effectively performed, and supportable conclusions drawn, regarding the nature of the human environment potentially affected by the proposed alternatives. This collection of census tracts is referred to as the “project area” in this section of the FEIS, and the tracts are shown in relation to the eight build alternatives in **Figures 3.2-1a, b, and c.**

3.2.1 Social Conditions

3.2.1.1 Population and Demographic Characteristics

Population

Historic Population Trends for the Region

As **Table 1.1-1** in **Section 1.0 Purpose and Need** indicated, population in this region has been steadily increasing. Within the four-county area, Travis County has always contained the largest population. In 1960 its population was 212,136, growing by more than 230 percent to an estimated 710,326 by 1998. A large majority of that population lives in the city of Austin, which grew from 186,545 persons in 1960 to an estimated 608,053 persons in 1998.⁴⁷

Other cities in the area which have experienced similar growth over the last few decades are Pflugerville, also in Travis County, northeast of Austin, and Georgetown and Round Rock, in Williamson County. The Texas State Data Center (SDC) estimate for Pflugerville as of January 1, 1998, was 11,263, up from 4,444 in 1990. The SDC’s January 1998 estimate for Georgetown was 26,576 persons, up from 14,842 in 1990. Round Rock, which has exhibited the largest proportion of growth of any city in the study corridor, had only 2,811 persons in 1970. The SDC estimates Round Rock’s 1998 population at 53,427, an increase of approximately 1,800 percent since 1970.

Growth in Caldwell and Guadalupe counties has been steady in recent decades, although not as dramatic as that seen in the northern portion of the corridor. Lockhart, for instance, has

⁴⁷Texas State Data Center, 1998, “Population Estimates and Projections Program.”

grown from 6,084 persons in 1960 to 10,343 persons in 1998, an increase of approximately 70 percent over the course of nearly 40 years. Similarly, Seguin has grown by approximately 50 percent over the same time period, from 14,299 persons to 21,754 persons. Population for the state as a whole is also on the rise, growing by more than 100 percent between 1960 and 1998.

Population Distribution in the Project Area

Much like the surrounding region, the project area has been steadily increasing in population over the past few decades. Between the years 1980 and 1990 many of the rural tracts adjacent to the incorporated cities in the area (i.e., Georgetown, Round Rock, Pflugerville, etc.) became more urbanized through both residential and commercial developments, and, as a result, the population densities of these tracts have shown substantial increases. For example, in 1980, Census Tract 201, which covered a large portion of north Georgetown on both sides of I-35, had a population density of about 0.13 persons per acre. Ten years later Tract 201 was divided into four smaller tracts (201.01, 201.02, 201.03, and 201.04) which had a combined population density of about 0.24 persons per acre. Similarly, 1980 Census Tract 215, which covered the portions of Round Rock east of I-35 and north of Brushy Creek, had a density of approximately 0.33 persons per acre. By 1990, the combined density of Tract 215's subdivided tracts (215.01, 215.02 and 215.03) was about 0.82 persons per acre. In contrast, the census tracts in the more rural portions of the project area in Caldwell and Guadalupe counties have remained less densely populated.

By comparison, the 1990 population densities of Williamson and Travis counties were approximately 0.19 and 0.86 persons per acre respectively. These are increases over the 1980 densities, which were 0.11 persons per acre for Williamson and 0.63 persons per acre for Travis. Caldwell and Guadalupe counties are still largely rural, having only increased in density by a small margin from 1980 to 1990 (increasing only about 0.01 persons per acre for both counties). U.S. Census Bureau estimates for 1998 put the population density of Williamson County at about 0.31 persons per acre, Travis County at approximately 1.1 persons per acre, Caldwell County at about 0.09 persons per acre, and Guadalupe County at nearly 0.18 persons per acre.

Population Projections

Population projections from two different sources are described below for the four county region (also refer to **Table 1.1.2** in **Section 1.0 Purpose and Need**). The Texas Water Development Board (TWDB) assembles its *most likely growth scenario* using a cohort-component based model, with age, sex, race, and ethnicity as cohorts, and rates of fertility, survival, and migration as

components of cohort change. This scenario predicts that the estimated 1998 population of the region⁴⁸ will grow by 832,842 persons, from 1,047,155 to 1,879,997 by the year 2030. The SDC uses similar methods based on past migration rates to develop their forecasts for future growth. Their 1990-96 Migration Scenario projects that the population of the four county region will grow from 1,047,155 to 2,620,000 persons by the year 2030, an increase of 1,572,845, or nearly 150 percent.

Demographics

Race/Ethnicity

The project area shares a very similar racial and ethnic makeup with the state of Texas and the surrounding counties when taken as a whole. Individually each county has considerable variation among percentages of racial and ethnic groups (see **Table 3.2-1**), but taken as a whole their makeup begins to resemble the statewide percentages. The majority of the residents in each of the geographic areas listed in **Table 3.2-1** are Caucasian. The populations do differ somewhat in their exact proportions but generally Caucasians make up about 50 to 80 percent of each area. The largest ethnic population in each area is Hispanic. Persons of Hispanic origin account for approximately one quarter (25.3 percent) of the population of the state of Texas and the project area (26.8 percent) and just over one fifth of the population of the combined four county region (20.9 percent). African Americans account for about five to ten percent of each area's population, while Asians, American Indians, and persons of other races or ethnicities collectively account for about two percent. Notable variations at the county level occur in Williamson, where nearly 80 percent of the population is Caucasian, and Caldwell County, where nearly 40 percent is of Hispanic origin.

Table 3.2-1 1990 Race and Ethnicity

	State of Texas	Williamson County	Travis County	Caldwell County	Guadalupe County	Project Area
Total Population	16,986,510	139,551	576,407	26,392	64,873	138,309
White	10,320,879	110,920	376,611	13,588	41,446	84,423
<i>percentage of total</i>	<i>60.8%</i>	<i>79.5%</i>	<i>65.3%</i>	<i>51.5%</i>	<i>63.9%</i>	<i>61.0%</i>
Black	1,988,995	6,600	61,470	2,763	3,569	14,673

⁴⁸U.S. Census Bureau. 1990, Population estimates for Williamson, Travis, Caldwell and Guadalupe counties.

Table 3.2-1 1990 Race and Ethnicity
- continued -

	State of Texas	Williamson County	Travis County	Caldwell County	Guadalupe County	Project Area
<i>percentage of total</i>	11.7%	4.7%	10.7%	10.5%	5.5%	10.6%
Hispanic	4,294,120	19,724	120,049	9,852	18,990	37,012
<i>percentage of total</i>	25.3%	14.1%	20.8%	37.3%	29.3%	26.8%
Asian	305,055	1,695	15,838	124	534	1,559
<i>percentage of total</i>	1.8%	1.2%	2.7%	0.5%	0.8%	1.1%
American Indian	58,747	501	1,595	14	134	372
<i>percentage of total</i>	0.3%	0.4%	0.3%	0.1%	0.2%	0.3%
Other	18,714	111	844	51	200	270
<i>percentage of total</i>	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%

Source: U.S. Census Bureau, 1990.

The distribution of races and ethnicities among 1990 census tracts in the project area is to some degree a function of geography. A large majority of the residents in the partly rural, northern portion of the project area – that is, north of US 290 – are Caucasian, whereas a majority of the residents in the more urbanized portion of the project area between US 290 and the Travis/Caldwell County line are members of a racial or ethnic minority group. South of Travis County, in rural Caldwell and Guadalupe counties, Caucasians are again in the majority, albeit a smaller majority than that found in the northern portion of the corridor.

Age

A comparison of the ages in the population of the project area with those of the four-county region and of the state reveals a lower proportion of elderly residents (age 65 and over) and a slightly higher proportion of younger residents (age 0 to 17) living in the project area. **Table 3.2-2** shows that all three geographic areas – the state, the region, and the project area – generally consist of about 60 to 65 percent in the 18-64 range, 25 to 30 percent in the 0-17 range, and five to ten percent of people in the 65 and over range.

Table 3.2-2 1990 Age Comparison

	State of Texas	Williamson County	Travis County	Caldwell County	Guadalupe County	Four County Region	Project Area
Total Population	16,986,510	139,551	576,407	26,392	64,873	807,223	138,309
Ages 0-17	4,835,352	43,124	138,326	7,782	18,408	207,640	42,206
<i>percent of total</i>	<i>28.5%</i>	<i>30.9%</i>	<i>24.0%</i>	<i>29.5%</i>	<i>28.4%</i>	<i>25.7%</i>	<i>30.5%</i>
Ages 18-64	10,442,900	85,858	396,603	15,061	38,678	536,200	84,525
<i>percent of total</i>	<i>61.5%</i>	<i>61.5%</i>	<i>68.8%</i>	<i>57.1%</i>	<i>59.6%</i>	<i>66.4%</i>	<i>61.1%</i>
Ages 65 and over	1,708,258	10,569	41,478	3,549	7,787	63,383	11,578
<i>percent of total</i>	<i>10.1%</i>	<i>7.6%</i>	<i>7.2%</i>	<i>13.4%</i>	<i>12.0%</i>	<i>7.9%</i>	<i>8.4%</i>

Source: U.S. Census Bureau, 1990.

3.2.1.2 Community Cohesion

Communities within the SH 130 study corridor are characterized by varying degrees of cohesion. Community cohesion can be defined in part by patterns of behavior which individuals or groups of individuals hold in common. Residential subdivisions may develop a sense of community cohesion through social interaction or participation in a neighborhood organization. For instance, if a local church or school provides a location where residents of the neighborhood or community can assemble and associate with one another, or a neighborhood association or neighborhood watch program is in place to serve the community and satisfy the residents' economic and social needs, then some sense of cohesion likely exists. Cohesion may also be based on a common characteristic or interest shared by the members of the community, such as religion, ethnicity, or income level.⁴⁹

Certain boundaries, such as school districts, or the presence of a police or fire station are other factors that may define a community. **Figures 3.2-2a, b, and c** show the independent school districts (ISDs) crossed by the SH 130 corridor. These include Georgetown ISD, Hutto ISD, Round Rock ISD, Pflugerville ISD, Austin ISD, Manor ISD, Del Valle ISD, Lockhart ISD, Prairie Lea ISD, San Marcos Consolidated ISD, Navarro ISD, and Seguin ISD.

⁴⁹Federal Highway Administration Office of Environment and Planning, U.S. Department of Transportation, 1996, "Community Impact Assessment, A Quick Reference for Transportation." Publication No. FHWA-PD-96-036 HEP-30/8-96(10M)P.

3.2.2 Economic Conditions

3.2.2.1 Employment Characteristics

The population growth and development activity within the SH 130 corridor referenced in **Section 1.0 Purpose and Need**, reflects the generally robust economy currently enjoyed throughout central Texas. Certain economic indicators for the cities and counties within the corridor – such as a growing labor force and declining unemployment rates – provide evidence of generally healthy economies at the local and regional level. **Table 3.2-3** shows growth in the labor force and a decline in the unemployment rate for all cities and counties within the corridor between the years 1990 and 1998.

Table 3.2-3 Labor Force Statistics for Study Corridor Cities and Counties

City or County	Year	Annual Average Labor Force	Annual Average Employment	Annual Average Unemployment	Annual Average Unemp. Rate
Georgetown	1990	7,535	7,144	391	5.2
	1998	12,715	12,412	303	2.4
Round Rock	1990	17,867	17,160	707	4.0
	1998	30,363	29,815	548	1.8
Austin	1990	271,217	256,950	14,267	5.3
	1998	368,256	357,455	10,801	2.9
Lockhart	1990	3,971	3,696	275	6.9
	1998	5,394	5,158	236	4.4
Seguin	1990	8,362	7,857	505	6.0
	1998	10,672	10,294	378	3.5
Williamson County	1990	78,503	75,151	3,352	4.3
	1998	133,173	130,578	2,595	1.9
Travis County	1990	335,055	318,515	16,540	4.9
	1998	454,920	442,400	12,520	2.8
Caldwell County	1990	11,778	11,081	697	5.9
	1998	16,063	15,465	598	3.7

Table 3.2-3 Labor Force Statistics for Study Corridor Cities and Counties
- continued -

City or County	Year	Annual Average Labor Force	Annual Average Employment	Annual Average Unemployment	Annual Average Unemp. Rate
Guadalupe County	1990	32,208	30,786	1,422	4.4
	1998	41,398	40,335	1,063	2.6

Note: Data not available for City of Pflugerville

Source: Labor Market Information Department, Texas Workforce Commission. 1999.

A look at the distribution of employment in the study area counties and the state of Texas, as of the second quarter of 1999, reveals that in general the trade and service industries employ the majority of residents. Employment by federal, state, and local governments is also high in the state and four county area. **Table 3.2-4** shows the breakdown of employment by industry, as reported by the Texas Workforce Commission.

Table 3.2-4 Second Quarter 1999 Employment by Industry for Study Area Counties and State of Texas

	State of Texas	Williamson County	Travis County	Caldwell County	Guadalupe County
Total	8,977,093	67,492	508,379	6,349	21,553
Agriculture	123,106	804	3,396	142	216
<i>percent of total</i>	<i>1.4%</i>	<i>1.2%</i>	<i>0.7%</i>	<i>2.2%</i>	<i>1.0%</i>
Mining	144,681	464	665	106	48
<i>percent of total</i>	<i>1.6%</i>	<i>0.7%</i>	<i>0.1%</i>	<i>1.7%</i>	<i>0.2%</i>
Construction ¹	527,065	6,510	28,042	168	1,248
<i>percent of total</i>	<i>5.9%</i>	<i>9.6%</i>	<i>5.5%</i>	<i>2.6%</i>	<i>5.8%</i>
Manufacturing	1,083,352	8,382	65,855	373	5,550
<i>percent of total</i>	<i>12.1%</i>	<i>12.4%</i>	<i>13.0%</i>	<i>5.9%</i>	<i>25.8%</i>
Transportation, Communication, and Public Utilities ²	541,547	1,192	18,238	361	500
<i>percent of total</i>	<i>6.0%</i>	<i>1.8%</i>	<i>3.6%</i>	<i>5.7%</i>	<i>2.3%</i>
Trade	2,166,235	22,645	105,403	1,342	5,182

Table 3.2-4 Second Quarter 1999 Employment by Industry for Study Area Counties and State of Texas
- continued -

	State of Texas	Williamson County	Travis County	Caldwell County	Guadalupe County
<i>percent of total</i>	24.1%	33.6%	20.7%	21.1%	24.0%
Finance, Insurance, and Real Estate	496,068	2,499	27,863	210	770
<i>percent of total</i>	5.5%	3.7%	5.5%	3.3%	3.6%
Service	2,379,392	13,545	151,334	2,045	3,572
<i>percent of total</i>	26.5%	20.1%	29.8%	32.2%	16.6%
Federal, State, and Local Government	1,515,647	11,451	107,583	1,602	4,467
<i>percent of total</i>	16.9%	17.0%	21.2%	25.2%	20.7%

Source: Texas Workforce Commission, 1999. Covered employment and wages, second quarter 1999.

1-includes general building contractors, heavy construction, special trade contractors.

2-includes railroad, local and interurban passenger trains, trucking and warehousing, water transportation, transportation by air, pipelines (except natural gas), transportation services, communications, and electric, gas, and sanitary services.

3.2.2.2 Median Household Incomes

A comparison of median household income and poverty status⁵⁰ – shown in **Table 3.2-5** – reveals less favorable economic conditions within the southern, less urbanized area of the SH 130 corridor. In 1990, the cities of Georgetown, Round Rock, and Austin, and the counties of Williamson and Travis had median household incomes that approached or exceeded the statewide median. Lockhart, Seguin and Caldwell County were well below the statewide median. The 1995 estimates show that median household income for all counties in the corridor is increasing at a faster rate than the statewide median. Even so, Caldwell County's estimated 1995 median household income of \$26,604 was still lower than the statewide median in 1995, which was \$31,488.

⁵⁰The U.S. Census Bureau determined poverty status for all persons except institutionalized persons, persons in military group quarters and in college dormitories, and unrelated individuals under 15 years old. These groups also were excluded from the denominator when calculating poverty rates. The poverty thresholds are revised annually to allow for changes in the cost of living as reflected in the Consumer Price Index. The average poverty threshold for a family of four persons was \$12,674 in 1989, and \$15,569 in 1995.

An examination of the percentage of persons living below the poverty line presents a similar picture. Poverty percentages in 1990 were below the statewide percentage for all cities and counties in the corridor except for Lockhart, Seguin and Caldwell County. Each of the four counties, including Caldwell County, posted improvements in their respective poverty percentages between the years of 1990 and 1995, at a time during which the statewide percentage actually worsened. Still, Caldwell County's estimated 1995 poverty percentage remained well above the statewide percentage.

**Table 3.2-5 Median Household Income and Poverty Status
for Study Corridor Cities and Counties**

Note: All Figures are for 1990 except where noted.

Area	Median Household Income	Percentage of Persons Living Below the Poverty Threshold
Georgetown	\$25,953	17.9%
Round Rock	\$33,228	9.0%
Pflugerville	\$46,250	4.1%
Austin	\$25,414	17.9%
Lockhart	\$18,514	30.6%
Seguin	\$19,970	27.8%
Williamson County	\$33,695	10.1%
<i>1995 Estimate</i>	<i>\$49,542</i>	<i>7.4%</i>
Travis County	\$27,488	16.0%
<i>1995 Estimate</i>	<i>\$38,368</i>	<i>12.9%</i>
Caldwell County	\$20,169	30.9%
<i>1995 Estimate</i>	<i>\$26,604</i>	<i>21.6%</i>
Guadalupe County	\$26,801	17.8%
<i>1995 Estimate</i>	<i>\$32,574</i>	<i>15.9%</i>
State of Texas	\$27,016	18.1%
<i>1995 Estimate</i>	<i>\$31,488</i>	<i>18.5%</i>

Source: U.S. Census Bureau, 1990, and 1995 U.S. Census Bureau Estimates.

Table 3.2-6 shows 1990 income and poverty data for the census tracts that comprise the SH 130 project area. As evident from the preceding discussion, the positive economic condition that generally applies to the SH 130 corridor is not universally shared by all areas within the corridor. Most of the project area census tracts had a 1990 poverty percentage equal to or less than the statewide percentage. However, 13 of the 34 census tracts had a higher poverty percentage than the statewide percentage, with nine of those being higher by 25 percent or more. Most of these poverty areas are located in Caldwell and Guadalupe counties; the others are located in eastern and southeastern Travis County. The presence of low-income populations within the southern reaches of the SH 130 project area is also evident from the median household income data: five of the 34 census tracts had much lower (25 percent or more) median household incomes than the statewide median. One of the biggest differences was found in Tract 9604, located north/northwest of Lockhart, where the 1990 median household income was \$12,911, compared to the Caldwell County median of \$20,169 and the statewide median of \$27,016. This tract also had 42.4 percent of its persons living below the poverty threshold.

**Table 3.2-6 1990 Median Household Income and Poverty Status
for the Project Area**

Census Tract	Population	Median Household Income	Percentage of Persons Living Below the Poverty Threshold
201.01	3,660	\$51,763	4.5%
201.02	3,919	\$27,875	16.1%
208.98	4,987	\$35,049	9.5%
214.01	2,609	\$27,167	19.1%
215.01	2,837	\$37,835	6.2%
207.02	5,435	\$32,374	5.8%
207.03	1,917	\$40,399	4.9%
18.36	5,659	\$39,289	4.3%
18.38	7,650	\$37,475	6.7%
18.35	2,783	\$38,694	2.3%
18.34	2,309	\$27,246	11.5%
18.98	2,201	\$36,115	6.5%
22.01	1,451	\$33,077	15.4%
22.02	2,236	\$27,361	27.3%

**Table 3.2-6 1990 Median Household Income and Poverty Status
for the Project Area**
- continued -

Census Tract	Population	Median Household Income	Percentage of Persons Living Below the Poverty Threshold
22.04	657	\$77,197	0.0%*
22.05	3,259	\$22,790	20.4%
22.06	4,935	\$30,417	15.8%
23.10	2,642	\$16,975	32.0%
23.03	4,201	\$22,276	6.9%
24.16	6,342	\$25,020	27.7%
24.17	4,383	\$30,459	12.5%
9601	4,564	\$24,737	20.9%
9602	2,798	\$16,627	35.6%
9603	3,317	\$23,804	15.6%
9604	3,326	\$12,911	42.4%
9605	5,891	\$21,440	39.1%
2101	3,903	\$21,098	25.3%
2102	4,726	\$15,909	34.3%
2103	5,825	\$15,077	35.6%
2104	3,998	\$32,357	12.0%
2105.01	3,978	\$22,425	21.2%
2105.02	5,954	\$28,365	13.9%
2108	8,851	\$28,047	15.4%
2109	5,106	\$27,524	13.8%

* Only 16 respondents in this census tract.

Source: U.S. Census Bureau, 1990.

It should be noted that the 1990 U.S. Census Bureau data does not reflect reductions in the unemployment rate between 1990 and 1998, and reliance on the 1990 data alone does not give an accurate picture of current economic conditions. It is unlikely though that conditions have changed appreciably in Caldwell County, where the poverty percentage in 1995 was still higher than

the statewide percentage. Additional information about low-income populations within the SH 130 project area is presented in **Section 4.0 Environmental Consequences**.

3.2.2.3 Regional Economic Outlook

As noted in **Section 1.0 Purpose and Need**, population in the eight-county area that encompasses the SH 130 corridor grew by more than 150 percent between 1960 and 1998. The corridor's population is expected to more than double over the next 30 years, reaching 5.4 million persons by the year 2030 (see **Table 1.1-2**). Williamson County is one of the fastest growing counties in the nation, with its principal cities, Round Rock and Georgetown, experiencing population growth in excess of nine percent per year between 1990 and 1998. The central Texas economic base has expanded in the last decade to include high technology firms in the semiconductor, computer, and communications equipment industry, as evidenced by numerous major manufacturing facilities located east of I-35, including Samsung Austin Semiconductor, Dell Computer, Applied Materials, and Motorola. The economy is also fueled by the new Austin-Bergstrom International Airport, opened in May 1999, and already accommodating over 6.6 million passengers per year with 260 commercial flights per day. The City of Austin's Smart Growth Initiative is intent on focusing future growth in eastern Travis County. Other local government initiatives within the SH 130 corridor (such as the City of Georgetown "Century Plan – Development Plan" and the City of Round Rock "General Plan 2000," discussed in **Section 3.1.3 Local Government Plans and Policies**) provide additional evidence of local government intentions to steer future growth toward the SH 130 corridor east of I-35.

Forecasted employment in the Williamson, Travis and Hays County area also suggests a continuation of growth and economic development trends. Based on existing development ordinances, development trends and the availability of "developable" land, employment in the three-county area is expected to more than double from 515,400 in 1997 to 1,216,500 in 2025.⁵¹ Within the sub-areas analyzed by CAMPO for the 2025 Transportation Plan, areas within the SH 130 corridor are forecast to receive substantial increases in employment. For example, the Georgetown area is expected to grow from 6,200 employees in 1997 to 53,000 employees in 2025; the Hutto area is forecast to grow from 800 employees in 1997 to 15,400 employees in 2025; employment in the Northeast area of Travis County is expected to increase from 33,800 to 130,900 in the same timeframe; and the Southeast Travis County area is shown to increase from 18,700 to 95,700. These

⁵¹CAMPO 2025 Transportation Plan, Capital Area Metropolitan Planning Organization, June 12, 2000.

long-range employment forecasts underscore a favorable economic outlook for the SH 130 corridor and the continued economic vitality of the region.

3.3 EXISTING NOISE ENVIRONMENT

This section generally describes the methodology for determining noise levels in the SH 130 corridor and identifies the major sources contributing to those noise levels.

Existing sources of noise in the study corridor include all area roadways, commercial and industrial developments, passing trains, and airports. Of these sources, the major contributors are the highways and high-volume arterial roadways (i.e., I-35, US 183, US 290, US 90, I-10, etc.).

Sound from highway traffic is generated primarily from a vehicle's tires, engine, and exhaust. It is commonly measured in decibels and is expressed as "dB." Also, since sound occurs over a wide range of frequencies, and not all frequencies are detectable by the human ear, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dBA." Further, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average, or equivalent, sound level and is expressed as "L_{eq}".⁵²

Table 3.3-1 Range of Common Sound Levels on an A-Weighted Decibel Scale

COMMON SOUND/NOISE LEVELS		
Outdoor	dBA	Indoor
Pneumatic hammer	100	Subway train
Gas lawn mower at 1 meter	90	Food blender at 1 meter
Downtown (large city)	80	Garbage disposal at 1 meter
Lawn mower at 30 meters	70	Vacuum cleaner at 3 meters
		Normal Speech at 1 meter

⁵²TxDOT, 1997, Recommended Text for Environmental Assessment Noise Analysis.

Table 3.3-1 Range of Common Sound Levels on an A-Weighted Decibel Scale
- continued -

Air conditioning unit	60	Clothes dryer at 1 meter
Babbling brook		Large business office
Quiet urban (daytime)	50	Dishwasher (next room)
Quiet urban (nighttime)	40	Library

Source: TxDOT, 1997, "Recommended Text for Environmental Assessment Noise Analysis."

Under 23 CFR § 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, analysis of project area noise levels must include a comparison of the existing levels to those predicted to occur at some point in the future as a result of the implementation of the proposed action. To accomplish this, project staff have identified locations within the SH 130 study corridor which are most sensitive to noise, and a representative sample of these locations was chosen for noise modeling. The results of the modeling, performed according to TxDOT's "Guidelines for Analysis and Abatement of Highway Traffic Noise," reveal existing noise levels (L_{eq} 's) ranging from 40 dBA at a single family residence (Ar15) along Guadalupe County Road 147 (**Plate 1-43**), to 77 dBA at the Linda Vista mobile home park (NR10) along FM 973 near the Austin-Bergstrom International Airport (**Plate 1-23**).

The representative noise receivers are described in **Table 1** in **Appendix E** of this FEIS and they may include single residences, residential areas, businesses, parks, schools, churches, nursing homes, hospitals and historic sites adjacent to the SH 130 build alternatives. This table also lists the existing noise levels for these receivers compared to TxDOT's noise abatement criteria (NAC) levels for different types of sites. The receivers are also shown graphically on **Plates 1-1 through 1-46 Human Environment & Flood Plains** in **Appendix A**.

Other sources of noise contributing, although minimally, to the existing noise levels in the study corridor are: the several industrial developments scattered throughout the corridor (i.e., Samsung Austin Semiconductors, Tracor, Motorola, etc.); sand and gravel mining operations; passing trains using the Giddings-Llano and Union Pacific railroad lines; and airplanes using either the Georgetown Airport, the Austin-Bergstrom International Airport, the Lockhart Municipal Airport, Geronimo Airport, or the Randolph Air Force Auxiliary.

3.4 CLIMATE AND AIR QUALITY

This section describes the climate and atmospheric conditions found in Central Texas and their relationship to air quality in the region. It also discusses the U.S. Environmental Protection Agency's (EPA) standards for air quality (the National Ambient Air Quality Standards), and the region's compliance with those standards. Finally, this section identifies the quality of the air in the SH 130 corridor based on the Texas Natural Resource Conservation Commission (TNRCC) Office of Air Quality regional ambient conditions.

3.4.1 Climate and Atmospheric Conditions in Central Texas

Central Texas has a humid subtropical climate. A trademark of this type of climate is its hot, muggy summers. Generally, the dew-points and relative humidities are high in the summer, giving way to cooler temperatures only with the passing of weak cool fronts. Heat waves, sometimes lasting several weeks, can occur when high pressure moves over the area. Winters in this area are relatively mild, with temperatures rarely dipping below freezing at lower elevations. Precipitation is normally adequate and fairly well-distributed throughout the year, with a typical annual average of around 31 inches.⁵³

The topography of the SH 130 corridor is described as flat to gently rolling hills. There are no canyons or mountainous features which would tend to limit the dispersal or channel the flow of airborne pollutants. Instead the movement of these pollutants in the atmosphere is governed by thermal and mechanical turbulence. With a prevailing southerly wind at about ten miles per hour, and frequent thermal activity, Central Texas and specifically the Austin area typically experience fairly good dispersion characteristics.⁵⁴

3.4.2 Relevant Pollutants

The primary air pollutant for transportation-related projects is carbon monoxide (CO). CO emissions result from the operation of internal combustion engines and are generally more pronounced in the immediate vicinity of the project, such as within the project right-of-way. An

⁵³Ahrens, C. Donald, 1994, "Meteorology Today. An Introduction to Weather, Climate, and the Environment," Fifth Edition.

⁵⁴Holzworth, G.C., 1972, "Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States." Bulletin AP-101. U.S. Environmental Protection Agency.

ambient CO concentration range of 0.4 to 0.5 parts per million (ppm) is typical for most rural and suburban areas.⁵⁵ The operation of motor vehicles also contributes to emissions of other pollutants that may affect the local environment such as Hydrocarbons (HCs), oxides of nitrogen (NO_x), volatile organic compounds (VOCs), particulate matter (TSP, PM₁₀, and PM_{2.5}), and lead (Pb).

The TNRCC has monitored airborne pollutants in the Austin area using both continuous and non-continuous methods for approximately twenty years. This long-term monitoring of the area's ambient air provides a basis for quantifying the level of pollutants which have been introduced into the atmosphere by stationary sources (i.e., industrial activity), mobile sources (i.e., cars, trucks, buses), area sources (i.e., lawn maintenance, home furnaces, water heaters), and natural phenomena (i.e., dust storms). The pollutants monitored in the Austin area include ozone (O₃), CO, inhalable particulate matter (TSP, PM₁₀ and PM_{2.5}), NO₂, and sulfur dioxide (SO₂). **Table 3.4-1** shows the National Ambient Air Quality Standards (NAAQS) as defined by the EPA.

Table 3.4-1 National Ambient Air Quality Standards

Criteria Pollutant	Primary Standard ^a	Secondary Standard ^b
Total Suspended Particulate Matter (TSP) ^c	260 µg/m ³ 24-hour average, not to be exceeded more than once a year 75 µg/m ³ annual geometric mean	150 µg/m ³ 24-hour average not to be exceeded more than once a year 60 µg/m ³ annual geometric mean
PM ₁₀	150 µg/m ³ 24-hour average, based on a three-year average of the annual 99 th percentile. 50 µg/m ³ three-year annual arithmetic mean	Same as primary Same as primary
PM _{2.5} ^d	65 µg/m ³ 24-hour average, based on a three-year average of the annual 98 th percentile. 15 µg/m ³ three-year average annual arithmetic mean.	Same as primary Same as primary
Sulfur Dioxide (SO ₂)	365 µg/m ³ (0.14 ppm) 24-hour average, not to be exceeded more than once a year 80 µg/m ³ (0.03 ppm) annual average	1,300 µg/m ³ (0.5 ppm) three-hour average, not to be exceeded more than once a year
Carbon Monoxide (CO)	40,000 µg/m ³ (35 ppm) hourly average, not to be exceeded more than once a year 10,000 µg/m ³ (9 ppm) eight-hour average, not to be exceeded more than once a year	Same as primary

⁵⁵TxDOT Environmental Affairs Division.

Table 3.4-1 National Ambient Air Quality Standards
- continued -

Criteria Pollutant	Primary Standard ^a	Secondary Standard ^b
Nitrogen Dioxide (NO ₂)	100 µg/m ³ (0.05 ppm) annual average	Same as primary
Ozone (O ₃) ^d	235 µg/m ³ (.12 ppm) one-hour average, not to be exceeded more than three days over three years. Standard established using the 4th highest daily measurement (based on an 8-hour average) exceeding .08 ppm in a single year, averaged over a 3-year period. If this number is equal to or exceeds .085 ppm, the area is designated non-attainment.	Same as primary
Lead (Pb)	1.5 µg/m ³ maximum arithmetic mean averaged over a calendar quarter never to be exceeded	Same as primary

^a Primary standards define levels of air quality which the EPA Administrator judges necessary to protect the public health with an adequate margin of safety (40 CFR 50.1).

^b Secondary standards define levels of air quality which the EPA Administrator judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant (40 CFR 50.1).

^c These standards are no longer in effect. They are included for historical completeness only.

^d The ozone 8-hour standard and the PM_{2.5} standards are included for information only. A 1999 federal court ruling blocked implementation of these standards pending a hearing by the U.S. Supreme Court.

Note: The TNRCC has adopted the NA AQS standards as State standards.

Source: Environmental Protection Agency, July 1997.

3.4.3 Regional Compliance

The SH 130 corridor is located within two regions of the TNRCC Office of Air Quality: Region 11, which includes Williamson, Travis, and Caldwell counties; and Region 13, which includes Guadalupe County. Region 11 and Region 13 are considered to be in attainment with respect to each of the criteria pollutants listed in the NAAQS. However, the monitored ozone (O₃) levels in the Austin area equaled the standard in 1988, 1989, 1994, and 1997 and remain at the high end of acceptable. The TNRCC carefully analyzes the incoming data for any downward trends that would suggest deterioration of the existing air quality in the area.

In July 1997, the EPA announced a new NAAQS for ground-level ozone. The EPA is phasing out and replacing the previous one-hour standard with a new eight-hour standard to protect public health against longer exposures to the air pollutant. Currently, the 8-hour standard and the PM_{2.5} standard are in federal litigation and are not being enforced by the EPA or TNRCC.

Therefore, the one-hour ozone standard still applies to all communities. Under the one-hour standard, ozone concentrations of 0.125 ppm⁵⁶ or above are considered to exceed the standard. The standard is not to be exceeded in an area more than three times in three consecutive years at the same monitoring site. If the standard is exceeded four times in three years at one site, then the area is in violation of the standard and no longer in “attainment.”⁵⁷

The EPA will use the proposed eight-hour standard to judge the air quality of all communities and will announce which ones are not in attainment of the new standard in 2000. (Recent litigation regarding EPA’s new standard may affect the implementation of the standard and attainment classification status.)

3.5 GEOLOGY AND SOILS

3.5.1 Physiographic Setting

The SH 130 corridor lies to the east of the Balcones Escarpment, which is a line of hills marking the main line of displaced bedrock across the Balcones Fault Zone. Across this zone of displacement, faults have transposed hard limestone strata on the west against softer clay and chalk strata to the east. This escarpment marks the boundary between the hilly Edwards Plateau on the west and the rolling prairie of the Gulf Coastal Plains on the east. Across this boundary are changes in almost all the natural attributes of the land – climate, surface water, groundwater, soils, flora, and fauna. The dissected limestone plateau terrain west of the Balcones Escarpment is characterized by stony soils, predominant juniper-live oak savanna, and steep, narrow watercourses. Groundwater occurs from several strata at relatively shallow depth. East of the Escarpment, in contrast, are the deep, fertile soils of the Blackland Prairie, whose native vegetation is mainly grasses. Streams here occur in wide, low-gradient channels, and groundwater is typically deep and may be tepid and brackish.

The SH 130 corridor lies mostly within the Blackland Prairie physiographic region, with the southern edge bordering on the Interior Gulf Coastal Plains.⁵⁸ The Blackland Prairie region

⁵⁶0.125 parts of ozone per million parts of air.

⁵⁷Texas Natural Resources Conservation Commission. 1998, Office of Compliance and Enforcement, Monitoring Operations.

⁵⁸Bureau of Economic Geology, The University of Texas at Austin, 1996, “Physiographic Map of Texas.”

extends as a belt along the inner margin of the Gulf Coastal Plains from near Uvalde, in south Texas, to the Oklahoma state line northeast of Dallas. The Blacklands, as the name implies, are noted for their black soils. These clay soils are deep and fertile and support the intensive agriculture that forms a major base for the economy of Central Texas. The Blackland belt occurs within the SH 130 corridor as rolling terrain of low relief that is cut by alluvial valleys, the major one of which is the Colorado River Valley. The Colorado River Valley bisects the Blackland belt, forming a separate physiographic area that is locally as much as seven miles wide with distinct land-use potentials and constraints.⁵⁹ Near the southern extremity of the corridor, landforms and bedrock change from prairie terrain, on claystone and mudstone, to the savannas and tree-covered hills of the Interior Plains, on sandstones and siltstones. The range of elevations within the SH 130 corridor is between 345 and 805 feet above mean sea level.

3.5.2 Geology

The geologic setting within the study corridor is characterized by varying types of substrate deposited under markedly different conditions at widely separated times. These include bedrock deposited during the Late Cretaceous or Early Tertiary Periods and surface materials deposited during the Quaternary Period. Cretaceous bedrock consists of claystone, shale, and marl, deposited under marine conditions from approximately 80 million to 65 million years ago (MYA). Tertiary bedrock consists of loosely consolidated sandstones, siltstones, and mudstones, deposited in shallow-marine and deltaic environments about 55 MYA. Quaternary strata are all of alluvial origin. They consist of high-standing, discontinuous deposits that occur as surface veneers at various topographic levels across the Blackland Prairies and as valley-bottom deposits that consist of flood plain and terrace alluvium along well developed stream systems.

Bedrock units are all sedimentary rocks, although immediately west of US 183 south of the Austin-Bergstrom International Airport are volcanic rocks that make up the Pilot Knob igneous complex. All bedrock units are gently tilted toward the Gulf of Mexico, but local faults displace the strata, disrupting normal stratigraphic succession and angles of dip. These faults, however, appear to be no longer seismically active. The main aspect of dip of strata and of displacement across faults is down-to-the-southeast; hence, as one proceeds east or south, progressively younger bedrock units are encountered. Rock units exposed along the corridor (from oldest to youngest) are the

⁵⁹Woodruff, C.M., Jr. 1979, Land Resource Overview of the Capital Area Planning Council Region, Texas—A Non-Technical Guide. Bureau of Economic Geology, The University of Texas at Austin.

Georgetown Formation, Del Rio Clay, Buda Limestone, Eagle Ford Formation, the Austin Chalk, the Taylor and Navarro Clays, Marlbrook Marl, Midway Group, Wilcox Group, and various fluvial terrace deposits along river and stream channels.

3.5.2.1 Characteristics of Geologic Units in the SH 130 Corridor

The differing geologic units found within the corridor have distinct mineral properties and stability characteristics, and therefore the corridor's suitability for urban development is varied. In general, the limestones and calicheified alluvial gravels exhibit strong stability while the clays and mudstones show very weak stabilities. Even these very general characterizations are subject to variability, however. For instance, if a layer of limestone is underlain by clay, then the stability of the limestone is jeopardized by the weakness and plasticity of the clay. Generally, development of a highway project requires substrate exhibiting high slope stability and moderate to high foundation strength.⁶⁰

Within the SH 130 corridor all three types of substrate are exposed in different areas. Near the northern terminus, in the vicinity of the San Gabriel River, the stable Georgetown Formation limestones are locally exposed and form the underlying substrate for the alluvial deposits associated with the river and its tributary streams. This mixed limestone has high foundation strength which does not restrict construction. Although the thin soils associated with this rock type are not suitable for high density development. Also in this area are the weaker, plastic claystones of the Del Rio Clay. These are exposed locally and also underlie alluvial deposits and overlay limestone. These clays have low slope stability and low foundation strength. Therefore, limitations for construction exist and special foundation design is required for most structures.

South of the San Gabriel River a situation of limestones overlaying clays is encountered when the Buda Limestone covers portions of the Del Rio Clay. As previously stated, this causes the normally stable slopes of the limestone to be susceptible to failure due to the plasticity of the underlying clay. Construction along this type of substrate may require special foundation design considerations.

⁶⁰Garner and Young, 1976, "Environmental Geology of the Austin Area: an Aid to Urban Planning." Report on Investigations No. 86.

The most favorable substrate for urban development in the SH 130 corridor is the Austin Chalk. These soft limestones generally have high foundation strength and form stable slopes, and as such the City of Austin has denoted this terrain as an area for “desired growth”.⁶¹ The Austin Chalk is exposed over a large portion of the SH 130 corridor between Georgetown and Austin.

Another large portion of the corridor overlies the weak plastic clays of the Taylor and Navarro Groups, which are in turn overlain by alluvial deposits in the presence of stream channels. These Taylor and Navarro Clays are intermingled with similarly weak sandstones in the Midway and Wilcox groups in a heavily faulted area toward the southern end of the corridor. Special foundation design considerations may be required for construction along this portion of the corridor.

The sandy and silty clays of the Midway and Wilcox groups exhibit low foundation strength, very high shrink-swell potential and high corrosion potential. Therefore, they pose problems for highway construction and maintenance.

3.5.2.2 Relationship of Geology and Ground Water

The geologic units within the SH 130 corridor may also be characterized by their ability to hold ground water. Types of substrate that are beneficial to highway design (in this case limestone) may exhibit properties that assist in ground water recharge; permeability, porosity, and erodibility of soils. As stated previously, several different types of substrate are exposed along the SH 130 corridor. Therefore, the availability of ground water differs throughout the corridor. See also **Section 3.6.2 Ground Water** for more discussion on the subject of availability of ground water in the SH 130 corridor.

The Georgetown Formation, which is exposed locally along the northern reaches of the corridor, is not highly permeable, and is not known to form cavernous porosity. Nonetheless, by convention, it is considered the upper member of the Edwards Aquifer (which is referred to as the "Edwards and associated limestones" by the Texas Water Development Board and the U.S. Geological Survey). Although the Georgetown Formation contains no apparent major zones of porosity for infiltration of ground water, there is no seal between the Edwards Limestone and the overlying Georgetown Formations; hence, they are both considered part of a single water-bearing

⁶¹City of Austin, Department of Planning, 1980, “Austin Tomorrow Plan”.

unit. Water bearing strata in the Edwards can be found at depths varying from 100 feet to 1,000 feet within the Balcones Fault Zone; east of the fault zone drilling depths are greater than 1,000 feet.⁶²

The Del Rio Clay, which is found south of the San Gabriel River in conjunction with the Buda Limestone, has very low permeability. It forms a seal above the Georgetown Formation more or less preventing infiltration into the underlying Edwards Aquifer. The Buda Limestone is not an important aquifer, but perched ground water accumulations may occur owing to marked permeability differences between the limestone strata and the underlying claystone. Seeps and springs issuing from this contact are common, however, the seal provided by the Del Rio Clay prevents infiltration of this perched ground water into the Edwards Aquifer below.

The Austin Chalk is not highly porous or permeable, but it is tapped as a local aquifer of limited extent. Permeable zones are generally associated with fractures. There is little known solution action to abet permeability. For this reason, recharge is only a minor fraction of the local water budget, and ground water infiltration is low on chalk outcrop areas.

Neither the Taylor nor the Navarro is an aquifer of any significance. The lack of permeability in both clay soil and substrate prevents appreciable infiltration.

The Wilcox Group crops out in a northeastward trending belt that ranges in width from about eight miles to about fourteen miles at the southern end of the project corridor. The Wilcox supplies small to large quantities of ground water at depths ranging from 50 feet to about 2,800 feet.

3.5.3 Mineral and Energy Resources

Mineral and energy resources along the corridor are chiefly limited to near-surface deposits of alluvial sand and gravel that are used as construction aggregate. Extensive areas of sand and gravel extraction occur along the flood plain/terrace complexes of the San Gabriel and Colorado Rivers, as well as some of the smaller features in the corridor. Such deposits provide a potential source for road-base fill and other construction uses. Another potential rock/mineral resource along the corridor includes the Austin Chalk, which is quarried elsewhere in Central Texas as a feedstock for the manufacture of Portland cement. This resource use, however, is highly capital intensive and hence, quarry operations within the corridor are minimal.

⁶²Garner and Young, 1976.

With regard to energy resources within the corridor, the Elroy Field produces petroleum from Cretaceous rocks associated with a buried igneous plug southwest of Austin-Bergstrom International Airport. In addition, the Larremore Field, located about one mile northwest of Lockhart, also produces petroleum. Furthermore, the corridor contains a low-grade geothermal resource at a temperature of approximately 43.3 °C (110 °F) from groundwater produced from basal Cretaceous sandstones of the Trinity Aquifer at depths in excess of about 2,000 feet.⁶³ This resource is of value mainly as an adjunct to the use of the water for ordinary domestic purposes; it is not likely to be exploited for its energy value alone. For example, the town of Manor uses the water from this deep aquifer, but the heat energy of the water is not used. There are no known occurrences of coal or lignite within the SH 130 corridor.

3.5.4 Soils

This section describes the soils found in the SH 130 corridor according to their functions in the ecosystem, their economic value, and their utility or limitations associated with the construction, operation, and maintenance of the proposed roadway facility. It also lists the dominant soil associations and identifies the extent of prime and other important soils found in the corridor.

3.5.4.1 General Soil Attributes

Soils constitute a major link in global ecological systems. Water that percolates through soil is filtered by various physical, chemical, and biological processes. These include aeration, microbial digestion, ion exchange, and the uptake of nutrients by plants. Through these actions, low-quality runoff may be upgraded as it passes through the soil zone. The thick, clayey soil types are especially active in terms of their chemical activity. Because of this activity, the soil zone functions as an environmental buffer in which the quality of runoff, from a roadway for example, may be upgraded.

Soils are also an important component of the economic stability of the area. As previously mentioned, the proposed project lies mainly in the Blackland Prairie region, which is defined mainly by its soil attributes – generally low, rolling terrain and thick, highly plastic clay

⁶³Woodruff et al., 1982, "Geothermal Resources of Texas," 1:100 000 scale map. Bureau of Economic Geology, The University of Texas at Austin. In cooperation with the National Geophysical Data Center, National Oceanic and Atmospheric Administration for the U.S. Department of Energy, Geothermal and Hydropower Technologies Division.

soils. These soils are among the most fertile in the state, and because of the widespread conversion of the tallgrass prairie to agricultural land, productivity in the area (cotton, grain sorghum, wheat, etc.) is high.

Aside from the agricultural value and ecological attributes of these soils, the Blacklands also pose engineering constraints. These constraints are related to the weak, plastic properties displayed by both soil and substrate across much of the prairie terrain in the corridor. The properties of soil which must be considered in designing a highway include erodibility, compressive strength, shrink-swell potential, slope stability, permeability, depth to ground water, excavation potential, and corrosion potential, and general statements may be made about these properties displayed by the major soil types found within the corridor.

Clayey soils, irrespective of whether they are formed on claystone or on tributary alluvium, all have low compressive strength, low slope stability, low permeability, high shrink-swell potential, and high corrosion potential. These materials are easily rippable and highly erodible, and special foundation design is required for most structures placed on them. These properties apply to the surface materials and claystone bedrock wherever the Del Rio Clay, Taylor and Navarro Clays, or the Midway Group make up the substrate within the corridor.

The sandy and silty loams that have formed on alluvial sediments, deposited either as high relict terraces or along modern stream valleys, are characterized by moderate to low compressive strength, generally high slope stability, high permeability, low shrink-swell potential, and variable corrosion potential, depending on local occurrence of clay minerals. In places, the alluvial gravel forms a thin veneer only a few feet thick over clayshale bedrock. In these areas, the discontinuity in water-holding attributes between the gravelly material above and the impervious clays exacerbates corrosion potential. Moreover, seeps and springs commonly issue forth from this boundary, which may cause local nuisances to construction. In contrast, the water table beneath the Colorado River flood plain/terrace complex typically lies at depths of greater than ten to twenty feet.

3.5.4.2 Soil Associations in the SH 130 Corridor

The surface deposits in the SH 130 corridor are generally deep calcareous clays and clayey loams over marl, chalk, clay or alluvium with large deposits of sandy and silty fluvial materials forming the terraces of the major drainage valleys. These are typical soil types of the southern Blackland Prairies. Dominant soil associations of this area include the Austin-Houston

Black-Castephen, Houston Black-Heiden, Austin-Eddy, Burleson-Wilson, Heiden-Houston Black and Branyon-Barbarosa-Lewisville.⁶⁴ The dominant vegetation cover type occurring on these blackland soils is grassland, with both native and non-native species occurring, although much of the corridor is used extensively for agricultural operations and consists of improved pasture grasses.

The Austin-Houston Black-Castephen soil association consists of deep to shallow, calcareous clayey soils formed in marine chalk, marl, shale, and clay substrate. The soils that make up this association are dominant on the Austin Chalk formation, which, as previously stated, is made up of soft limestones which generally form stable slopes and have high foundation strength. This formation is found in a large portion of the SH 130 corridor between Georgetown and Pflugerville. Soils in this association have a moderate to very high shrink-swell potential and moderate erodibility.

The Houston Black-Heiden association consists of deep, calcareous, clayey soils overlying marl. This soil association is dominant on the Taylor and Navarro Clay formations which make up a large portion of the SH 130 corridor between Pflugerville and Seguin. The soils and substrate associated with these formations have low slope stability and high shrink-swell potential and erodibility is moderate.

The Austin-Eddy association is made up of moderately deep and shallow, calcareous, clayey and loamy soils overlying chalk. These soils can be found in relation to the Austin Chalk formation in the areas surrounding Pflugerville. The soils in this association have moderately slow permeability, high shrink-swell potential and moderate erodibility.

The Burleson-Wilson soil association consists of deep, clayey and loamy soils overlying marl. The soils are generally found overlying the Taylor and Navarro clays and Marlbrook Marl in southern Travis and Northern Caldwell Counties on nearly level to gentle slopes. Permeability of these soils is very slow, shrink-swell potential is high and sheet and rill erosion potential is moderate on bare surfaces.

⁶⁴ Natural Resources Conservation Service, 1974;1977;1978;1983, Soil Surveys for Williamson, Travis, Caldwell, and Guadalupe Counties, United States Department of Agriculture.

The Heiden-Houston Black association is similar to the aforementioned Houston Black-Heiden association in its distribution and distinguishing characteristics. It differs in that the dominant soil type is Heiden rather than Houston Black.

The Branyon-Barbarosa-Lewisville soil association is made up of deep, moderately well drained to well drained, nearly level to gently sloping clayey soils on stream terraces. This association is on broad, smooth ancient terraces dissected by small drainages at the southern end of the corridor near Seguin. The permeability of these soils is very slow, shrink-swell potential is high and erodibility is slight to moderate.

3.5.4.3 Prime and Other Important Farmland Soils

The Farmland Protection Policy Act (FPPA), as detailed in Subtitle I of Title XV of the Agricultural and Food Act of 1981, provides protection to prime and unique farmlands, as well as farmlands of statewide or local importance. Prime farmland soils, as defined by the United States Department of Agriculture, are soils that are best suited to producing food, feed, forage, and oilseed crops. Such soils have properties that are favorable for the production of sustained high yields. Prime farmland soils typically produce the highest yields with a minimum input of energy and economic resources, and farming these soils has been found to keep damage to the environment at a minimum. Prime farmland soils usually exist where adequate precipitation is available, and where mean temperature and length of growing season are favorable. The pH level of prime soils is neither extremely acidic nor extremely alkali. These soils are fairly permeable to water and air, contain very few rocks and are not excessively erodible by wind or water. Prime soils are not saturated for long periods, nor are they subject to frequent flooding during the growing season. Slopes are generally less than six percent. Prime farmland can include cropland, pastureland, rangeland or forestland, but does not include land converted to urban, industrial, transportation, or water uses. Statewide and locally important farmlands are defined by the appropriate state or local agency as important for the production of food, feed, fiber, forage or oilseed crops. Unique farmlands are not recognized by NRCS in the State of Texas.

Much of the proposed corridor contains “important farmland soils” according to the Natural Resources Conservation Service (NRCS). Coordination with the NRCS concludes that approximately 98 percent of the farmable land in Williamson, Travis, Caldwell, and Guadalupe counties is subject to FPPA. Forms AD-1006, found in **Appendix B**, depict the NRCS’ assessment of the conversion of these lands to transportation uses as a result of the proposed action. According

to the NRCS, under FPPA, proposed alternative “sites that receive a Farmland Conversion Impact Rating combined score of less than 160 points will need no further consideration for protection against conversion activity. In addition, sites that receive a combined score of less than 160 points are considered as ‘farmland committed to or already in urban development’.” A summary of the AD-1006 impact ratings appears in **Section 4.0 Environmental Consequences**.

3.6 WATER RESOURCES

3.6.1 Surface Water

3.6.1.1 Surface Drainage Characteristics

The proposed project is located within three of Texas’ major river basins – the Brazos, the Colorado, and the Guadalupe. This combined drainage area covers approximately 91,536 square miles through Central Texas from the New Mexico state line to the Gulf of Mexico. The major surface water features found within the corridor are the San Gabriel River, the Colorado River, and the San Marcos River.

The San Gabriel River is within the Brazos River Basin and has its headwaters in Burnet County. Both the north and south forks flow east into Williamson County, reaching a confluence near the northern terminus of the proposed build alternatives before being dammed in the northeastern part of the county, forming Granger Lake. The San Gabriel continues on and eventually drains into the Brazos River further to the east of the corridor. The SH 130 corridor crosses the San Gabriel River within the recharge zone for the Edwards Aquifer, as delineated by the TNRCC, northeast of the city of Georgetown. The corridor also crosses one or more tributaries of the San Gabriel, including Berry Creek, Pecan Branch, and Smith Branch (all within the Edwards Aquifer recharge zone) and Brushy Creek (along the eastern boundary of the Edwards Aquifer transition zone).⁶⁵

The Colorado River is within the Colorado River Basin and has its headwaters in Dawson County, in West Texas near the New Mexico state line. It flows southeast into Matagorda Bay on the Gulf of Mexico draining an area of about 39,900 square miles. The corridor crosses the Colorado downstream of the city of Austin in Travis County. It also crosses several of the

⁶⁵Texas Natural Resource Conservation Commission, Edwards Aquifer Recharge Zone maps, using United States Geological Survey 7.5 minute topographic quadrangles, 1:24000 scale, as base maps.

Colorado's tributary streams, such as Wilbarger Creek, Gilleland Creek, Harris Branch and Onion Creek.

The San Marcos River is within the Guadalupe River Basin and has as its headwaters a natural spring flowing up from the Edwards Aquifer. It flows east from San Marcos in Hays County and drains into the Guadalupe River well east of the corridor, near Gonzales. The corridor crosses the San Marcos River at the Caldwell/Guadalupe County line. It also crosses several tributaries of the San Marcos, including Plum Creek, Elm Creek, Brushy Creek and York Creek.

3.6.1.2 Water Quality in Surface Streams

The Texas Surface Water Quality Standards (TSWQS), which apply to all surface water features in the state, are promulgated as Title 30, Chapter 307, of the Texas Administrative Code. These standards are approved by the EPA in accordance with Section 303(c) of the federal Clean Water Act and updated every three years to accommodate new developments or updated information. In the State of Texas Water Quality Inventory, most recently published in 1996 and distributed by the TNRCC, information provided by the TSWQS is assimilated and grouped by river basin. To track water quality and compliance with the standards, the TNRCC's Surface Water Quality Monitoring Program further divides the state's larger surface water features in those river basins into defined (classified) segments and assesses them according to the criteria specified in the TSWQS. Smaller features, although not designated as segments, are likewise monitored, but sufficient data is not available to develop the more conventional criteria. These features are described in Appendix D of the TSWQS.

The classified segments crossed by the SH 130 corridor are: Segment 1248 San Gabriel/North Fork San Gabriel River; Segment 1244 Brushy Creek; Segment 1428 Colorado River below Town Lake; Segment 1427 Onion Creek; Segment 1810 Plum Creek; and Segment 1808 Lower San Marcos River.⁶⁶

Segment 1248 San Gabriel/North Fork San Gabriel River is classified as "water quality limited" because advanced waste treatment facilities are required in order to maintain stream standards. It has elevated nitrogen (nitrite + nitrate) levels occurring throughout, originating from a combination of natural spring flow and point source discharges causing excessive algal growth,

⁶⁶Surface Water Quality Monitoring Program. 1996, The State of Texas Water Quality Inventory. Texas Natural Resource Conservation Commission.

as well as occasional exceedances of the standard criteria for pH and total dissolved solids. This segment is designated for contact recreation, high aquatic life habitat, and for use as a public water supply.

Segment 1244 Brushy Creek is classified as “water quality limited” because of TSWQS violations and because advanced waste treatment is required. Elevated phosphorous and nitrogen levels are persistently monitored downstream of the city of Round Rock, and these levels contribute to excessive growths of algae. Occasional exceedances of the standard criteria for chloride, total dissolved solids, and fecal coliform have also been recorded for this segment. This segment is designated for contact recreation, high aquatic life habitat, and for use as a public water supply.

Segment 1428 Colorado River below Town Lake is also classified as “water quality limited” for TSWQS violations and because advanced waste treatment is required. This segment is designated for contact recreation, exceptional aquatic life habitat, and for use as a public water supply. However, according to the TNRCC, the “segment only partially supports aquatic life use, because silver concentrations exceed the segment criteria below Webberville,” and “contact recreation use is not supported in the upper half of the segment just below Austin due to high levels of fecal coliform.” Also, nitrogen and phosphorous levels are elevated from the Walnut Creek confluence downstream to the end of the segment. Several exceedances of chloride and sulfate concentrations, and total dissolved solids have also been recorded for this segment.

Segment 1427 Onion Creek is classified as “water quality limited” because advanced waste treatment facilities are required in order to maintain stream standards. Fecal coliform bacteria levels and the average level of total dissolved solids exceed the standard criteria throughout the segment, while nitrogen levels exceed the criteria downstream of the town of Buda. Occasional exceedances of sulfate and phosphorous levels, and depressed dissolved oxygen concentrations have been recorded for this segment. This segment is designated for partial contact recreation, high aquatic life habitat, aquifer protection, and for use as a public water supply.

Segment 1810 Plum Creek is classified as “water quality limited” for TSWQS violations and because advanced waste treatment is required. Elevated phosphorous levels are of concern in the lower 25 miles of the segment, while elevated nitrogen levels are of concern in the lower three miles. This segment is designated for contact recreation and high aquatic life habitat, although these uses are unsupported in the lower three miles of the segment due to depressed dissolved oxygen concentrations and elevated fecal coliform bacteria levels.

Segment 1808 Lower San Marcos River is classified as “effluent limited.” This segment is designated for partial contact recreation, high aquatic life habitat, and for use as a public water supply. Elevated fecal coliform bacteria and nitrogen levels are of concern in a 50 mile stretch in the upper end of the segment.

Two smaller surface water features found within the corridor are described in Appendix D – Site-specific Receiving Water Assessments, of the TSWQS. These features are not classified but nonetheless they are included because a regulatory action has been taken or is anticipated to be taken by the TNRCC or because sufficient information exists to provide an aquatic life use designation. The features are: Berry Creek, a perennial tributary of the San Gabriel River in Williamson County; and Gilleland Creek, a perennial and intermittent tributary of the Colorado River in Travis County. Berry Creek is designated for contact recreation and high aquatic life habitat. It has a dissolved oxygen content of 5.0 milligrams per liter (mg/L). Gilleland Creek is designated for contact recreation and high aquatic life habitat. Its dissolved oxygen content is also 5.0 mg/L. Generally, there are not sufficient data on these waters to develop other conventional criteria and therefore values for those other criteria are considered to be the same as for the classified segment in which these creeks are located. All other surface waters within the SH 130 corridor (e.g., man-made stock ponds or impoundments, recreational lakes) are designated for the specific uses that are attainable or characteristic of those waters.

3.6.1.3 Flood Plains

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP), of which Williamson, Travis, Caldwell, and Guadalupe counties are all participating members, in accordance with 23 CFR § 650 Subpart A – Location and Hydraulic Design of Encroachment on Flood Plains. The design studies required by Subpart A “apply to all encroachments and to all actions which affect base flood plains.” Therefore, in order to determine the extent of the flood plains and regulatory floodways in the corridor, Federal Insurance Rate Maps (FIRMs) for all four counties, and the incorporated cities within them, were assessed. The results of preliminary design studies are summarized in **Section 4.0 Environmental Consequences**.

The extent of flood plains in the corridor, and specifically the zones which encompass the 100-year flood boundary, are shown graphically on **Plates 1-1 through 1-46 Human Environment & Flood Plains** in **Appendix A**.

3.6.2 Ground Water

The major aquifer found within the corridor is the Northern region of the Edwards Aquifer. Although the San Antonio region of the Edwards is a sole source aquifer for the city of San Antonio, this Northern region is not considered a sole source aquifer. Management of this region defaults to the TNRCC due to the absence of a separate ground water management district. The northernmost stretch of the SH 130 corridor in Williamson County crosses the downdip portion of the Edwards Aquifer and the Edwards Aquifer Recharge Zone (see **Figure 3.6-1**).

The Blackland Prairies, on which most of the remainder of the corridor is situated, imposes severe constraints on the availability of ground water. Although the Edwards Aquifer produces water from parts of the Blacklands, the overlying clay strata become progressively thicker as one proceeds east and ground water becomes more saline and tepid. A *bad-water line* delimits the eastern boundary of potable water from the Edwards Aquifer, and east of this line, ground water is brackish and locally tepid, with total dissolved solids (TDS) greater than 1,000 mg/L⁶⁷. Beyond this line to the east, ground water comes from the Trinity Aquifer. The water is deep, drilling costs are high, and the prospects for locating a dependable supply of good quality water are poor. Most of the SH 130 corridor occurs over this area.

Other sources of ground water include the Austin Chalk, the Wilcox Group, the Taylor/Navarro Groups, and alluvial and terrace deposits. These sources produce small to large quantities of fresh to moderately saline ground water. With the exception of the Wilcox Group, these water sources are localized and are not considered target aquifers. The Wilcox Group supplies ample quantities of fresh ground water through much of the area. All wells are subject to local regulation and protection under the State's Source Water Protection Program (SWPP).

The SWPP is a voluntary pollution prevention program created by the 1996 amendments to the Safe Drinking Water Act. It is an expansion of the previously existing Wellhead Protection Program (WHP) and was implemented to protect public ground water sources from possible contamination from surface or subsurface sources. All public water supply systems are eligible to participate in the program, which relies on volunteers to identify possible sources of contamination to their own systems. Under the program, a wellhead protection area, a quarter-mile radius

⁶⁷The General Chemical Quality or Standards considers water with a TDS count of between 1,000 and 3,000 mg/L to be slightly saline (Texas Department of Water Resources, 1983, "Report 276 Occurrence, Availability, and Quality of Ground Water in Travis County, Texas.")

protective buffer zone, is established around each public supply well. The TNRCC makes recommendations to the local watersystems about how to best manage the threat of contamination, but only local jurisdictions have the authority to prohibit certain development within the protected area to prevent possible contamination of the ground water.⁶⁸

A search of the state well inventory at the Texas Water Development Board (TWDB), supplemented with information provided by area property owners, revealed over 130 wells in the SH 130 corridor, 21 of which are public supply wells. These wells are identified and described in **Table 3.6-1** and their locations with respect to the eight build alternatives are shown on **Figures 3.6-2a, b, and c**. An assessment of the impacts to these wells is contained in **Section 4.0 Environmental Consequences**.

Table 3.6-1 Public Drinking Water Supply Wells in the SH 130 Corridor

Figure Reference Number	State Well Number	Population Served*	Depth (feet)	Source Aquifer	Total Dissolved Solids (mg/L)
1	58-19-627	—	200	Edwards	—
2	58-19-620	7,609	200	Edwards	—
3	58-19-619	7,609	200	Edwards	—
4	58-19-628	125	200	Edwards	338
5	58-19-906	6,850	425	Edwards	—
6	58-27-301	6,850	503	Edwards	505
7	58-27-306	6,850	432	Edwards	—
8	58-27-604	—	595	—	—
9	58-36-107	11,031	640	Edwards	—
10	58-43-904	—	61	Quaternary Alluvium	432
11	58-43-901	—	59	Quaternary Alluvium	554
12	58-44-709	25	81	Quaternary Alluvium	—
13	58-44-708	25	74	Quaternary Alluvium	—
14	58-44-707	25	65	Quaternary Alluvium	—

⁶⁸Terry, D., Source Water Protection Program, Texas Natural Resource Conservation Commission. August 04, 1999, Personal Communication.

Table 3.6-1 Public Drinking Water Supply Wells in the SH 130 Corridor
- continued -

Figure Reference Number	State Well Number	Population Served*	Depth (feet)	Source Aquifer	Total Dissolved Solids (mg/L)
15	58-44-710	11,031	62	Quaternary Alluvium	—
16	58-56-312	—	88	Quaternary Alluvium	398
17	58-56-601	—	39	Quaternary Alluvium	401
18	58-56-616	—	35	Quaternary Alluvium	600
19	58-56-613	—	33	Quaternary Alluvium	—
20	58-56-614	—	32	Quaternary Alluvium	—
21	67-10-801	210	34	Quaternary Alluvium	—

*Some wells are part of the same supply system. Therefore, more than one well may be serving the same population.
Note: — denotes that no data was available for this well.

Source: Texas Water Development Board, Located and Plotted well files; and the Texas Natural Resources Conservation Commission, 1999. Data compiled by C.M. Woodruff, Consulting Geologist.

3.7 ECOLOGICAL RESOURCES

This section provides a description of the ecological resources within the SH 130 study corridor. The following information is derived from record information sources such as private and governmental literature and color infrared or black and white aerial photography, as well as from general reconnaissance level field surveys and subsequent ecological analyses. Reference maps utilized in the investigation and analyses include United States Geological Survey 7.5 minute topographic quadrangles, National Wetland Inventories (NWI), Natural Resources Conservation Service (NRCS) Soil Surveys, the Geologic Atlas of Texas (GAT), the Vegetation Types of Texas,⁶⁹ and various project maps. Reconnaissance-level field investigations were conducted to collect more detailed baseline information and to ground-truth ecological conditions represented in the base references described above.

A summary of the regional environmental setting is presented in **Section 3.7.1** to provide a context for evaluation of the site-specific ecological resources within the SH 130 study corridor. The floral and faunal communities represented in the study corridor are characterized in **Sections 3.7.2** and **3.7.3**, respectively. Wetlands and other waters of the U.S. are discussed in **Section 3.7.4**,

⁶⁹Frye et al. 1984, The Vegetation Types of Texas, Including Cropland. Texas Parks and Wildlife Department, Pittman-Robertson Project W-107-K.

and sensitive ecological resources of special concern (including endangered and threatened species) are discussed relative to the proposed action and pertinent regulatory requirements in **Section 3.7.5**.

3.7.1 Regional Setting

3.7.1.1 Vegetation

The study corridor runs north and south roughly parallel and continuous with the transitional zone between the Post Oak Savannah vegetation area to the east, and the western-most finger of the Blackland Prairies vegetation area to the west (see **Figure 3.7-1**). The study corridor vegetation reflects aspects of both of these ecological zones, but is dominated by Blackland Prairies vegetation. Croplands and other agricultural developments, coupled with suburbanization within the study corridor have also contributed to a patchy vegetation pattern.

The Blackland Prairies Vegetational Region of Texas consists of nearly level to gently rolling topography. This region covers approximately 11.5 million acres from Grayson and Red River Counties in northeast Texas to Bexar County in the south-central region of the state. Blackland soils that dominate the region are so named for their uniform dark-colored calcareous clay component interspersed with gray acid sandy loams in the uplands, and silty clay loams and alluvium in the lower elevations.⁷⁰ The native vegetation of the Blackland Prairies is classified as true prairie, with little bluestem (*Schizachyrium scoparium* var. *frequens*) being a climax dominant.⁷¹ Big bluestem (*Andropogon gerardi*), yellow Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), hairy grama (*Bouteloua hirsuta*), sideoats grama (*B. curtipendula*), tall dropseed (*Sporobolus asper* var. *asper*), silver bluestem (*Bothriochloa saccharoides*), and Texas wintergrass (*Stipa leucotricha*) are important grasses in this vegetational association. Less than one-half of one percent of the Blackland Prairies is believed to remain in a relatively undisturbed state, and the majority of the remnants are relatively small and isolated. Agriculture is the primary reason for the disappearance of native prairies, as prairie soils are usually noted for their high fertility and value as cropland. Some isolated native prairie habitat patches occur throughout the original area of the Blackland Prairies. These assemblages provide a critical seed bank for this rare habitat type. With heavy grazing pressure, invading or increasing species including buffalograss (*Buchloe*

⁷⁰Hatch et al. 1990, Checklist of the vascular plants of Texas, Publication No. MP-1655. Texas Agricultural Experiment Station, Texas A&M University. College Station, Texas.

⁷¹Gould, F.W. 1975, Texas plants: a checklist and ecological summary. Texas A&M University Press. College Station, Texas.

dactyloides), Texas grama (*Bouteloua rigidiseta*), smutgrass (*Sporobolus indicus*), along with other annuals generally become prevalent.⁷² Improved pastures with introduced grass species, primarily King Ranch bluestem (*Bothriochloa ischaemum* var. *songarica*) and bermudagrass (*Cynodon dactylon*), are now common within the corridor.

The Post Oak Savannah Vegetational Area is a belt of oak-hickory woodlands, intermixed with tallgrass prairies. The Post Oak Savannah covers approximately eight and a half million acres of northeast and east-central Texas. Historically, the flora and fauna of the Post Oak Savannah was a mixture of grassland species of the Great Plains and Chihuahuan and Tamaulipan Deserts to the south and west, and the Temperate Deciduous Forests to the east. The two dominant tree species of the Post Oak Savannah are post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*). Much of the indigenous vegetation has been modified, primarily by the replacement of native grassland communities with introduced pasture grasses for livestock forage, croplands, and by timber harvesting operations. Typical upland soils of the Post Oak Savannah are acid sandy loams or sands, while bottomland soils range from acid sandy loams to clays.⁷³ The savannah habitat of this region is probably the remnant of a forest which was more extensive in the past during a moister climate. The oaks maintain their present distribution due to the favorable moisture-holding characteristics of the sandy soils. The prairie climax grasses remaining include little bluestem, Indiangrass, switchgrass, purpletop (*Tridens flavus*), and species of *Chasmanthium*. Aside from post oak and blackjack oak, elms (*Ulmus* spp.), sugar hackberry (*Celtis laevigata*), hickories (*Carya* spp.), and eastern red cedar (*Juniperus virginiana*) are scattered among the relatively short oaks. Although the area was extensively cropped previously, many of the areas have returned to native vegetation or have been developed into managed pastures.

3.7.1.2 Faunal Distributions

The study corridor lies on the western edge of the Texan Biotic Province, near its boundary with the Balconian Province (see **Figure 3.7-2**). The two provinces are separated by the Balcones Fault Zone. West of the fault zone, the Edwards Plateau supports a unique vegetation community associated with resistant Cretaceous limestone substrates. This vegetation, along with

⁷²Correll and Johnston, 1979, Manual of the Vascular Plants of Texas. University of Texas at Dallas. Dallas, Texas.

⁷³Hatch et al. 1990, Checklist of the vascular plants of Texas, Publication No. MP-1655. Texas Agricultural Experiment Station, Texas A&M University. College Station, Texas.

the associated rolling hilly topography and sparse soils, forms a physiographically discrete region which supports a unique ecosystem.⁷⁴ Unlike the Edwards Plateau, the physiography of the SH 130 study corridor is primarily a gently rolling prairie with deep fertile soils.

The Texan Biotic Province is characterized as an ecotonal region of forest and grassland faunal associations. However, most of the native vegetation has been replaced by cultivated crops, improved pasture grasses, or invasive brush. Consequently numerous native wildlife populations in the study corridor have been decimated. Many habitat specialists, including the least shrew (*Cryptotis parva*), Texas horned lizard (*Phrynosoma cornutum*), and northern bobwhite (*Colinus virginianus*) have undergone significant reductions in numbers and had their distributions severely altered, while other more generalistic species such as the coyote (*Canis latrans*), eastern meadowlark (*Sturnella magna*) and mourning dove (*Zenaida macroura*) apparently have increased in number and habitat occupation.

The Texan Biotic Province has no endemic vertebrate species, but major drainages traversing the province (i.e., Red, Trinity, Brazos, Colorado, and Guadalupe) support riparian forested corridors important to the western dispersal of species from the Austroriparian Biotic Province.⁷⁵ However, the Balcones Fault Zone continues to be a formidable barrier to dispersal into the region from the west. Some 49 species of mammals occur (or have historically occurred) in the Texan province, of which only eight are grassland species encroaching from the west, southwest, or north. Two species of land turtles, the three-toed (a forest species) and ornate box turtle (a grassland species), occur in the Texan and slightly more than half (9 of 16) of the lizard species are eastern forest species. The remaining seven are western grassland affiliates. Of the 39 species of snakes documented by Blair, 27 are eastern forest species and 12 are western. For amphibians, the Texan province serves as a barrier between most Austroriparian and Balconian endemics. Five salamanders (all Austroriparian) and 18 species of frogs and toads (13 of which are Austroriparian species) are documented by Blair in the Texan.

⁷⁴Blair, W.F. 1950, "The biotic provinces of Texas." Texas Journal of Science.

⁷⁵Ibid.

3.7.1.3 Aquatic and Wetland Features

This portion of Texas has abundant aquatic and wetland features, which are important to the regional ecology and economy. This is due to the diverse natural physiography, an adequate amount of annual precipitation (approximately 31.5 inches), and the development of numerous impoundments along many watercourses. Numerous streams traverse the Balcones Fault Zone west of the study corridor carrying runoff and deposits from the Edwards Plateau down to the rich Blackland Prairie. Many of the larger drainages support emergent marshlands and forested wetlands generally within the confines of their flood plains.

Numerous impoundments have been developed over the last few decades along the regional drainage network for public and livestock water supply, flood control, recreation and wildlife habitat. These impoundments range in size from small isolated stock ponds in upland settings to relatively large impoundments. Many natural aquatic and wetland features have been drained or otherwise modified to enhance agricultural operations and/or other developments. Despite these changes, the ecological resources associated with the variety of aquatic and wetland features currently in the area are rich in diversity and an integral part of the regional ecology.

3.7.2 **Vegetation Within the SH 130 Corridor**

Reconnaissance-level surveys were conducted along readily accessible portions of the corridor to identify vegetation assemblages present in the area. These surveys consisted of visits to numerous sites within the study corridor to determine logical categories for the vegetation being affected. General species composition for each of the specific types was noted, as was their aerial photographic signature. Vegetation types, along with aquatic habitat and human-induced development, were then mapped based upon these signatures.

Based on the field reconnaissance, general category types that were chosen include Upland Woods/Savannah, Mesquite-Hackberry Brush/Woods, Grasslands, Riparian Woods, Croplands, Aquatic, and Urban. A brief general description of these vegetation types is provided in the following paragraphs, and a graphic portrayal of their extent is shown on **Plates 2-1 through 2-46 Vegetation Types & Wetlands** in **Appendix A** of this FEIS. Impacts to each vegetation type by project alternative are discussed in **Section 4.0 Environmental Consequences**.

3.7.2.1 Upland Woods/Savannah

Upland areas within the study corridor are characterized as a mosaic of small irregular patches of open grasslands and woodlands. Common canopy species in various portions of the study corridor include live oak, post oak, blackjack oak, black hickory (*Carya texana*), elms, hackberry, and eastern red cedar (*Juniperus virginiana*). The understory dominants include yaupon, Texas persimmon (*Diospyros texana*), elbowbush (*Forestiera pubescens*), American beautyberry (*Callicarpa americana*), Texas colubrina (*Colubrina texensis*), agarito (*Berberis trifoliolata*), coralberry (*Symphoricarpos orbiculatus*), mesquite, greenbrier (*Smilax* spp.), poison ivy, and grapes (*Vitis* spp.).⁷⁶

In woodland openings and edges, prairie grasses including little bluestem, switchgrass, yellow Indiangrass, Texas wintergrass, silver bluestem, purpletop (*Tridens flavus*), beaked panicum (*Panicum anceps*), and narrowleaf grasses are typical in disturbed areas, whereas remnant prairie and relatively undisturbed sites tend to support threeawns, splitbeard bluestem (*Andropogon ternarius*), brownseed paspalum (*Paspalum plicatulum*), broomsedge bluestem, lovegrasses (*Eragrostis* spp.) and rosette grasses (*Dichanthelium* spp.). Western ragweed, lespedezas (*Lespedeza* spp.), prairie clovers (*Petalostemon* spp.), sneezeweeds (*Helenium* spp.) and crotons (*Croton* spp.) are common forbs of the savannah.⁷⁷

Mixed deciduous savannahs are herbaceous dominated communities distinguished by the presence of scattered mature trees. The dominant woody species in the savannahs include live oak, cedar elm, pecan, hackberry and mesquite. These areas generally support a woody component ranging from approximately 20 to 50 feet in height, and between 20 and 60 percent aerial canopy coverage. The grassland component of this cover type consists primarily of herbaceous species and/or invasive brush and ranges from improved pastures, dominated by introduced species, to oldfield or remnant prairie habitats, consisting largely of native species in various stages of succession. The dominant feature of the mixed deciduous savannahs is the larger trees, which provide certain wildlife benefits such as mast production and various forms of cover not generally

⁷⁶Ibid.

⁷⁷Correll and Johnston, 1979, Manual of the Vascular Plants of Texas. University of Texas at Dallas. Dallas, Texas.

available in grasslands alone. The savannah vegetation-type may be found along the edges of riparian woodlands (often within the flood plain), around farmsteads, and on upland slopes.

3.7.2.2 Mesquite-Hackberry Brush/Woods

A significant amount of grazing lands in the study corridor have been invaded by brush and/or small trees. The dominant woody species of this habitat include hackberry, honey mesquite, eastern red cedar, cedar elm, dryland willow (*Baccharis neglecta*), and huisache (*Acacia smallii*). This category includes woody associations ranging from approximately 30 to 95 percent aerial coverage. The average height of the woody vegetation ranges from about 3 to 30 feet. One of the primary characteristics of this habitat type is its variability. The composition and structure of the constituent vegetation ranges from site to site. Most are in various stages of succession correlating with irregular land use management practices, but all have a significant component of woody cover.

Vegetation communities consisting of a mixture of hackberry-elm woods and mesquite-cedar brush also occur throughout the study corridor. Most of these associations occur along the edges of riparian woodlands and oak-elm woodlands in the northern segment of the project corridor. Canopy coverage ranges from approximately 50 percent to 90 percent. The height of the woody component ranges from approximately 10 to 35 feet. Typical species include hackberry, cedar elm, live oak, mesquite, eastern red cedar, grape, sunflower, croton, southern dewberry, and a variety of herbaceous species.

3.7.2.3 Grasslands

The grasslands mapped in this study corridor include vegetation communities ranging from “improved” pastures, which are dominated by introduced grasses and maintained through the application of various management strategies, to oldfields, which generally support more diverse species assemblages dominated by native grasses and forbs. Vegetation in this category generally has less than 10 percent horizontal woody coverage; the majority of these areas are used for livestock grazing and as hay meadows.

Remnant patches of relatively undisturbed native prairie are extremely rare in Texas. Two tracts of grassland vegetation identified as native prairie are found within the SH 130 study corridor. One is the “MoKan Prairie” along Gattis School Road (see **Plate 1-8**), and the other is at

the Indiangrass Preserve surrounding Lake Walter E. Long. The MoKan Prairie site is characterized by a predominance of grass and forb species, including one-seed croton, prairie bluet, prairie bishop, side-oats grama, Texas cupgrass, little bluestem, and mock pennyroyal. Vegetation at the latter site is characterized by mature oak-cedar elm woodlands interspersed with small patches of native grass communities dominated by little bluestem and yellow Indiangrass.

The improved pastures within the study corridor are generally dominated by bermudagrass (*Cynodon* spp.), bahiagrass (*Paspalum notatum*), King Ranch bluestem, or other introduced grasses. Common invasive herbaceous species in improved pasture include silver croton (*Croton argyranthemus*), western ragweed, Texas broomweed (*Gutierrezia texana* var. *texana*), sunflower (*Helianthus* spp.), silverleaf nightshade (*Solanum elaeagnifolium*), and Texas wintergrass. Woody invaders of tame pastures are usually honey mesquite, huisache, dryland willow, and eastern red juniper.

Oldfield habitats, which result from natural vegetational succession in abandoned farm tracts, along fence rows, and along railroad rights-of-way, are found scattered throughout the study corridor. Most of these are currently or have been used for livestock grazing. Oldfields within the study area differ considerably from site to site, but are generally dominated by native grassland species and invasive brush. Typical communities consist of a mixture of grasses, forbs, shrubs, vines and trees. Commonly encountered herbaceous species include little bluestem, Indiangrass, windmillgrasses, buffalograss, silver bluestem, oldfield threeawn (*Aristida oligantha*), goldenrod (*Solidago* sp.), bundleflower (*Desmanthus* sp.), southern dewberry (*Rubus trivialis*), Florida snakecotton (*Froelichia floridana*), Virginia pepperweed (*Lepidium virginica*), and common sunflower (*Helianthus* sp.). Typical woody invaders include mesquite, eastern red cedar, cedar elm, and dryland willow.

3.7.2.4 Riparian Woods

The SH 130 corridor is drained by numerous drainages, ranging in size from the San Gabriel, Colorado, and San Marcos Rivers, to ephemeral creeks. Many of these drainages support mesic riparian woodlands arranged in irregular corridors and usually confined to the flood plains. The most significant riparian habitat within the study corridor is associated with the flood plains of the above-mentioned rivers, as well as with Berry, Brushy, Wilbarger, Gilleland, Walnut, Onion, Decker, Maha, and Plum Creeks. This habitat and associated transition to riverine wetlands provide

the most valuable and diverse natural communities within the study corridor due in part to their relatively undeveloped states and contiguous patterns along drainages.

The riparian woodlands range from sparse sugarberry-cedar elm open-canopy woods along the headwaters of drainages, to mixed deciduous closed canopy hardwood bottomland forests interspersed with emergent marshlands on more developed creeks and major rivers. Typical woodland canopies are dominated by deciduous trees including pecan, American elm (*Ulmus americana*), Texas sugarberry, box elder (*Acer negundo*), American sycamore (*Platanus occidentalis*), and Texas ash (*Fraxinus texensis*). Other common trees of the riparian habitat include black willow, red mulberry (*Morus rubra*), osage-orange, eastern cottonwood, and bald cypress (*Taxodium distichum*). The height of the woodland canopy ranges from approximately 20 to 50 feet. Canopy coverage generally varies from 70 percent to 90 percent, with openings being occupied by secondary tree and shrub species including hackberry (*Celtis* spp.), chinaberry (*Melia azedarach*), rough-leaf dogwood (*Cornus drummondii*), and American elderberry (*Sambucus canadensis*). The composition of the typical understory consists of mixed trees, shrubs and woody vines including recruited juveniles of the canopy, deciduous holly (*Ilex decidua*), American elderberry, Virginia creeper (*Parthenocissus quinquefolia*), catbrier (*Smilax bona-nox*), mustang grape (*Vitis mustangensis*), and poison ivy (*Toxicodendron radicans*).

The herbaceous component of the riparian habitat is characterized by a diverse array of mesic adapted forbs, grasses, and aquatic and semi-aquatic species. Hydric vegetation communities are common along major drainages and associated remnant oxbows and channels. Typical herbaceous species include broomsedge bluestem (*Andropogon virginicus*), woodoats (*Chasmanthium latifolium*), Virginia wildrye (*Elymus virginicus*), giant ragweed (*Ambrosia trifida*), cocklebur (*Xanthium strumarium*), frostweed (*Verbesina virginica*), smartweed (*Polygonum* spp.) and seacoast sumpweed (*Iva annua*). Common herbaceous aquatic plants associated with these habitats include sedges (*Carex* spp.), rushes (*Juncus* spp.), umbrella-sedges (*Cyperus* spp.), cattails (*Typha* sp.), rattlebush (*Sesbania drummondii*), water millet (*Echinochloa* spp.), smartweed, water hyacinth (*Eichhornia crassipes*), and spider lily (*Hymenocallis caroliniana*).

3.7.2.5 Cropland

Cultivated croplands account for a significant portion of the vegetation throughout the entire study corridor. The chief crops grown include grain sorghum, cotton, wheat, corn, oats and various grasses for hay. Many of the cultivated areas are left fallow during non-growing seasons, while others are employed for growing cool-season grasses for livestock grazing. Non-cultivated vegetation along fencerows, roads, wetland margins and around farm facilities generally varies, but often consists of a mixed growth of trees, shrubs and herbaceous stands. Common species of these edge communities include sugarberry, live oak, coma (*Bumelia lanuginosa*), cedar elm, grape, giant ragweed, sunflowers, croton, coastal bermuda and Johnsongrass.

3.7.2.6 Aquatic

The aquatic resources of the study corridor are diverse and important elements in the landscape and regional ecosystem. Aquatic habitats generally consist of water-covered land, and range from small isolated stock impoundments to large riverine complexes of open water and wetland habitats. Common herbaceous aquatic plants associated with these habitats range from filamentous algae to submergent and emergent vascular species. Common aquatic species within the study corridor include sedges (*Carex* spp.), rushes (*Juncus* spp.), umbrella-sedges (*Cyperus* spp.), cattails (*Typha* sp.), rattlebush (*Sesbania drummondii*), water millet (*Echinochloa* spp.), seedbox (*Ludwigia* spp.), alligator weed (*Alternanthera philoxeroides*), smartweed (*Polygonum* spp.), water hyacinth (*Eichhornia crassipes*), and spider lily (*Hymenocallis caroliniana*).

3.7.2.7 Urban

The urban category includes residential neighborhoods and farmstead facilities, as well as industrial and commercial operations. This cover type varies considerably within the study corridor. Despite the fact most of these areas are highly disturbed, they can provide habitat for some floral and faunal assemblages. The trees range from native pecans, cedar elms, and live oaks to numerous ornamental species. Herbaceous communities consist of mixtures of ornamentals and indigenous vegetation from surrounding habitats. Disturbed cover types in the study corridor include gravel and caliche mining pits, and other operations involving large-scale human disturbance. Primary vegetation within these zones are opportunistic species of shrubs and trees including

Chinese tallow trees, dryland willow, sycamore, black willow, and other species associated with pioneering conditions.

3.7.3 Wildlife Within the SH 130 Corridor

This section provides a summary of the faunal resources found within the SH 130 corridor. Terrestrial fauna of potential occurrence within the study corridor are described by vegetation types as presented in **Section 3.7.2**, which represent generalized habitat types. The following paragraphs provide general descriptions of typical wildlife communities potentially occurring within the various habitats of the SH 130 study corridor. In addition to providing the life requisites of numerous resident species, habitat types provide migratory and dispersing wildlife with the essentials of cover, food, and water.

The **Upland Woods/Savannah** habitat occurs in patches throughout the study corridor. Upland woods are characterized by a nearly closed canopy comprised of mast producing trees and vines including oaks, black hickory, hackberry, hawthorns, grapes, and southern dewberry, which provide sustenance for numerous wildlife species. Deep layers of leaf litter and humus on the ground in woodlands, coupled with various degrees of understory development create numerous microniches occupied by a diverse biological community within this habitat. These woodlands can be inhabited by a variety of fauna including white-tailed deer (*Odocoileus virginianus*), common gray fox (*Urocyon cinereoargenteus*), eastern woodrat (*Neotoma floridana*), nine-banded armadillo (*Dasypus novemcinctus*), white-footed mouse (*Peromyscus leucopus*), eastern fox squirrel (*Sciurus niger*), brown thrasher (*Toxostoma rufum*), tufted titmouse (*Parus bicolor*), Carolina chickadee (*Parus carolinensis*), ladder-backed woodpecker (*Picoides scalaris*), fence lizard (*Sceloporus undulatus*), Texas rat snake (*Elaphe obsoleta*), ground skink (*Scincella lateralis*), and copperhead snake (*Agkistrodon contortrix*). Savannahs are utilized by a combination of grassland and woodland species. The vegetation cover is predominantly similar to grassland, but the relatively large trees provide alternative forms of food and shelter not commonly associated with grasslands alone. In addition to the common grassland species described below, examples of wildlife likely inhabiting the savannahs include fox squirrels, raccoon, great-horned owls, ruby-crowned kinglet, red-tailed hawk (*Buteo jamaicensis*), and numerous resident and migratory songbirds.

The **Mesquite-Hackberry Brush/Woods** are characterized as broad habitat types dominated by woody shrubs and small to medium-sized trees in varying levels of succession. Within

the SH 130 study corridor, these areas are generally oldfields that have been invaded by persistent species including mesquite, eastern red cedar, huisache, dryland willow, coma, and various other brush species. These habitat types are widespread throughout the study corridor and border virtually every other habitat, forming transitional zones between woodlands and grasslands and providing significant stratified cover and edge habitat for a variety of wildlife including: nine-banded armadillo, white-footed mouse, black-tailed jackrabbit (*Lepus californicus*), Eastern cottontail (*Sylvilagus floridanus*), hispid cotton rat (*Sigmodon hispidus*), mourning dove, crested caracara (*Polyborus plancus*), Northern bobwhite (*Colinus virginianus*), red-bellied woodpecker (*Melanerpes carolinus*), greater roadrunner, striped skunk (*Mephitis mephitis*), eastern woodrat (*Neotoma floridana*), hispid pocket mouse (*Perognathus hispidus*), coyote (*Canis latrans*), common barn-owl (*Tyto alba*), turkey vulture (*Cathartes aura*), Northern harrier (*Cuercus cyaneus*), American kestrel (*Falco sparverius*), loggerhead shrike (*Lanius ludovicianus*), prairie-lined racerunner (*Cnemidophorus sexlineatus viridis*), and Western diamondback rattlesnake (*Crotalus atrox*).

For this study, **Grasslands** include introduced pasture, herbaceous-dominated oldfield, and the rare native prairie communities. All are dominated by herbaceous vegetation, including both grasses and forbs. Oldfields are former crop or improved range lands that have been abandoned or otherwise left dormant, allowing native and/or introduced species to become established. The most important factors related to the lack of native prairie vegetation within the region are extensive agricultural developments over the last 150 years, the demise of important keystone prairie wildlife species, and the inhibition of fire, all of which were important in maintaining the integrity of the prairie community.⁷⁸ Common wildlife species that may utilize present-day grasslands within the SH 130 corridor include coyote, plains pocket gopher (*Geomys bursarius*), fulvous harvest mouse (*Reithrodontomys fulvescens*), eastern cottontail, northern harrier, northern mockingbird, eastern meadowlark (*Sturnella magna*), field sparrow (*Spizella pusilla*), common nighthawk (*Chordeiles minor*), eastern kingbird (*Tyrannus tyrannus*), eastern hognose snake (*Heterodon platyrhinos*), and speckled kingsnake (*Lampropeltis getulus holbrooki*).

The **Riparian Woods** are distinct zones generally following the flood plains of major and minor drainages. The physical and functional diversity support extremely productive resident faunal associations, and provide other wildlife with the essential habitat elements for travel and

⁷⁸Risser, P.G., 1988, "Diversity in and among grasslands." *Biodiversity*. National Academy Press; and Howe, H.F. 1994. "Managing Species Diversity in Tallgrass Prairie: Assumptions and Implications." *Conservation Biology*.

dispersal corridors.⁷⁹ These riparian-wetland complexes provide adequate food, protective cover and water for all types of wildlife. They also function as a refuge for breeding, wintering and migratory species including colonial waterbirds, aquatic and wetland birds of the Gulf Coast, waterfowl and neotropical songbirds.

The riparian vegetation corridors provide the ecological requirements for numerous wildlife species including raccoon (*Procyon lotor*), white-tailed deer, white-footed mouse, swamp rabbit (*Sylvilagus aquaticus*), barred owl (*Strix varia*), wood duck (*Aix sponsa*), northern cardinal (*Cardinalis cardinalis*), western ribbon snake (*Thamnophis proximus*), great plains narrow-mouthed toad (*Gastrophryne olivacea*), and Blanchards cricket frog (*Acris crepitans blanchardi*). In addition, numerous migratory bird species, including waterfowl, raptors, shorebirds, wading birds, and songbirds, utilize this habitat as stop-over points between wintering and nesting sites. Avian species known to winter in this part of central Texas include Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), hairy woodpecker (*Picoides villosus*), water pipit (*Anthus rubescens*), brown creeper (*Certhia americana*), winter wren (*Troglodytes troglodytes*), ruby-crowned kinglet (*Regulus satrapa*), hermit thrush (*Catharus guttatus*), and brown thrasher. Examples of nesting residents include summer tanagers (*Piranga rubra*), indigo buntings (*Passerina cyanea*), blue-gray gnatcatcher (*Polioptila caerulea*), and yellow-billed cuckoo (*Coccyzus americanus*). Examples of neotropical migrant species observed utilizing the Onion Creek and Colorado River riparian corridors include northern oriole (*Icterus galbula*), scarlet tanager (*Piranga olivacea*), blue grosbeak (*Guiraca caerulea*), and red-eyed vireo (*Vireo olivaceus*).

The drainages within the study corridor also provide habitat for numerous semi-aquatic species, including American beaver (*Castor canadensis*), great egrets (*Casmerodius albus*), green-backed heron (*Butorides striatus*), and a diverse assemblage of reptiles and amphibians. Turtles such as red-eared sliders (*Trachymes scripta*), spiny softshells (*Apalone* spp.), stinkpots (*Sternotherus odoratus*), and Texas river cooters (*Pseudemys texana*) are commonly encountered. Other reptiles which are abundant in this type of habitat are water snakes (*Nerodia* spp.), cottonmouths (*Agkistrodon piscivorus*), and green anoles. Some of the common amphibians inhabiting the riparian zone include great plains narrow-mouthed toad, cricket frogs (*Acris crepitans*), bullfrogs (*Rana catesbeiana*), gray tree frogs (*Hyla versicolor/chrysocelis*), chorus frogs (*Pseudacris* spp.), and southern leopard frogs (*Rana sphenoccephala*).

⁷⁹United States Fish and Wildlife Service (USFWS). 1985. Texas Bottomland Hardwood Preservation Program. Category 3. Department of the Interior Final Concept Plan. Albuquerque, New Mexico.

Croplands and their associated fence rows provide suitable habitat for numerous ubiquitous grassland species including coyote, cotton rat, scissor-tailed flycatcher (*Tyrannus forficatus*), mourning dove, and Texas rat snake. These habitats are generally subjected to varying degrees of periodic modifications which include cultivation, the application of herbicide and/or pesticides, and intense grazing pressure. As a result they are characterized as highly variable with respect to vegetative composition and, to varying degrees, wildlife species composition.

The **Aquatic** habitats associated with the SH 130 corridor support a diverse assemblage of biotic communities. Several aquatic habitat types were identified during limited field investigations along the project corridor, including 1) shallow, fast-moving riffles with cobble/gravel substrate; 2) deep, low velocity pools on streams and rivers; and 3) quiescent backwater areas with silt and detritus substrates.

Riffles provide suitable habitat for numerous fishes including logperch (*Percina caprodes*), dusky darters (*Percina sciera*), orangethroat darters (*Etheostoma spectabile*), central stonerollers (*Camptostoma anomalum*), and mimic shiners (*Notropis volucellus*). Other organisms which utilize this habitat type include insects such as stoneflies and caddisflies whose larvae attach to the substrate and depend on the highly oxygenated waters. The deeper pools may be occupied by fishes such as largemouth bass (*Micropterus salmoides*), gray redhorse (*Moxostoma congestum*), bluegill (*Lepomis macrochirus*), and channel catfish (*Ictalurus punctatus*), while shallow pools provide habitat for Guadalupe bass (*Micropterus treculi*), longear sunfish (*Lepomis megalotis*), and bullhead minnows (*Pimephales vigilax*). Pools in general can be occupied by numerous invertebrate groups including protozoans, flatworms, rotifers, snails, oligochaet worms, leeches, and numerous arthropods. Some of the more common arthropods including crustaceans, along with the larvae of insects such as mayflies and dragonflies also inhabit these pools.

The backwater habitats are suitable for mosquitofish (*Gambusia affinis*), blackstripe topminnows (*Fundulus notatus*), largemouth bass, and numerous other species. The quiescent waters associated with this habitat are fairly dynamic. They provide refuge for fauna during flood events and since allochthonous materials are often consolidated there, they are processing centers for organic matter. The variability of the water quality generally corresponds to dynamism in the composition of faunal communities. Common invertebrates associated with backwater habitats are similar to those expected at typical pool habitats. In addition, numerous species of

detritivores and decomposers may inhabit the backwaters where an abundant supply of organic matter accumulates.

Other semi-aquatic organisms such as beavers, egrets, kingfishers, and waterfowl provide a crucial link between the terrestrial and aquatic environment. These and other organisms assist in the exchange of energy, nutrients, and organic matter which drives the local ecosystem. The aquatic environment within the study corridor is also heavily influenced by and associated with the surrounding drainages. During flood events the tributaries provide a refuge for aquatic organisms and during droughts they contribute to discharge from spring flow.

3.7.4 Wetlands and Other Waters of the U.S.

3.7.4.1 Regulatory Overview

The term “waters of the U.S.” has broad meaning and incorporates both deepwater aquatic habitats and special aquatic sites, including wetlands, as listed below:

- a. The territorial seas with respect to the discharge of fill material.
- b. Coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including their adjacent wetlands.
- c. Tributaries to navigable waters of the United States, including adjacent wetlands.
- d. Interstate waters and their tributaries, including adjacent wetlands.
- e. All other waters of the United States not identified above, such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable waters of the United States, the degradation or destruction of which could affect interstate commerce.

Jurisdictional wetlands (i.e., wetlands that are subject to permitting under Section 404 of the Clean Water Act, as discussed below) are transitional areas between terrestrial and aquatic systems that are inundated or saturated by surface or ground water at a duration and frequency sufficient to support a prevalence of hydrophytic vegetation and anaerobic soil conditions under normal circumstances. Jurisdictional wetlands are defined by the 1987 Corps of Engineers Wetlands

Delineation Manual⁸⁰ according to three criteria: 1) the presence of hydrophytic vegetation; 2) hydric soil characteristics; and 3) wetland hydrology.

Federal mandates have been issued requiring project review and mitigation (when necessary) for projects that impact wetlands and other waters of the U.S. Under Section 404 of the Clean Water Act, the Secretary of the Army, through the Chief of Engineers, issues permits for the discharge of dredged or fill materials into waters of the U.S., including wetlands. The United States Corps of Engineers (USCE) also issues permits under Section 10 of the Rivers and Harbors Act of 1899 (RHA) (also 33 USC 403), for filling, dredging and construction in certain waters of the U.S. Section 9 of the RHA (also 33 USC 114/115) requires coordination with the U.S. Coast Guard before constructing or modifying a bridge structure crossing over a navigable waterway.

When the Section 404 permitting process is initiated for an individual permit, several federal agencies automatically become involved. The Environmental Protection Agency (EPA) maintains program oversight (over the USCE) and makes final determinations as to the extent of Clean Water Act jurisdiction. The Fish and Wildlife Coordination Act (also 48 Stat. 401 as amended 16 USC 661 et seq.) mandates review of Section 404 Permits by the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS).

3.7.4.2 Potential Wetlands and Other Jurisdictional Waters

This section provides a brief regional overview of the potential wetlands occurring within the SH 130 study corridor and the methodology by which they were identified. The potential wetland features discussed here are based on the U.S. Fish and Wildlife Service (USFWS) System, as developed by Cowardin et al., in 1979, and mapped on National Wetland Inventory (NWI) maps. It should be pointed out that the NWI wetland classification system is not the same as the system developed by the U.S. Army Corps of Engineers for determination of true jurisdictional wetlands under Section 404. However, NWI maps provide a good first estimate of the number, type, and extent of features that may qualify as jurisdictional wetlands.

⁸⁰Environmental Laboratory. 1987, Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. United States Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

In general, the Cowardin system⁸¹ differentiates between wetland resources upon the basis of ecological systems, subsystems, and classes. Systems are broad groupings of wetland habitats which share similar hydrology, geomorphology, chemistry, and biological characteristics. The major systems include Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Within the SH 130 study corridor, only Riverine, Lacustrine, and Palustrine systems occur. These terms are generally defined as follows:

- | | |
|--------------------------|--|
| <i>Riverine</i> | includes wetlands and deepwater habitats confined to a channel which are not dominated by hydric species. |
| <i>Lacustrine</i> | those wetlands and deepwater habitats exceeding 20 acres in size with less than 30 percent areal vegetation cover. |
| <i>Palustrine</i> | includes all non-tidal wetlands dominated by persistent hydric vegetation and includes non-vegetated wetlands less than 20 acres in size which are not riverine. Examples include marshes, swamps, bogs, and wet prairies. |

Aerial photographic analysis was also used to identify and confirm the location and extent of potential wetland resources within the study corridor. Limited field verification of the occurrence of potential wetlands was then conducted, where access was available, to further assess the resource. Jurisdictional wetland field determinations and delineations will be performed following the determination of a preferred alternative.

The potential wetland features identified within the SH 130 corridor, using the protocol described above, are shown on **Plates 2-1 through 2-46 Vegetation Types & Wetlands** in **Appendix A** of this FEIS. These features generally fall into three categories: 1) stream crossings, 2) palustrine wetlands associated with drainages or flood plains, or 3) probable non-jurisdictional upland stock impoundments.

Potential wetlands and other waters of the U.S. occur in various sizes within the SH 130 study corridor. Most features are associated with relatively well developed stream systems traversing the study corridor. Of these, larger drainages such as the San Gabriel, Colorado, and San Marcos Rivers, and Berry, Brushy, Wilbarger, Gilleland, Walnut, Onion, Decker, Maha, and Plum Creeks and their associated flood plains have the highest potential to support wetland complexes.

⁸¹Cowardin et al., 1979, Classification of Wetlands and Deepwater Habitats of the United States. USFWS, Office of Biological Services. Washington D.C. Pub. No. FWS/OBS-79/31.

Jurisdictional boundaries along the numerous smaller creeks and streams are, in many cases, likely to be limited to the channel boundaries, unless an on-channel impoundment or wide flood plain occurs along the drainage. Typical vegetation and wildlife associated with wetlands and other jurisdictional waters in the study corridor should be similar to that discussed for the **Riparian Woods** and **Aquatic** habitat types in **Sections 3.7.2** and **3.7.3**.

3.7.5 Threatened and Endangered Species

The purpose of this section is to provide a brief summary of the listing and monitoring procedures employed by the federal and state governments, to provide a list of threatened and endangered species potentially occurring in the SH 130 corridor, and to provide brief ecological descriptions of these sensitive resources.

3.7.5.1 Listing and Monitoring Process

Federal – U.S. Fish and Wildlife Service – The USFWS has legislative authority to list and monitor the status of species whose populations are considered to be imperiled. This federal legislative authority for the protection of threatened and endangered species issues from the Endangered Species Act of 1973, and its subsequent amendments. Regulations supporting this act are codified and regularly updated in Sections 17.11 and 17.12 of Title 50 of the Code of Federal Regulations. The federal process stratifies potential candidates based upon the species' biological vulnerability. The vulnerability decision is based upon many factors affecting the species within its range and is always linked to the best scientific data available to the USFWS at the time. Species listed as Endangered (E) or Threatened (T) by the USFWS are provided full protection. This protection includes a prohibition of indirect take such as destruction of critical habitat. Additionally, species which have been proposed for listing (including publication in the Federal Register) as Endangered or Threatened are granted limited protection under the act until a decision is reached. The Endangered Species Act and accompanying regulations provide the necessary authority and incentive for the individual states to establish their own regulatory vehicle for the management and protection of threatened and endangered species.

The category “C” is reserved for candidates which are under serious consideration for inclusion onto the threatened or endangered species list. Although quite possibly sensitive and vulnerable resources, C species as well as species that appeared under other now-defunct “candidates

for listing” categories (C1, C2, C3, etc.) are afforded no formal protection under the Endangered Species Act. Species that had been placed in the latter two categories are now commonly (albeit unofficially) referred to as “Species of Concern.”

State – Texas Parks and Wildlife Department (TPWD) – Endangered species legislation passed in Texas in 1973 (amended in 1981, 1985, and 1987) and subsequent 1975 and 1981 revisions to the Parks and Wildlife Code established a state regulatory vehicle for the management and protection of threatened and endangered species.⁸² Chapters 67 and 68 (the 1975 revisions) of the code authorizes TPWD to formulate lists of threatened and endangered fish and wildlife species and to regulate the taking or possession of the species. A 1981 revision and 1985 amendment to the code provides authority for TPWD to designate plant species as threatened or endangered and to prohibit commercial collection or sale of these species without permits.

Under this statutory authority, TPWD regulates the taking, possessing, transporting, exporting, processing, selling or offering for sale, or shipping of endangered or threatened species of fish, wildlife and plants.⁸³ Neither specific criteria for the listing of plant and animal species, nor protection from indirect take (i.e., destruction of habitat or unfavorable management practices) are found in either of the above mentioned statutes or regulations. Functionally, the TPWD oversees endangered resources through the Wildlife Division.

3.7.5.2 List of Endangered, Threatened, Candidate Species, and Other Species of Concern

The list of rare species potentially occurring in the SH 130 study corridor vicinity issues from the above mentioned federal and state regulations, lists, and supplementary information from the Wildlife Diversity Program in the Wildlife Division of the Texas Parks and Wildlife Department. **Table 3.7-1** presents the current status of those sensitive species and footnotes below the table explaining the rationale for the various classifications.

⁸²Texas Parks and Wildlife Department (TPWD), Resource Protection Division. 1991, Endangered Resources Annual Status Report.

⁸³TPWD regulations are found at Sections 65.171 - 65.177, 65.181-65.184, and 69.01-69.14 of the Texas Administrative Code (for Chapters 67, 68, and 88 of the TPWD Code, respectively).

3.7.5.3 Potential Occurrences and Ecological Requirements

The following section provides a listing of the federal and state-listed endangered and threatened species of known or potential occurrence in the SH 130 corridor. Proposed-listed species, as well as Candidate species and Species of Concern are also identified. The ecological requirements of each species or group of species will be evaluated relative to existing ecological conditions within the study corridor.

Table 3.7-1 Endangered, Threatened, Proposed, and Candidate Species and Other Species of Concern Reported for Williamson, Travis, Caldwell, and Guadalupe Counties, Texas

COMMON NAME	SCIENTIFIC NAME	STATUS	
		USFWS	TPWD
<u>Invertebrates</u>			
Balcones Cave Amphipod*	<i>Stygobromus balconius</i>	SOC	NL
Bifurcated Cave Amphipod*	<i>Stygobromus bifurcatus</i>	SOC	NL
Tooth Cave Pseudoscorpion*	<i>Tartarocreagris texana</i>	E	NL
Tooth Cave Spider*	<i>Neoleptoneta myopica</i>	E	NL
Bee Creek Cave Harvestman*	<i>Texella reddelli</i>	E	NL
Bone Cave Harvestman*	<i>Texella reyesi</i>	E	NL
Tooth Cave Ground Beetle*	<i>Rhadine persephone</i>	E	NL
Coffin Cave Mold Beetle*	<i>Batrissodes texanus</i>	E	NL
Kretschmarr Cave Mold Beetle*	<i>Texamaurops reddelli</i>	E	NL
Warton Cave Spider*	<i>Cicurina wartoni</i>	C	NL
<u>Vertebrates</u>			
Smalleye Shiner	<i>Notropis buccula</i>	SOC	NL
Blue Sucker	<i>Cycleptus elongatus</i>	SOC	T
Guadalupe Bass	<i>Micropterus treculi</i>	SOC	NL
Texas Salamander*	<i>Eurycea neotenes</i>	SOC	NL
Barton Springs Salamander*	<i>Eurycea sosorum</i>	E	NL
Edwards Plateau Springs Salamander*	<i>Eurycea</i> sp. 7	SOC	NL
Georgetown Salamander	<i>Eurycea</i> sp. 5	SOC	NL
Jollyville Plateau Salamander	<i>Eurycea</i> sp. 1	SOC	NL
Blanco Blind Salamander*	<i>Eurycea robusta</i>	SOC	T
Cagle's Map Turtle	<i>Graptemys caglei</i>	C	NL
Texas Tortoise	<i>Gopherus berlandieri</i>	NL	T
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	SOC	T
Texas Garter Snake	<i>Thamnophis sirtalis annectens</i>	SOC	NL
Timber Rattlesnake	<i>Crotalus horridus</i>	SOC	T
White-faced Ibis	<i>Plegadis chihi</i>	SOC	T

Table 3.7-1 Endangered, Threatened, Proposed, and Candidate Species and Other Species of Concern Reported for Williamson, Travis, Caldwell, and Guadalupe Counties, Texas
- continued -

COMMON NAME	SCIENTIFIC NAME	STATUS	
		USFWS	TPWD
Swallow-tailed Kite	<i>Elanoides forficatus</i>	SOC	T
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T
Whooping Crane	<i>Grus americana</i>	E	E
Brown Pelican	<i>Pelecanus occidentalis</i>	E	E
Loggerhead Shrike	<i>Lanius ludovicianus</i>	SOC	NL
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	SOC	NL
Mountain Plover	<i>Charadrius montanus</i>	PT	NL
Texas Olive Sparrow	<i>Arremonops rufivirgatus rufivirgatus</i>	SOC	NL
Wood Stork	<i>Mycteria americana</i>	NL	T
Piping Plover	<i>Charadrius melodus</i>	T	T
Interior Least Tern	<i>Sterna antillarum athalassos</i>	E	E
Black-capped Vireo*	<i>Vireo atricapillus</i>	E	E
Golden-cheeked Warbler*	<i>Dendroica chrysoparia</i>	E	E
Southeastern Myotis Bat	<i>Myotis austroriparius</i>	SOC	NL
<u>Plants</u>			
Bracted Twistflower*	<i>Streptanthus bracteatus</i>	SOC	NL
Canyon Mock-orange*	<i>Philadelphus ernestii</i>	SOC	NL
Big Red Sage*	<i>Salvia penstemonoides</i>	SOC	NL
Texabama Croton*	<i>Croton alabamensis</i> var. <i>texensis</i>	SOC	NL
Correll's False Dragon-Head	<i>Physostegia correllii</i>	SOC	NL

* Edwards Plateau species not likely to occur in the SH 130 corridor.

USFWS: United States Fish and Wildlife Service Status

- E Endangered (in danger of extinction throughout all or a significant portion of its range)
T Threatened (likely to become endangered within the foreseeable future)
P(E/T) Proposed for listing as Threatened and Endangered and under consideration by the Secretary of the Interior.
C Candidate, USFWS has substantial information on the biological vulnerability and threats to support proposing to list as threatened or endangered.
SOC Species of Concern - Species identified as "at risk" by various Federal, State and local entities.

TPWD: Texas Parks and Wildlife Department Status

- E Listed as Endangered in the State of Texas
T Listed as Threatened in the State of Texas
NL Not Listed

Sources

50 CFR Part 17. January 6, 1989. Endangered and Threatened Wildlife and Plants; Animal Notice of Review. Department of the Interior. Fish and Wildlife Service.

Table 3.7-1 Endangered, Threatened, Proposed, and Candidate Species and Other Species of Concern Reported for Williamson, Travis, Caldwell, and Guadalupe Counties, Texas
- continued -

50 CFR Part 17.11 & 17.12. April 15, 1990. Endangered and Threatened Wildlife and Plants; Animal Notice of Review. Department of the Interior. Fish and Wildlife Service.

Texas Parks and Wildlife Department - Wildlife Diversity Program Wildlife Division, Texas Threatened and Endangered Species pwd-LF-w 3000-017 (3/99).

Texas Biological and Conservation Data System, Wildlife Diversity Program, Wildlife Division, Texas Parks and Wildlife Department.

Texas Biological and Conservation Data System, Texas Parks and Wildlife Department, Wildlife Diversity Program, county lists for Texas' special species for Williamson, Travis, Caldwell and Guadalupe Counties.

3.7.5.4 Endangered Species Associated with the Edwards Plateau

The flora and fauna of the Edwards Plateau and associated Balcones Escarpment form a distinct and unique biotic assemblage. I-35 is situated just east of the features influenced by the Balcones Fault Zone, which forms a fairly distinct ecological and physiographical boundary. Most of the sensitive species associated with the plateau and canyonlands of the Balcones Fault Zone are known only from locations west of I-35. These species are not likely to be adversely affected by the proposed action. The following is a list of those species:

Invertebrates

Balcones Cave Amphipod (*Stygobromus balconis*)
Bifurcated Cave Amphipod (*Stygobromus bifurcatus*)
Tooth Cave Pseudoscorpion (*Tartarocreagris texana*)
Tooth Cave Spider (*Neoleptoneta myopica*)
Bee Creek Cave Harvestman (*Texella reddelli*)
Bone Cave Harvestman (*Texella reyesi*)
Tooth Cave Ground Beetle (*Rhadine persephone*)
Coffin Cave Mold Beetle (*Batrisodes texanus*)
Kretschmarr Cave Mold Beetle (*Texamaurops reddelli*)
Wartons' Cave Spider (*Cicurina wartoni*)

Vertebrates

Black-capped Vireo (*Vireo atricapillus*)
Golden-cheeked Warbler (*Dendroica chrysoparia*)
Barton Springs Salamander (*Eurycea sosorum*)

Texas Salamander (*Eurycea neotenes*)
Edwards Plateau Springs Salamander (*Eurycea* sp. 7)
Blanco Blind Salamander (*Eurycea robusta*)

Plants

Bracted Twist-flower (*Streptanthus bracteatus*)
Canyon Mock-orange (*Philadelphus ernestii*)
Big Red Sage (*Salvia penstemonoides*)
Texabama Croton (*Croton alabamensis* var. *texensis*)

3.7.5.5 Occurrences and Ecological Requirements of Protected or Otherwise Sensitive Species

Migratory Avian Species

Protected or otherwise sensitive birds of potential occurrence within the study corridor consist largely of migratory species. These include the bald eagle (*Haliaeetus leucocephalus*), swallow-tailed kite (*Elanoides forficatus*), whooping crane (*Grus americana*), piping plover (*Charadrius melodus*), western snowy plover (*Charadrius alexandrinus nivosus*), mountain plover (*Charadrius montanus*), interior least tern (*Sterna antillarum athalassos*), brown pelican (*Pelecanus occidentalis*), wood stork (*Mycteria americana*), and white-faced Ibis (*Plegadis chihi*). These species utilize the area primarily as a travel corridor, where various habitats are utilized for resting and feeding stops. Some of the more important migratory habitats within the SH 130 study corridor include riparian zones, native grasslands, wetlands and upland woods/brush. The status [(Federal), (State)], ecological requirements, and known localities of each species potentially occurring in the study corridor is presented below.

Bald Eagle (T) (T). Historically the bald eagle was found throughout North America, Canada, and northern Mexico. It is primarily a fish-eating species which seeks wooded seacoasts, estuaries, major rivers, and large lakes, including impounded reservoirs for preferred nesting and wintering habitat. Loss of riparian habitat on major rivers, pesticide-induced reproductive failures, lead poisoning from lead shot ingested prey, and other human disturbances are the primary threats to the species.⁸⁴ The nesting range of the bald eagle in Texas extends along the Gulf Coast from Nueces to Jefferson County inland to Robertson County, and along the Red River. The wintering

⁸⁴United States Fish and Wildlife Service (USFWS), 1989. Southeastern States Bald Eagle Recovery Plan. Endangered Species Office. Atlanta, Georgia.

range in Texas is scattered throughout the northeast quarter of the state and most of the Panhandle. Perhaps the closest known bald eagle nesting site to the SH 130 corridor occurs at Lake Bastrop, approximately 22 miles to the east.⁸⁵ Wintering bald eagles are also well documented at Lake Buchanan, approximately 45 miles west of the project area in Burnet County.⁸⁶

Potential bald eagle nesting habitat occurs around Decker Lake and possibly elsewhere within the study corridor, but nesting has not been documented there. The bald eagle probably uses the area during migration, based on the nesting range to the south, but their potential occurrence and utilization of the study corridor is considered incidental.

Swallow-tailed Kite (SOC) (T). The swallow-tailed kite was historically a common nesting resident on the coastal prairie and along wooded riparian corridors of the eastern part of Texas.⁸⁷ The species experienced significant declines around the turn of the twentieth century, and remain very rare in Texas today. Most recent local sightings have been migrating individuals or groups in the spring and fall.⁸⁸

Whooping Crane (E) (E). Historically the whooping crane occurred throughout most of North America. It was almost extirpated during this century due to habitat destruction and human disturbances. Whooping crane populations have increased from a low of 18 in 1938-1939 to a current number of approximately 300.⁸⁹ The remaining cranes breed in the wetlands of Wood Buffalo National Park, Northwest Territory, Canada, and winter in the coastal wetlands of the Aransas National Wildlife Refuge in Aransas, Calhoun, and Refugio Counties, Texas. Williamson, Travis, Caldwell, and Guadalupe Counties are all in the migratory route used by these rare birds. However, their potential utilization of the project area should be considered incidental relative to the large area considered as part of their migration corridor. Site records in these four counties were reported by Oberholser in 1974.

⁸⁵Texas Parks and Wildlife (TPWD), 1990. Texas Colonial Waterbird Census Summary. Compiled by Catrina Martin with the cooperation of the Texas Colonial Waterbird Association.

⁸⁶Ibid.

⁸⁷Ibid.

⁸⁸Travis Audubon Society, 1989, Checklist and seasonal distribution - birds of the Austin, Texas region.

⁸⁹USFWS, 1992, Threatened and Endangered Species of Texas. Texas State Office. Austin, Texas.

Piping Plover (T) (T). The piping plover is a small, ringed (has a dark, narrow breast band) plover which ranges from south-central Canada, the Great Lakes region, and coastally from Newfoundland to Virginia. This species winters coastally from South Carolina to Texas. The piping plover inhabits lake and sea shores where it breeds and nests on sparsely vegetated expanses between dunes and high water lines. The majority of Texas specimens and sightings documented by Oberholser in 1974, come from coastal counties from Chambers to Cameron. One isolated spring sight record for Travis county is documented. Again, the potential migratory corridor of the piping plover includes not only the county area but the rest of Texas, so its utilization of the SH 130 corridor should be considered incidental.

Western Snowy Plover (SOC) (NL). The western snowy plover, a sub-species of the snowy plover, migrates primarily through the western portion of Texas. It is not known to breed in Texas.⁹⁰ Occurrences of this sub-species within the study corridor are likely to be highly infrequent.

Mountain Plover (PT) (NL). The mountain plover prefers shortgrass plains of level plateaus and coastal wetlands. It is known from the southern portion of the SH 130 corridor near Seguin based on winter and fall sight records, but the occurrence of this species near the corridor is most often associated with the Granger Lake area in Williamson County.⁹¹

Interior Least Tern (E) (E). The interior least tern is a colonial nesting species adapted to sand and gravel deposition features associated with inland lacustrine and riverine habitats. Active nesting colonies may be found in the Texas panhandle on the Red and Canadian River systems and in south Texas along the Rio Grande.⁹² Oberholser cites a handful of summer and fall sight records in Central Texas, but no nesting has been documented in the study corridor.

White-faced Ibis (SOC) (T). The white-faced ibis prefers fresh-water and brackish marshes of the Texas coast, but migrates through the study corridor in the spring and fall.⁹³ No known feeding or nesting stops are documented within the SH 130 corridor.

⁹⁰Oberholser, 1974, *The bird life of Texas*, 2 vols. University of Texas Press. Austin, Texas.

⁹¹National Audubon Society, "TEXBIRDS Archives," no date.

⁹²Locknane, 1988, *Interior least tern distribution and taxonomy*. Texas Parks and Wildlife Department (TPWD). Final Report, Federal Aid Project Number W-103-R-17.

⁹³Oberholser, 1974, *The bird life of Texas*, 2 vols. University of Texas Press. Austin, Texas.

Brown Pelican (E) (E). The brown pelican represents one of the few endangered species whose populations are considered to be improving. This is attributed in part to reduced contaminant levels in its ecosystem from pesticide controls.⁹⁴ The brown pelican is primarily a coastal species which is found from time to time on large inland bodies of water. This species has been documented within the four-county area from sight records in summer and fall.⁹⁵ However, no suitable brown pelican habitat has been identified within the SH 130 study corridor.

Wood Stork (NL) (T). The wood stork occurs in coastal marshes in the eastern half of Texas. Post-breeding transients of this species in Texas may originate in southern Mexico.⁹⁶ It is of potential occurrence in the southern portion of the SH 130 study corridor.

Other Species

Other sensitive species of potential occurrence in the study corridor include two salamanders, three fish, three reptiles, one turtle and one tortoise, two birds, a bat, and one plant.

The two salamanders of potential occurrence in the study corridor are the Georgetown Salamander (*Eurycea* sp. 5) and the Jollyville Plateau Salamander (*Eurycea* sp. 1). These species are of increasing importance to the USFWS recently, as reflected in their letter dated January 31, 2000 (see **Appendix C**). The Georgetown Salamander is an endemic species found in springs and waters of some caves of the Georgetown region. The Jollyville Plateau Salamander is also endemic and found in springs and waters of some caves of the region north of the Colorado River in Travis County. On-going study with regard to these species is discovering that each region appears to have unique species of spring-dwelling salamanders. These species are generally known to occur mainly in the karst areas west of the SH 130 study corridor, but more recent reports⁹⁷ also have at least the Jollyville Plateau Salamander occurring in Brushy Creek just west of the M-K-T Railroad right-of-way within the study corridor.

⁹⁴United States Fish and Wildlife Service, 1979, Eastern Brown Pelican Recovery Plan. Endangered Species Office. Atlanta, Georgia.

⁹⁵Oberholser, 1974, The bird life of Texas, 2 vols. University of Texas Press. Austin, Texas.

⁹⁶Rappole, J.H and G.W. Blacklock, 1994, Birds of Texas, a field guide, No 14 in the W.L Moody, Jr. Natural History Series, Texas A&M University, College Station, Texas; and Texas Ornithological Society (TOS), 1995, Check list of the birds of Texas, 3rd edition. Capital Printing, Inc., Austin, Texas.

⁹⁷Texas Biological and Conservation Data System, Wildlife Diversity Program, Wildlife Division, Texas Parks and Wildlife Department

Three rare fishes are of potential occurrence within the study corridor. The small eye shiner (*Notropis buccula*), generally inhabits shallow sandy areas in the northern portions of the Brazos River drainage area, and has been introduced into the Colorado River drainage area.⁹⁸ The blue sucker (*Cycleptus elongatus*) is limited to major drainages, inhabiting deeper pools and channels. No recent reported occurrences of either of these fishes are known from the study corridor. The Guadalupe bass (*Micropterus treculi*) is a species of concern that inhabits shallow, swift sections of various waterways, and is endemic to Central Texas. Its occurrence within the study corridor represents the eastern edge of its distribution and provides another indication of the Edwards Plateau influence on the flora and fauna of the area.

Three sensitive reptiles which are known to occur in the SH 130 study corridor include the Texas garter snake (*Thamnophis sirtalis annectens*), the Texas horned lizard (*Phrynosoma cornutum*), and the timber rattlesnake (*Crotalus horridus*). These reptiles are all species of concern, and the two latter species are also state-listed as Threatened. The Texas garter snake inhabits moist wooded areas of central Texas. This rare snake is documented approximately one mile west of the SH 130 corridor near an unnamed tributary of Walnut Creek. It is presumed to occur throughout the Walnut Creek and surrounding basins. The Texas horned lizard was a common resident of central Texas, inhabiting xeric grassland habitats, but has recently experienced serious declines throughout many portions of the state. The timber rattlesnake usually prefers dense thickets, but can also be found in open, upland pine and deciduous woods and the second-growth pastures of unused farmland.⁹⁹ The timber rattlesnake has been recorded from Caldwell County¹⁰⁰ and is of potential occurrence in the southern portion of the SH 130 study corridor. Their decline has been attributed to impacts to their primary prey items (chiefly native ants), the loss of habitat, and the cumulative effects of pesticides in urban and agricultural areas. Although none were observed during field investigations, they may occur sporadically throughout the study corridor.

Cagle's map turtle (*Graptemys caglei*), a candidate for federal listing, is found only in segments of the Guadalupe and San Marcos Rivers where it inhabits pools or slow-moving

⁹⁸Lee et al., 1980, Atlas of North American freshwater fishes. Pub. No. 1980-12. North Carolina Biological Survey.

⁹⁹Tennant, A., 1984, The Snakes of Texas, Texas Monthly Press, Austin, Texas.

¹⁰⁰Dixon, J.R., 1987, Amphibians and reptiles of Texas, Texas A&M University Press, College Station, Texas.

stretches.¹⁰¹ It has been recorded from Guadalupe County and may potentially occur in the SH 130 study corridor.

The Texas tortoise (*Gopherus berlandieri*), which inhabits soils in areas of low, sparse vegetation has been recorded from Guadalupe County.¹⁰² It is of potential occurrence in the southern portion of the SH 130 study corridor.

The loggerhead shrike (*Lanius ludovicianus*), an inhabitant of open country with scattered trees, is a rare to common resident throughout the state.¹⁰³ It was frequently observed on utility lines and fences in the southern portion of the SH 130 study corridor during field visits by project staff.

The Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) is a small resident with sub-tropical affinities, occurring in the Lower Rio Grande Valley and South Texas Plains. There is a single questionable winter record for Travis County in Oberholser, but no olive sparrows have been documented in Travis County in the past ten years.¹⁰⁴

The southeastern myotis (*Myotis austroriparius*), a rare bat, occurs primarily in the temperate deciduous forests of the southeastern U.S. They are thought to be associated with riparian areas, but little ecological information is available regarding their potential distribution within the study corridor.

Correll's false dragon-head (*Physostegia correllii*) is a perennial herb of the mint family inhabiting relatively moist bottomlands and drainage corridors primarily in the more xeric regions of west Texas and Mexico.¹⁰⁵ A specimen was documented under the Montopolis Bridge over the Colorado River in Travis County in 1952, but it has not been observed there in several years.

¹⁰¹Killebrew, F.C., 1991, Habitat Characteristics and Feeding Ecology of Cagle's Map Turtle (*Graptemys caglei*) Within the Proposed Cuero and Lindenau Reservoir Sites.

¹⁰²Op Cit. Dixon, 1987.

¹⁰³Op Cit. Texas Ornithological Society, 1995.

¹⁰⁴Travis Audubon Society, 1989, Checklist and seasonal distribution - birds of the Austin, Texas region.

¹⁰⁵Correll and Johnston, 1979, Manual of the vascular plants of Texas. University of Texas at Dallas. Dallas, Texas.

3.8 HISTORIC PROPERTIES

3.8.1 Regulatory Compliance

The National Environmental Policy Act (NEPA) of 1969, as amended, requires consideration of important historic, cultural and natural aspects of our national heritage. Important aspects of our national heritage that may be present in the project corridor will be considered under Section 106 of the National Historic Preservation Act of 1966, as amended. This act requires federal agencies to "take into account" the "effect" that an undertaking will have on "historic properties." Historic properties are those listed in or are eligible for listing in the National Register of Historic Places (NRHP) and may include buildings, structures, objects, sites and districts. In accordance with the Advisory Council on Historic Preservation (ACHP) regulations pertaining to the protection of historic properties (36 CFR 800.4), federal agencies are required to identify, assess and mitigate the effects that the undertaking will have on such properties. These steps shall be completed under terms of the Programmatic Agreement between FHWA, the State Historic Preservation Officer (SHPO), the ACHP and TxDOT. A specific historic properties protocol for the SH 130 project has been developed. This protocol is found in **Appendix F** and details the methods and procedures to be followed for all remaining historic property identification, assessment, and/or treatment for the SH 130 project.

Identification of historic properties has been undertaken for buildings, structures, objects, sites (including cemeteries) and districts within the project corridor. A preliminary identification of archeological sites has also been undertaken within the project corridor¹⁰⁶.

This project also falls under the purview of the Texas Antiquities Code (TAC), because it may involve "lands owned or controlled by the State of Texas or any city, county, or local municipality thereof." As the project will involve purchase of right of way by the state, or lands belonging to local municipalities and counties under jurisdiction of the Texas Antiquities Code, historic properties will also be considered under provisions of the Memorandum of Understanding (MOU) between the SHPO and TxDOT. The Antiquities Code of Texas allows for all such properties to be considered as State Archeological Landmarks (SALs), and requires that each be

¹⁰⁶Limited field observations have been conducted in areas where access was permitted. In order to enter private lands, project staff sent access request letters to property owners whose lands reportedly contained cultural resources or where a high potential existed for eligible properties. Right-of-entry onto private property was obtained through the written permission of the land owner.

examined in terms of possible “significance.” Significance standards for the code are outlined under Chapter 26 of the Texas Historical Commission’s (THC) Rules of Practice, under Procedures for the TAC, and closely follow those of the U.S. Secretary of Interior’s Standards and Guidelines¹⁰⁷.

Assessment for the cultural resources within the proposed SH 130 corridor focused on the identification of extant archeological sites, properties listed or eligible for listing in the NRHP, State Archeological Landmarks (SAL) and Official State Historical Markers (OSHM). A Historic Properties Survey was conducted within the project’s Area of Potential Effects that documented buildings, structures, objects, sites (including cemeteries) and districts 50 years of age or older (pre-1958)¹⁰⁸. Data sources for this research included the Texas Archeological Research Laboratory (TARL), General Land Office (GLO), the THC and the Environmental Affairs Division (ENV) of TxDOT as well as other various local and state depositories.

The Area of Potential Effects (APE) for archeological sites is different from that of standing properties and cemeteries. Consultation between the Archeology Division of the THC and TxDOT–ENV has determined that the APE for archeological properties is considered to be within the existing or new right-of-way (ROW) and permanent easements, and within existing or new other project-related activities areas. The APE for standing structures, as determined in consultation with the History Programs Division of the THC, is one-quarter mile on either side of the proposed ROW for the new-location parts of the build alternatives, and 500 feet on either side of those parts of build alternatives along existing road alignments.

Cemeteries

Cemeteries are protected by State law, primarily Chapters 694-712 of the Health and Safety Code. Those cemeteries on property owned or controlled by a political subdivision of the State are also protected through the Texas Antiquities Code (Title 9, Chapter 191 of the Texas Natural Resources Code of 1977). Chapter 41 of this code contains the Rules of Practice Procedures

¹⁰⁷Significance standards for historic properties under the Texas Antiquities Code follow the criteria and integrity standards of the National Register of Historic Places, i.e., that such standards are normally applied to a resource that is 50 years of age, maintains a measurable degree of integrity, and can be documented through associations with historic events, persons, design and/or information to yield. Further, for a building to be officially designated a State Archeological Landmark, it must first be listed in the National Register of Historic Places. Structures, objects and sites (and districts absent buildings) are not required to meet this specific National Register-listed prerequisite.

¹⁰⁸The SH 130 project is expected to advance to letting in 2008, therefore the 50-year-old guideline was applied here to properties dating from 1958 and earlier.

applicable to the identification and consideration that must occur at historic cemeteries. Under Federal law, cemeteries that are more than 50 years of age are also subject to evaluation and review under Section 106 of the NHPA (36 CFR 800) if they fall within the project's APE. Cemeteries can be found eligible for listing in the NRHP if they derive their primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events such as the founding of a community. Cemeteries identified during historical or archeological survey will be evaluated in accordance with each of these regulatory authorities, the PA and the MOU. If a cemetery is found to be eligible for the NRHP, TTA shall implement a treatment plan to address appropriate issues of significance, data recovery, and if necessary, reburial. The plan shall also meet the requirements of the Health and Safety Code. If the cemetery is not found to be eligible for the NRHP or as an SAL, then only the requirements of the Health and Safety Code shall be met. These efforts for cemeteries shall be carried out under the protocol presented in **Appendix F**. Additional information about cemeteries is presented in **Section 3.8.7**.

Official State Historical Markers

While no State or Federal laws safeguard the protection of Official State Historical Markers (OSHM) that are not 50 years of age or older, agreements between County Historical Commissions (CHC), the THC and TxDOT require that proposals to impact, or relocate historical markers be coordinated with CHCs and the THC. "Subject markers" merely interpret historic events or persons significant to local or state history. These markers, standardized by the THC as cast aluminum plaques after 1958, may or may not be placed in proximity to historically significant sites. "Building markers," signified either by the THC's free-standing medallion or the words "Recorded Texas Historic Landmark" (RTHL) affixed to a building or structure, carry an official designation of the State dating from 1962.

Official State Historical Markers that are 50 years of age or older and within the project APE are subject to review and evaluation as objects of potential historic significance under Section 106 of the NHPA. These stone and metal markers themselves can be eligible for NRHP listing for their design and workmanship or association with a State sponsored initiative to commemorate historic places, events or persons significant to Texas and/or U.S. history. Examples of these markers are Zivley's El Camino Real (Old San Antonio Road) tablets, erected by the Daughters of the American Revolution in 1916-17, and Texas Centennial Markers erected by the Texas Highway Department and other official agencies between 1936 and about 1940 to commemorate significant events in Texas history for the state's centennial celebration in 1936.

3.8.2 Prehistoric and Historic Archeology

3.8.2.1 Archeological Sites

A large number of archeological sites have been recorded throughout the SH 130 study corridor. In general, site distributions and types conform to suggested settlement models that are well documented in central Texas¹⁰⁹, with a few important exceptions. The most common types of sites in the SH 130 study corridor are open occupation sites, lithic reduction or procurement sites, and historic archeological sites. Open occupation sites are documented in numerous alluvial settings and are often buried. Buried occupation sites have the potential to offer a wealth of information on the subsistence and settlement practices of the prehistoric inhabitants. These sites are characterized by lithic debitage, a variety of stone tools, burned limestone rocks, bone, charcoal, mussel and land snails. Only a few of these sites on the Blackland Prairies in the SH 130 study corridor are well documented¹¹⁰. These span the known temporal range of prehistoric occupation in Texas, from late Paleoindian through Archaic and Late prehistoric times¹¹¹. Burned rock midden sites which are ubiquitous in central Texas, are noticeably absent on the Blackland Prairie, which comprises a large portion of the SH 130 study corridor.

Lithic reduction/procurement sites are most frequently found in upland areas. These sites are quite common, generally surficial in nature, and many are disturbed. Lithic reduction/procurement sites generally contain the debris of flintworking activities which includes debitage, tested cobbles, cores and unfinished stone tools. Late Archaic and Late Prehistoric cemetery sites are also recorded in the project area¹¹². Historic sites consist of a few late 19th and numerous early 20th century occupation sites, mainly farmsteads. These are generally related to the initial and subsequent occupations of the Blackland Prairie in historic times.

¹⁰⁹Black, S.L., 1989, "Central Texas Plateau Prairie." *From the Gulf to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos, Texas*. Research Series 33. Arkansas Archeological Survey. Fayetteville, AR.

¹¹⁰Johnson, Leroy, 2000, *Life and Death as seen at the Bessie Kruze Site (41WM13) on the Blackland Prairie of Williamson County, Texas*. Archeology Studies Program, Report No. 22. Environmental Affairs Division. Texas Department of Transportation.

¹¹¹Ibid.

¹¹²Ibid.

The archeological sites identified within the study corridor (i.e., prehistoric, prehistoric/historic, or historic) are organized into the following two categories: 1) sites that are considered to be potentially eligible for listing on the NRHP and 2) sites whose NRHP eligibility is unknown. These sites are further considered in two groups, those existing from SH 195 north of Georgetown to US 290 near Austin, and those existing south of US 290 to I-10 near Seguin.

NRHP Listed Sites

There is only one archeological site within the APE for SH 130 that is currently listed on the NRHP. Site 41WM465 is the Kenney Fort which was recorded in 1981 by archeologists of the Texas Department of Water Resources. The NRHP listed historic component consists of the remains of a the ca. 1850's occupation by Dr. Thomas Kenney and Joseph Barnhart located on the south bluff of Brushy Creek, west of its confluence with Dyer Creek. Several log cabins were originally constructed fronting north (two to four are mentioned in various accounts), one of which is described as “a double log house with a hall between the rooms” and with portholes on the exposed sides of the house. To protect the houses, a picket stockade fence of upright logs eight to ten feet high enclosed about one-half acre of land. The fort overlooked the cove and occupied a commanding view of the countryside. Observed artifacts recorded include earthenwares, described as “edgeware, spongeware, flawn blue, and transfer” and associated metal and glass.¹¹³ Some of the ceramics observed appear to date to the 1840s and 1850s. The original buildings remained in the 1860s but by the mid-twentieth century, only the foundations of the cabins, cedar posts and a portion of the flag pole remained.¹¹⁴ Additionally, this site area includes the Brushy Creek crossing for the Double File Trail, a historic route laid out by the Delaware Indians in 1828. Historical Markers have been erected near this site to commemorate both Kenney Fort and the Double File Trail.

The site also contains a prehistoric component which may be laterally extensive. The NRHP eligibility of the prehistoric component is undetermined. The NRHP listed historic component is located at the very eastern edge of the site. Observed prehistoric artifacts include Late Prehistoric and Archaic-age projectile points, stone tool making debris and burned hearth stones. Previous investigations state that the prehistoric component may be contained in shallow sediments overlying limestone bedrock.

¹¹³Texas Archeological Research Laboratory (TARL). n.d., County Files. University of Texas at Austin, J.J. Pickle Research Center.

¹¹⁴Scarborough, C.S. 1973, “Land of Good Water (Takachue Pouetsu): A Williamson County History.” Williamson County Sun Publishers. Georgetown, Texas.

Potential NRHP Eligible Sites

The following subsection includes those archeological sites that are considered potentially eligible for listing on the NRHP based on their significance and affinity with criterion (d) of the National Register Criteria for Evaluation,¹¹⁵ in that they have yielded, or may be likely to yield, information important to prehistory and history. The sites are presented as being geographically located in the northern stretch of the SH 130 corridor – that is between SH 195 north of Georgetown and US 290 near Austin – or in the southern stretch between US 290 and I-10 near Seguin.

SH 195 to US 290

Prehistoric. Site 41WM12 is located in the vicinity of Brushy Creek at one proposed project crossing. Site 41WM12 was originally documented by E. Mott Davis, Edward Jelks, and Lathel Duffield in 1958 and revisited by John Greer for the Travis County Archeological Society in 1960, TDWR in 1981, and other archeologists in 1986. All have recommended further testing of the site which is described as an extensive occupation locale where dense accumulations of cultural material have been deposited over several millennia. Materials at the site are present both on the surface and below. Burned rock is generally present, indicating cooking features, and a wide variety of lithic tools have been observed and collected through the years, including flint knives, scrapers, burins, a Bulverde dart point, a Folsom dart point, choppers, cores, and many thin bifacial fragments.

Site 41WM468 was originally recorded by Texas Department of Water Resources archeologists in 1981 and revisited in 1986. The site is located on a terrace on the north side of Brushy Creek immediately across from its confluence with Lake Creek. This undated prehistoric site exhibited flaking debris and a rock lined hearth or pavement that was observed in the cut bank of a gravel pit. The observed deposits were approximately 15.7 inches below the surface.¹¹⁶ Based on the buried nature of this apparent terrace occupation site, recorders believed the site to be worth testing.

¹¹⁵Department of the Interior Regulations 36 CFR 60: National Register of Historic Places-60.4 Criteria for Evaluation

¹¹⁶Texas Archeological Research Laboratory (TARL). n.d., County Files. University of Texas at Austin, J.J. Pickle Research Center.

Historic. Site 41WM1742, or the Bohls House, is a historic homestead which at one time contained several possible mid-19th century buildings. A cistern, foundation, and house are believed to still be present, according to TARL files. The site is reportedly located immediately adjacent to FM 685 about a half a mile north of Pfluger Lane. Access to the property on which the site is located could not be obtained and thus the site was not visited.

US 290 to I-10

Prehistoric. Site 41TV1625 is located south of Onion Creek and south of SH 71. This site, which was discovered through shovel testing, is reported to contain burned rocks, chipping debris, and charcoal in a buried, intact occupation zone. The site also reportedly may contain additional, deeply buried, prehistoric remains (i.e., multi-component).¹¹⁷ This site has been recommended for further testing and for possible nomination as a SAL by the original surveyors. In general, terrace sites such as this are extremely valuable in Texas archeology, because they usually contain sealed, well preserved cultural materials which often have the potential to reveal new information relevant to specific, important research issues. No evidence of this site was observed during an informal visit.

Two additional potentially important prehistoric sites are located adjacent to one another just to the east of site 41TV1625. Site 41TV410 is a well-preserved site reportedly containing ancient hearths (fireplaces), and mussel shell and stone tools. Similarly, site 41TV204 contains hearths and numerous artifacts, including pieces of ground stone (evidence of plant food processing). Both of these are terrace sites that appear to contain significant subsurface cultural materials.

Site 41TV454 is located south of the Colorado River. Site 41TV454 reportedly contains burned rock, debitage and mussel shell and has been recommended for additional investigations by the original surveyors. Only an ephemeral scatter of prehistoric material was observed during a brief site visit, consisting of a flake, a burned rock, and two stream rolled cores. It is possible that cultural deposits lay intact beneath the zone of disturbance from the plowing, or perhaps have been destroyed. Site 41TV455 is located south of 41TV454 and reportedly contains cultural materials

¹¹⁷Davis, M.W. et.al., 1994, Cultural Resources Survey and Assessment for the Garfield Electric Substation and Related Transmission Lines, Travis and Bastrop Counties, Texas. Hicks & Company Archeological Series No. 26. Austin, Texas.

similar to other terrace sites located in this vicinity. However, no cultural materials were observed during the site revisit and thus, the site may be buried beneath the plow zone.

Prehistoric/Historic. Site 41TV456 is one member of a cluster of known prehistoric sites located immediately south of the Colorado River and north of SH 71. The site is reportedly a multi-component prehistoric occupation site exhibiting burned rock, flintknapping debris (debitage), mussel shell, and bone. An informal field visit to the site by project archeologists revealed a scatter of chert cores, flakes and burned rocks covering the surface of a plowed field. The prehistoric component of the site is at least partially disturbed due to repeated plowing, but given the depth of the alluvial sediments, it is possible that intact cultural deposits lay beneath the zone of disturbance.

The site also has an historic component, which has also been recommended by the original surveyors for additional investigations. It consists of two ruined house foundations that may date to the late-19th century (brick, ironstone sherds, glass, and square nails). Overall, the aerial extent of the historic component is not firmly established.

Site 41TV457, located south of site 41TV456 in the vicinity of Onion Creek, contains both prehistoric and historic remains. The prehistoric aspect reportedly consists of debitage, burned rock, bone and mussel shell, possibly buried. The historic aspect of the site consists of a building remnant and associated glass, metal, brick, and ironstone fragments. Either or both of these components may have the potential to yield important archeological information.

Historic. Site 41TV902 reportedly represents the remains of a late 19th century farmstead, and is located north of the Colorado River near Hornsby Bend. The site reportedly contains a standing frame house and a scatter of historic material that includes whiteware and stoneware ceramics. The original survey of the site recommended further archival research in order to document its potential importance. The survey report also suggests that the site may be potentially eligible for listing on the NRHP under criterion (b), because of its direct association with the Ruben Hornsby Land Grant of 1832 and Hornsby's direct descendants. Criterion (d) may also apply to an extensive trash midden at the site which appears to contain late 19th century refuse.

Site 41TV1396 is the remains of a historic schoolhouse known as the Dry Creek School, which operated from 1908-1950. The site, which has been incorporated by the Del Valle School District, is located just south of Elroy Road and just west of McAngus Road. The remains of the original foundation and a brick cistern are reportedly present. Although the site has since been

machine cleared, the original surveyors recommended subsurface testing for intact archeological features.

Sites of Unknown NRHP Potential

This subsection includes archeological sites whose potential for listing on the NRHP is unknown. These sites are likewise presented based on their geographic location.

SH 195 to US 290

Prehistoric. Site 41WM466, a prehistoric terrace lithic scatter with burned rock, is located in the vicinity of Dry and Dyer Branches and Brushy Creek. This site was recorded in 1981 by the TDWR cultural resource staff. Materials at the site reportedly include burned limestone, quartzite, and chert, and lithic reduction artifacts such as tested cobbles, exhausted cores, various stages of thick bifaces, thin bifaces, and quantities of debitage, seemingly indicating that tool manufacturing was one of the activities that took place at the site. Recorders felt that there was a possibility for the presence of undisturbed deposits.

Site 41WM682, near the west side of the M-K-T railroad right-of-way in the vicinity of two unnamed tributaries of Chandler Branch, is a prehistoric site evidenced by cores, tested cobbles, preforms, bifaces, and flakes. The upland lithic procurement site is somewhat eroded as a result of historic agricultural practices and construction of a railroad. It was assessed by the original surveyors as having low research potential.

Site 41WM676 is a diffuse and surficial prehistoric site, also located near the west side of the M-K-T railroad right-of-way. Burned rock, debitage, utilized flakes, and chert cores were found thinly dispersed along the bluff, however, no time diagnostics or intact features have been observed and the site is considered highly disturbed due to plowing and railroad construction.

Recorded in 1995, site 41WM820 is described as a surface scatter of chert debitage with no further evidence of features or diagnostic artifacts. This low density lithic scatter, located in the vicinity of Brushy Creek within a plowed field, is considered to contain very little information potential and is believed to be mostly disturbed.

Located in the vicinity of Harris Branch of Gilleland Creek, site 41TV1324 is described as a disturbed, surficial terrace lithic scatter. Observed artifacts included flakes, biface fragments, and uniface fragments, all perhaps suggesting limited tool maintenance/manufacture activities.

Prehistoric/Historic. Site 41WM464 contains both prehistoric and historic components. It is located in the vicinity of Lake and Brushy Creeks. Prehistoric presence at the site is indicated by artifacts exposed at the surface of the site. The historic component consists of ceramics, glass, and metal artifacts indicating an Anglo-American habitation. Portions of two structures were also identified, one being the remains of Victorian style house (ca. 1860-1900), which was owned by members of the Palm family, the earliest Swedish settlers in the county. After a 1986 visit to the site, recorders stated that no further work was recommended, since neither the prehistoric or historic component appear to meet the criteria for inclusion on the NRHP.

Historic. Two additional historic sites, 41WM1416 and 41WM1417, are located north of US 290 in the vicinity of Gilleland Creek. These two related historic sites are houses occupied by tenant farmers from the 1880s to about 1930. Site 41WM417 reportedly includes foundation remains, several wood piers, in addition to ironstone, bottle glass, crockery, and a cast iron meat grinder. Site 41WM416 is associated with a range of artifactual material including ironstone, crockery, bottle glass, and toy fragments.

Located generally southeast of Chandler Branch is site 41WM683, a surface scatter of late 19th century and early 20th century household debris. A 1985 visit to the site turned up materials including glass, earthenware, and metal fragments. No structural remains were observed at the site.

Located in the vicinity of FM 685 and Wilbarger Creek is site 41TV1743. The site contains an early 20th century brick-lined well with cement casing as well as numerous artifacts including fencing, wire nails, bottle glass, white ware, and more recent trash. The site is considered by the original surveyors to be extremely limited in offering any useful information.

US 290 to I-10

Prehistoric. The Buddy Pierson site, 41TV150, is located in the vicinity of Moore Road and Maha Loop. It reportedly contains projectile points, bifacial tools, and debitage, but no additional information on the site is available. Although its potential is unknown, the site has not been officially recommended for further testing.

Site 41TV1266 is located southeast of Lake Walter E. Long near FM 973. This site, which consists mainly of a lithic scatter, may have limited research potential, according to the archival research. Although cultural materials appear to be primarily confined to the surface, some subsurface materials have been reported at the site. The site has been bisected by a road and clearly surface materials have been disturbed.

Site 41TV1276 is located in the vicinity of the intersection of FM 969 and FM 973. Although the site is recorded as a lithic scatter/lithic procurement area, which are the types of sites that generally lack research potential, this site has a large, highly variable lithic assemblage (many different types of stone tools) and also may contain subsurface cultural materials. Both of these aspects may suggest the site to contain valuable archeological information, and additional investigations may therefore be required. A modern road and dump have apparently disturbed the site and only the northwest portion of it appears to be intact.

Site 41CW7 is a prehistoric site situated on a plowed field along the Clear Fork of Plum Creek, about two miles west of Lockhart. Material collected from the site includes projectile points, manos, and pieces of bone.

There are numerous additional prehistoric sites within the project corridor described as lithic scatters or lithic procurement areas. These sites have been recommended for no further archeological research by the original surveyors. This characterization includes a group of prehistoric sites located in the vicinity of Lake Walter E. Long (41TV1256, 41TV1257, 41TV1259, 41TV1260, 41TV1261, 41TV1262, 41TV1267, 41TV1268, 41TV1269, 41TV1270, 41TV1271 and 41TV1587). This appears to be an area with abundant chert resources that was frequented by aboriginal peoples for purposes of procurement and processing of raw materials for stone tool manufacture.

Additional prehistoric sites located in the vicinity of Loyola Lane and Lake Walter E. Long include Sites 41TV325 and 41TV1283. Site 41TV325 is a lithic quarry procurement site but is relatively large and reportedly undisturbed. It does not appear that the boundaries of this site are firmly established by the archival information. Site 41TV1283 is a light scatter of lithic debitage, cores and tested cobbles, whose boundaries are also not well defined. Although estimated to be 40-50 percent intact, no further site testing was recommended by the original surveyors.

Similar types of sites located near the Colorado River include 41TV420 and 41TV421. Sites 41TV421 and 41TV420 are small lithic scatters.

Additional sites characterized as lithic scatters include 41TV453, 41CW45, and 41CW46. Site 41TV453 is located on the south side of SH 71, while sites 41CW45 and 41CW46 are located in the vicinity of US 183 and FM 1185. These sites are generally lithic scatters that likely do not possess a high degree of contextual integrity.

Prehistoric/Historic. Site 41TV1278 is located near FM 969 and FM 973, in the vicinity of Decker Creek. It contains both historic and prehistoric cultural materials. Although the historic component, which consists of a house and artifact scatter, has not been recommended for further research, there appears to have been no accounting for a possible buried prehistoric component at the site.

There is conflicting information pertaining to one prehistoric site (41TV1275), which may also have a historic component. Information on the survey recording form indicates that the site is no more than a lithic scatter, and one that is likely out of context. However, the THC lists 41TV1275 as having been determined eligible for the NRHP. Even given the possible historic component, this seems unlikely. A total of one historic age ceramic sherd was recorded on the site data form, and there is no other mention of historic materials. Site 41TV1275 is located roughly to the northeast of site 41TV1276, mentioned above.

Site 41TV1272 is located in the vicinity of Decker Lake Road and FM 973. Although the prehistoric component to this site consists of the remains of a lithic procurement area and there is also a possible historic-age component. At this site, the remains of a wooden house frame are associated with typical farmstead-type debris (wire nails, cistern). This site has been recommended for further archival and possible archeological investigations by the original surveyors.

The Rub Iron site, 41TV1325, consists of a stone lined well and a disturbed house foundation that may date to the late 19th century. Historic artifacts in the form of bottle glass, ceramics, carriage parts, and nails (both wire and cut) have been reported. The Rub Iron site has been recommended for archival research by the original surveyors in order to evaluate its potential significance. However, an informal visit to the site by project archeologists indicates that the site may be highly disturbed. The site is reportedly situated on an upland area but no sign of the reported stone lined well, disturbed house foundation, or other historical debris other than a fence was found. Instead, a large amount of modern trash was observed. An ephemeral scatter of prehistoric material was also observed at the site which consisted of a handful of cores and a few thinning flakes, and one bifacial tool. This prehistoric component probably represents a lithic procurement area, given the number of chert cobbles eroding out of the hill top. Overall, the Rub Iron Site, as plotted on

TARL maps, is quite extensive, and the main center of the historic component site may be located in the vicinity of Loyola Lane and Lake Walter E. Long, where access was not permitted. The prehistoric component of the site appears to be of low research potential.

Historic. 41TV542 is located in the vicinity of the Colorado River near Hornsby Bend. It consists of a large scatter of historic age glass, metal, and brick fragments.

The remains of a structure that may date to 1886 comprises 41TV1112 and is located near FM 969 and Elm Creek. Although only about 40 percent of the original house is estimated to be intact, preliminary architectural studies indicate that there have been several subsequent additions to the house, which may have diminished its potential for NRHP eligibility.

Site 41TV1305 is located in the vicinity of FM 973 and Gilleland Creek. This late 19th century home-site contains bottles, bricks, boards, cut nails and fencing wire in association with the ruins of a house and a collapsed chimney. There is reportedly an intact cistern on the site. Archival research has been recommended by the original surveyors.

Site 41TV326, located in the vicinity of Lake Walter E. Long and Loyola Lane, is a late 19th to early 20th Anglo farm complex. This site contains an intact fence with concrete foundations, two cisterns, and the remains of two barns and a house. An artifact scatter of stoneware ceramic sherds, square nails, glass, metal, and lumber has been reported.

Site 41TV1282 is a historic house site that is basically destroyed. Although less than ten percent of it is remaining, the site has been recommended for further archival research by the original surveyors. The site is located in the vicinity of FM 969 and Elm Creek.

3.8.2.2 El Camino Real para Los Tejas and Old San Antonio Road

The Old San Antonio Road is not a singular road, but is better described as a network of old roads and trails with different routes that were used at different times. Though portions of the road probably existed prior to the coming of the Spanish, the blazing of a trail across the entire state came about through three Spanish expeditions, all associated with the establishment and supply of the missions in East Texas. In Spanish Texas, the Old San Antonio Road was a major arterial roadway for travel through Texas. It served as a lifeline for the East Texas missions, facilitated trade, and was an avenue for incoming colonists during the early 1800s. After Texas independence,

the road fell into disuse as north-south trade routes grew in importance. Remaining portions of the road served local needs.¹¹⁸

In 1915, the Texas legislature commissioned V.N. Zivley to survey the route of the Old San Antonio Road. Following physical evidence of the road, along with topographic features and using documentary records, Zivley surveyed a total length of 540 miles.¹¹⁹ The route laid out by Zivley was designated a historic trail of Texas in 1929. In 1991, the Texas Legislature directed TxDOT to study the road in order to develop a conservation plan. The study concluded that no fewer than five different main routes had been in use at different times. As it pertains to central Texas, two main routes were identified. The one surveyed by Zivley was the *camino en medio* or the Lower Presidio Road, but another also crossed the area, following the Balcones Escarpment before turning eastward. This was the *camino de los tejas* which was used to establish and supply the first 18th century Spanish missions of East Texas.¹²⁰

A section of the *camino de los tejas* is known to have crossed through portions of eastern Travis County adjacent to and southeast of Austin. The path of the old roadway is thought to have wound its way from southwest of Austin, to southeast of the Montopolis Bridge, then along Old Manor Road, passing northeast of Austin near Manor. Importantly, research at TxDOT-ENV has revealed that *camino de los tejas* does in fact intersect the SH 130 study corridor.

As part of the 1929 designation of Zivley's surveyed *camino en medio* route as a historic trail of Texas, TxDOT was also directed to preserve and maintain the road. By 1949, most of the distance of this route from San Antonio to the Sabine River had been opened and paved, and is still in use today as SH 21. In Caldwell County, SH 21 follows almost exactly the route surveyed by Zivley in 1915-1916.

¹¹⁸Texas State Historical Association, 1996, "The New Handbook of Texas." In cooperation with the Center for Studies in Texas History at The University of Texas at Austin.

¹¹⁹Zivley, C. N., "Papers, 1920-1964," Center for American History, The University of Texas at Austin.

¹²⁰Texas State Historical Association, 1996, "The New Handbook of Texas." In cooperation with the Center for Studies in Texas History at The University of Texas at Austin.

3.8.3 Historic Buildings

This section documents potentially historic architectural resource sites (buildings, structures, objects, districts, cemeteries, etc.) identified within the APE for the proposed SH 130. The APE for the project includes a corridor approximately one-half mile wide along each of the build alternatives.

The term “potentially historic,” as it is used in this section, refers to any architectural resource site that is or will be 50 years of age at the time of project construction. For purposes of project planning, a projected construction date of 2008 was selected. Thus, ca. 1958 was the cut-off date used for determining which building and structure sites to include in the study. This cut-off date made the ca. 1958 U.S.G.S. 7.5' topographic maps of the project area the best available map source for locating many of the individual buildings, cemeteries, and structures recorded in the project area.

The 50-year age criterion is derived directly from the criteria for National Register of Historic Places (NRHP) eligibility. However, to be eligible for NRHP listing a resource site must not only be 50 years of age, but must also meet one of four primary eligibility criteria and retain historical integrity with respect to location, design, setting, materials, workmanship, feeling, and association (see **Section 6.0 Decision Making – Applying the NRHP Criteria** in the **Historic Buildings Report, Volumes A-C**, under separate cover). Using these criteria, recorded architectural resources within the APE were preliminarily assessed by the TxDOT Environmental Affairs Division (TxDOT-ENV) architectural history staff for NRHP eligibility. Those assessments were used in evaluating the build alternatives according to the project planning requirements of NEPA as it applies to federally funded highway projects.

3.8.4 Architectural Resource Identification Methodology

Prior to conducting a vehicular “windshield” reconnaissance of the route alternatives, a review of the THC database of NRHP listed and eligible properties was conducted. That review indicated that one historically significant architectural property was previously recorded within the APE of the build alternatives, the Barr Mansion, which is currently listed on the National Register of Historic Places. In addition, it was recognized that the study area could also contain NRHP eligible resources not yet recognized and recorded with the THC. To help in identifying such “unrecorded” sites that might be eligible for the NRHP, reviews were conducted of state and local

architecture survey files, official state historic marker files, published county histories, historic period maps, and aerial photos. Additionally, knowledgeable local informants, including private landowners and local County Historical Commission personnel, were contacted and requested to identify particular resources and areas of potential concern including cemeteries. Site specific information from the records/literature review was plotted onto the ca. 1958 U.S.G.S. topographic quad sheets to assist the reconnaissance team in locating architectural resource sites dating to ca. 1958 or earlier.

Following the preparations described above, the vehicular “windshield” reconnaissance of the study area was initiated by architectural and history specialists working in coordination with TxDOT-ENV staff. During this initial phase of the windshield reconnaissance, all the mapped locations for ca. 1958 or earlier architectural resource sites were examined from publicly accessible vantage points. Those with visible architectural remains were photographed and assigned a temporary photographic identification code. The resultant set of photographs and maps were assembled and presented to TxDOT-ENV’s architectural history staff for their preliminary review and assessment. As a result of that review, additional documentation was requested on a large number of properties that were not adequately accessible from the public roads. Particular attention was given to those sites with property extending into the proposed right-of-way of the build alternatives.

In response to TxDOT’s request for additional information, access was arranged by identifying land owners from county and school district tax records and then requesting permission by telephone or direct personal contact. In most cases, permission for access was granted. During this follow-up phase of the windshield reconnaissance, efforts were also made to gather additional site-specific historical information from knowledgeable landowners and other local informants, some of whom provided information through official public hearings held for the project. In addition, a brief vehicular tour of the study area was conducted by TxDOT-ENV architectural history staff along with a representative of the THC’s National Register Division to familiarize themselves with the existing architectural and cultural environment.

The windshield reconnaissance resulted in an initial inventory of over 160 ca. 1958 or earlier architectural resource sites, including several Official State Historical Markers and historic cemeteries. Most of the resources consist of rural farmsteads related to the history of agriculture in the corridor. Several additional sites were added to the inventory during follow-up reconnaissance

and through local informants. There are 177 historic-age sites within the APE included in the final inventory, as depicted on **Figures 3.8-1a-c**. **Table 3.8-1** presents the inventory, along with a description of each property type, construction data, historic context, and, for those sites that are NRHP eligible, the applicable eligibility criteria.

3.8.5 Method of National Register Evaluation

A review was conducted of historic contexts developed thus far by the THC for purposes of identifying and comparing properties with similar thematic, and geographic qualities. That review revealed an absence of adequate historic contexts for the project area, particularly for agriculture resources. Consequently, it was necessary to develop a preliminary outline of historic contexts that would identify and characterize the property types recorded during the windshield reconnaissance. The preliminary outline of historic contexts was presented to and approved by the THC's National Register staff. The preliminary outline was then used as a basis from which brief historical discussions were developed to describe broad historical patterns and associated property types that were identified in the windshield reconnaissance. See **Section 4.0 Historic Contexts** pertaining to the project area and **Section 5.0 Property Type Descriptions** in the **Historic Buildings Report, Volumes A-C**, under separate cover.

Table 3.8-1 SH 130 Historic Properties Inventory

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
1	Williamson	Hall and Parlor	1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
2	Williamson	Barn	c. 1945	Agriculture: Post World War II	N/A
3	Williamson	L-Plan	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
4	Williamson	Pyramidal	c. 1895	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
5	Williamson	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
6	Williamson	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	C
7	Williamson	Hall and Parlor	c. 1915	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
8	Williamson	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
9	Williamson	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
10	Williamson	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
11	Williamson	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
12	Williamson	Barn	c. 1935	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
13	Williamson	Barn	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
14	Williamson	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
15	Williamson	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
16	Williamson	Postwar	c. 1920/1940	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
17	Williamson	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
18	Williamson	Barn	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
19	Williamson	Modified L-Plan	1911	Agriculture: Tenant Farming/Fenced-Range Ranching	C
20	Williamson	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	C
21	Williamson	Hall and Parlor	c. 1890	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
22	Williamson	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
23a	Williamson	Church	1894	Community and Regional Development	A
23b	Williamson	Cemetery	1861	Community and Regional Development	A
24a	Williamson	Cemetery	ca. 1849	Community and Regional Development	A
24b	Williamson	Historical Marker	ca. 1960	Post-WWII	N/A
25	Williamson	Pyramidal	c. 1905	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory

- continued -

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
25B	Williamson	I-House	1896	Agriculture: Tenant Farming/Fenced-Range Ranching	C
25C	Williamson	Bungalow	ca. 1930	Agriculture: Tenant Farming/Fenced-Range Ranching	C
26	Travis	Postwar	c. 1955	Agriculture: Post World War II	N/A
27	Travis	Postwar	c. 1950	Agriculture: Post World War II	N/A
28	Travis	Modified L-Plan	1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
29	Travis	Pyramidal	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
30	Travis	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
31	Travis	T-Plan	c. 1885	Community and Regional Development: Railroad Influence	N/A
32	Travis	Ruins	c. 1925	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
33	Travis	Postwar	c. 1950	Agriculture: Post World War II	N/A
34	Travis	Postwar	c. 1945	Agriculture: Post World War II	N/A
35	Travis	Barn	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
36	Travis	Barn	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
37	Travis	Ruins	c. 1880	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
38	Travis	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
39	Travis	Massed Side-Gable	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
40	Travis	Cemetery	c. 1853	Agriculture: Tenant Farming/Fenced-Range Ranching	A
41	Travis	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
42	Travis	Bungalow	c. 1920/1940	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
43	Travis	L-Plan	c. 1890	Community and Regional Develop: Railroad Influence	N/A
44	Travis	Postwar	c. 1945	Community and Regional Develop: Automobile Influence	N/A
45	Travis	T-Plan	1898	Community and Regional Develop: Railroad Influence	A, C (Listed)
46	Travis	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
47	Travis	Barn	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
48	Travis	PROPERTY OMITTED FOLLOWING SURVEY			N/A
49	Travis	Modified L-Plan	1900	Agriculture: Tenant Farming/Fenced-Range Ranching	C
50a	Travis	Bungalow	ca. 1935	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory*- continued -*

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
50b	Travis	Shed	ca. 1935	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
50c	Travis	El Rincon Cemetery	ca. 1884	Community and Regional Develop: Early Settlement	A
50d	Travis	Hornsby Cemetery	1845	Community and Regional Develop: Early Settlement	A
50e	Travis	Centennial Markers	1936	Community and Regional Develop: Early Settlement	A
51	Travis	Bungalow	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
52	Travis	Pyramidal	c. 1900	Community and Regional Develop: Railroad Influence	N/A
53	Travis	Pyramidal	c. 1930	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
54	Travis	Bungalow	1940	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
55	Travis	Pyramidal	1920	Agriculture: Tenant Farming/Fenced-Range Ranching	C
56	Travis	Bungalow	1930	Agriculture: Tenant Farming/Fenced-Range Ranching	B
56A	Travis	Cemetery	ca. 1885	Agriculture: Tenant Farming/Fenced-Range Ranching	A
57	Travis	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
58	Travis	Bungalow	c. 1930/1950	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
59	Travis	Bungalow	c. 1915/1950	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
60	Travis	Bungalow	c. 1935/1960	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
61	Travis	Modified L-Plan	c. 1925	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
62	Travis	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
63	Travis	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
64	Travis	Bungalow	c. 1920/1950	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
65	Travis	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
66	Caldwell	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
67	Caldwell	Pyramidal	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	C
68	Caldwell	Modified L-Plan	1910	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
69	Caldwell	Pyramidal	1915	Agriculture: Tenant Farming/Fenced-Range Ranching	C
70	Caldwell	Pyramidal	c. 1915	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory

- continued -

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
71	Caldwell	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
72	Caldwell	T-Plan	c.1904/1997	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
73	Caldwell	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
74	Caldwell	Bungalow	c. 1900	Community and Regional Develop: Automobile Influence	N/A
75	Caldwell	L-Plan	c. 1910	Agriculture: Tenant Farming/Fenced-Range Ranching	C
76	Caldwell	Postwar	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
77	Caldwell	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
78A	Caldwell	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
78	Caldwell	Bungalow	c. 1940	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
79	Caldwell	Cemetery	c. 1906	Agriculture: Tenant Farming/Fenced-Range Ranching	A
80	Caldwell	Ruins	c. 1920	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
81	Caldwell	Ruins	Unknown	Agriculture: Tenant Farming/Fenced-Range Ranching	N/A
82	Caldwell	T-Plan	c. 1890/1998	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
83	Caldwell	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
84	Caldwell	Historical Marker	Unknown	Dr. D. Port Smythe	Relocate Marker
85	Caldwell	Cemetery	c. 1870	Community and Regional Development	N/A
86	Caldwell	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
87	Caldwell	Automotive Comm.	c. 1925	Transportation	N/A
88	Caldwell	Bungalow	c. 1910	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
89	Caldwell	Cemetery	c. 1863-1932	Community and Regional Development	A
90A	Caldwell	Barn	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
90B	Caldwell	Barn	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
91	Caldwell	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
92	Caldwell	Massed-Plan	c. 1950	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
93	Caldwell	Pyramidal	c. 1905	Agriculture: Tenant Farming/Fenced Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory*- continued -*

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
94	Caldwell	Petroleum-Related	c. 1930	Oil and Gas Development	N/A
95	Caldwell	Pyramidal	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
96	Caldwell	Pyramidal	c. 1905	Agriculture: Tenant Farming/Fenced Range Ranching; Oil and Gas Development	C
97A	Caldwell	Ranch	ca. 1941	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
97B	Caldwell	one-room	ca. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	C
98	Caldwell	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
99	Caldwell	I-House	c. 1880	Agriculture: Tenant Farming/Fenced Range Ranching	C
100	Caldwell	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
101	Caldwell	T-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
102	Caldwell	PROPERTY OMITTED FROM SURVEY – OUTSIDE APE			N/A
103	Caldwell	Modified L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
104	Caldwell	L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	C
105	Caldwell	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
106	Caldwell	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
107	Guadalupe	Cemetery	unknown	Community and Regional Development	A (district)
108	Guadalupe	Modified L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching; Community and Regional Development	A (district),C
109	Guadalupe	Modified L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching; Community and Regional Development	A (district), C
110	Guadalupe	Hall and Parlor	c. 1910	Agriculture: Tenant Farming/Fenced Range Ranching; Community and Regional Development	A (district)
111	Guadalupe	L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
112	Guadalupe	Bungalow	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
113	Guadalupe	Ruins	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
114	Guadalupe	Ruins	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
115	Guadalupe	Cemetery	c. 1870	Community and Regional Development	A

Table 3.8-1 SH 130 Historic Properties Inventory*- continued -*

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
116	Guadalupe	Barn	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
117	Guadalupe	Barn	c. 1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
118	Guadalupe	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
119	Guadalupe	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
120	Guadalupe	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
121	Guadalupe	L-Plan	c. 1890/1925	Agriculture: Tenant Farming/Fenced Range Ranching	C
122	Guadalupe	Bungalow	c.1930/1970	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
123	Guadalupe	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
124	Guadalupe	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
125	Guadalupe	Bungalow	c. 1880/c. 1925/1989	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
126A	Guadalupe	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
126B	Guadalupe	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	C
127	Guadalupe	Historical Marker	Unknown	Jose Antonio Navarro	N/A
128	Guadalupe	L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
129	Guadalupe	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	C
130	Guadalupe	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
131	Guadalupe	L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
132	Guadalupe	H-Plan	c. 1880/1940	Agriculture: Tenant Farming/Fenced Range Ranching	C
133	Guadalupe	Bungalow	c. 1920	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
134	Guadalupe	Bungalow	c. 1910/1925	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
135	Guadalupe	Barn	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
136	Guadalupe	PROPERTY OMITTED FROM SURVEY - CURRENT CA. 1790 BUILDING REPLACES EARLIER ONE			N/A
137	Guadalupe	Hall and Parlor	c. 1870-1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
138	Guadalupe	Minim. Trad.	c.1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory

- continued -

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
139	Caldwell	Metal Truss Bridge	c. 1928	Transportation	C
140	Caldwell	Automotive Comm.	c. 1950	Transportation	N/A
141	Caldwell	L-Plan	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
142	Caldwell	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
143	Caldwell	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
144	Caldwell	Hall and Parlor	c. 1900/1950	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
145	Caldwell	Modified L-Plan	c. 1895/c.1915	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
146	Caldwell	Minim. Trad.	c. 1945	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
147	Caldwell	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
148	Caldwell	Modified L-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
149	Caldwell	Bungalow	c. 1920/1980	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
150	Caldwell	Hall and Parlor	c. 1890/1920	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
151	Caldwell	Hall and Parlor	c. 1890	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
152	Caldwell	Garage	c. 1900/1920	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
153	Caldwell	Bungalow	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
154	Caldwell	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
155	Caldwell	Cemetery	unknown	Community and Regional Development	A
156A	Caldwell	Ranch Complex	c. 1930/c.1950	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
156B	Caldwell	Ranch Complex	c. 1930/c. 1950/1997	Agriculture: Tenant Farming/Fenced Range Ranching	A
157A	Caldwell	Ranch House	c. 1949	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
157B	Caldwell	Ranch House	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
158	Guadalupe	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
159	Guadalupe	Pyramidal	c. 1915	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
160	Guadalupe	Bungalow	c. 1930	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
161	Guadalupe	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A

Table 3.8-1 SH 130 Historic Properties Inventory*- continued -*

Site No.	County	Property Type	Construction Date	Historic Context	NR Eligibility Criteria A, B, C, D
162	Guadalupe	Bungalow	c. 1925	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
163	Guadalupe	Pyramidal	c. 1910	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
164	Guadalupe	Bungalow	c. 1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
165	Guadalupe	Automotive Comm.	c. 1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
166	Guadalupe	Minim. Trad.	c. 1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
167	Guadalupe	Ruins	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
168	Guadalupe	Ruins	c. 1920	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
169	Guadalupe	One-Room	c. 1840	Agriculture: Early Settlement	A
170	Guadalupe	Minim. Trad.	c. 1940	Agriculture: Tenant Farming/Fenced Range Ranching	N/A
171	Guadalupe	H-Plan	c. 1900	Agriculture: Tenant Farming/Fenced Range Ranching	N/A

Using the information and documentation gathered through the windshield reconnaissance, all resources were assigned to one or more of the historic contexts as appropriate. All of the properties within a given context were then compared and the example(s) with the greatest degree of physical and architectural integrity were selected and recommended by the researchers for further NRHP evaluation, either individually or as contributing elements of a possible historic district. Typically, the assessment was based on the main dwelling or other primary structural element of the site. In those cases where access was not sufficient to adequately document and assess the physical and architectural integrity of a resource, the resource was assumed to be NRHP eligible and recommended for further evaluation.

As additionally requested information was gathered and presented for review by TxDOT-ENV in consultation with the THC's National Register staff, it was recognized that more detailed contexts were needed to better address the broad temporal range of agricultural resources recorded in the project area. Additional historical research was then conducted that enabled the researchers to subdivide the agriculture context into four chronological subsets or thematic periods. Using these revised contexts, all resources were reconsidered and again assigned to the most appropriate context.

In the process of reevaluating the many recorded agricultural resources, the need to better evaluate the entire resource using other integrity issues, such as setting, feeling and association, was also recognized. (See **Section 6.2 Eligibility Requirements** in the **Historic Buildings Report, Volumes A-C**, under separate cover). For example, after the main dwelling was evaluated primarily for its physical and architectural integrity, the presence or absence of outbuildings was also considered along with the building's relationship to the surrounding landscape. Ideally, the best example(s) in each agricultural context are the farm/ranch properties having an intact and unaltered main dwelling with an expected array of associated domestic and/or agricultural outbuildings, as well as actively used agricultural land. Allowances were made for variations in agricultural property types, such as tenant farms, that frequently lack a fully developed complex of domestic and agricultural outbuildings.

Allowances were also made within a given context for distinctive variations in the architectural style or design of the primary architectural resource. For example, within the context of "Tenant Farming...1870-1940" it was recognized that the form and design of the main farmhouse varied through time, depending on the "style" that was prevalent at the time of construction. This resulted in the recognition of more than one example that may be worthy of NRHP designation within the tenant farming context. Consequently, examples of L-plan houses, modified L-plan

houses, pyramidal cottages and Craftsman bungalows were all selected as potentially NRHP eligible properties within this one context.

Concurrence on the NRHP eligibility of these properties has been received from the THC's National Register staff (see letter dated October 16, 2000, in **Appendix C**). The THC's review determined that 34 properties are eligible for National Register listing and one property is currently listed in the NRHP. Those properties that were formally determined eligible for NRHP listing were given detailed attention in terms of assessing the degree of impact that would occur as a result of project construction (see **Section 4.13 Impacts to Historic Properties**). The impacts of the proposed action upon National Register eligible sites was one of the factors considered in selecting a preferred alternative.

3.8.6 Decision Making: Applying the NRHP Criteria

3.8.6.1 Significance Requirements

To be considered eligible for the National Register of Historic Places (NRHP), a property must possess significance under one or more of the NRHP Criteria. Each property should be evaluated and assessed within the framework of the historic context and applicable NRHP Criteria. The NRHP Criteria recognize different types of values embodied in districts, buildings, structures, sites, and objects. These values fall into the following categories:

Associative value (Criteria A and B): Properties significant for their association or linkage to events and trends (Criterion A) or persons (Criterion B) important in the past.

Design or construction value (Criterion C): Properties significant as representative expressions of design, construction, or craftsmanship.

Information value (Criterion D): Properties significant for their ability to yield important information about prehistory or history.

For a more detailed discussion of the NRHP criteria, refer to **Section 6.0 Decision Making: Applying the NRHP Criteria** in the **Historic Buildings Report, Volumes A-C**, under separate cover.

3.8.6.2 Eligibility Requirements

To be considered NRHP eligible, a property must be at least 50 years of age, and must meet at least one of the four NRHP Criteria for Evaluation, as discussed above. An eligible property must also be linked and related to one or more themes of the historic context. It must also retain its basic physical form and be recognizable to the period at which it gained its significance.

In addition to the above requirements, an NRHP-eligible property must retain its historic integrity, as defined in *National Register Bulletin 15*. *Bulletin 15* defines seven aspects of integrity: Location, Design, Materials, Workmanship, Setting, Feeling, and Association. For a more detailed discussion on the seven aspects of integrity, refer to **Section 6.2 Eligibility Requirements** in the **Historic Buildings Report, Volumes A-C**, under separate cover.

3.8.7 **Cemeteries**

Information gathered through archival research and interviews with local informants, private land owners, and local County Historical Commission personnel revealed that there were a number of previously documented as well as unidentified cemeteries in and around the project corridor. During the field survey, 12 of these cemeteries were identified within the 1/4-mile APE for the project. The cemeteries include Site Nos. 23b, 24a, and 40 in the northern portion of the study corridor; Site Nos. 50c, 50d, 56A, and 79 in the central portion of the study corridor; and Site Nos. 85, 89, 107, 115, and 155 in the southern portion of the study corridor. All of the cemeteries identified, with the exception of Site No. 85, were found eligible for NRHP listing in consultation with the SHPO.

Site No. 23b, the Palm Valley Lutheran Cemetery, is associated with the Palm Valley Lutheran Church, north of US 79 near Round Rock. Site No. 24a, the Anti-Slaveholding Union Baptist Cemetery, is in a subdivision north of US 79 and west of Palm Valley Lutheran Church. These cemeteries were recommended eligible for National Register listing under Criterion A, Consideration D, Ethnic Heritage, as the last remaining elements of early communities in Williamson County. The Hill Family Cemetery, Site No. 40, was identified in a pasture on the Mehner Farm west of Gregg Manor Road. It was recommended as eligible for National Register listing under Criterion B, Consideration D for its association with an early pioneer family.

Central to the study corridor are Site Nos. 50c and 50d, which are the El Rincon Cemetery and the Hornsby Cemetery, respectively. They were platted adjacent to one another on

the Hornsby Ranch south of FM 969. El Rincon Cemetery was recommended eligible for National Register listing under Criterion A, Consideration D for its association with the early Mexican-American community in the area; and Hornsby Cemetery was recommended eligible for National Register listing under Criterion A, Consideration D for its association with the early Anglo settlement around Hornsby Bend. Site No. 56A is small family plot at the end of San Jose Avenue southeast of Austin-Bergstrom International Airport. This small cemetery was recommended as eligible for National Register listing under Criterion B, Consideration D for its association with an early pioneer family, whose name was undetermined. The Guadalupe and Old Rest Cemeteries, Site No. 79, are east of US 183, south of the US 183 and CR 179 intersection. These cemeteries represent the last vestiges of the community of Mendoza, and were recommended for the National Register under Criterion A, Consideration D, Ethnic Heritage.

In the southern portion of the study corridor Site No. 85, the Neely Cemetery, is west of US 183 at the intersection of US 183 and CR 221, and was recommended not eligible for National Register listing. Site No. 89, the Caldwell-Miscenheimer Cemetery is northwest of Lockhart, approximately one mile north of the intersection of FM 2001 and CR 214. This cemetery was recommended as eligible for National Register listing under Criterion A, Consideration D for its association with pioneer families in Caldwell County. The Staples Cemetery, Site No. 107, is east of the town of Staples at the intersection of FM 621 and FM 20. In addition to being the best surviving resource of Staples' former African-American tenant farming era community, it is also a contributing member to the National Register eligible Staples' Tenant Farm-Era Agricultural Historic District. The cemetery was recommended for National Register listing under Criterion A, Consideration D. The Wade-Jechow Cemetery, Site No. 115, was identified along CR 241B, and was recommended eligible for National Register listing under Criterion A, Consideration D as the last remaining example of the Wade community. Site No. 155, the San Isidro de la Colonia Cemetery, was identified at the intersection of SH 20 and SH 80. As the last remaining example of the San Isidro tenant farming community, the cemetery was recommended as eligible for National Register listing under Criterion A, Consideration D.

3.8.8 Official State Historical Markers

During the field survey, four Official State Historical Markers (OSHM) were identified within the 1/4-mile APE for the project. The OSHMs include Site No. 24b, a metal THC subject marker, in the northern portion of the study corridor; Site No. 50e, three stone Centennial markers, in the central portion of the study corridor; and Site No. 84, a metal THC subject marker, and Site No. 127, a metal THC subject marker, in the southern portion of the study corridor. Of the OSHMs

identified, Site No. 50e was found to be eligible for NRHP listing in consultation with the SHPO. The markers identified at Site Nos. 24b, 84, and 127 were erected in ca. 1969, 1984, and 1985, respectively, and do not meet the 50 year age requirement for National Register eligibility.

Site No. 50e was identified on the Hornsby Ranch south of FM 969. It comprises three 1936 Centennial Markers, two located in the Hornsby Cemetery, and one located along the driveway approaching the cemetery. The markers remain in their original location, and were recommended as eligible for National Register listing at the state level under Criterion A, Consideration F, Event, recognizing the 100 year celebration of the State of Texas.

3.9 HAZARDOUS MATERIALS

A search of publicly available records for hazardous material sites and oil/gas well sites was conducted for each of the eight build alternatives (within 1,000 feet either side of the proposed centerlines). The following list of Texas Natural Resource Conservation Commission (TNRCC), U.S. Environmental Protection Agency (USEPA), and Texas Railroad Commission (TRC) databases were reviewed for this study.

Texas State Superfund List—The Texas State Superfund database is a list of sites that the State of Texas has identified for investigation or remediation.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database—CERCLIS is the official repository for site and non-site specific Superfund data in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and contains information on hazardous waste site assessment and remediation from 1983 to the present.

National Priority List (NPL)—The NPL is a priority subset of the CERCLIS list and is a list of priority sites that the USEPA has determined to pose a threat to human health and/or the environment and where remedial action is required.

Resource Conservation and Recovery Information System (RCRIS) - Treatment, Storage or Disposal (TSD) Database—RCRIS, under the Resource Conservation and Recovery Act (RCRA), provides information concerning facilities that generate, transport, treat, store, and/or disposes of hazardous waste as federally defined. The

RCRIS TSD database is a subset of the RCRIS list which tracks facilities that treat, store and/or dispose of hazardous waste.

RCRIS Corrective Action Database – The RCRIS Corrective Action database lists RCRIS sites that are currently or have had in the past corrective action.

RCRIS Generators Database – The RCRIS Generators database tracks facilities that generate or transport hazardous waste. A conditionally exempt small quantity generator (CESQG) is a facility that produces less than 100 kilograms (kg) per month of hazardous waste, a small quantity generator (SQG) produces at least 100 kg per month but less than 1,000 kg per month of hazardous waste, and a large quantity generator (LQG) produces more than 1,000 kg per month of hazardous waste.

Solid Waste Facilities – The TNRCC requires municipalities and counties to report known active and inactive landfills. The Solid Waste Facilities database is a listing of solid waste facilities, transfer stations, and processing stations registered and tracked by the TNRCC Solid Waste Division.

Registered Storage Tank Listings – The Registered Storage Tank database is a list of facilities with permitted underground storage tanks (USTs) and/or above ground storage tanks (ASTs).

Leaking Underground Storage Tank (LUST) Listings – The LUST database is a list of facilities with known underground storage tank releases.

TRC Oil and Gas Division county base maps, field maps, GIS maps, and Well-Bore Database – The TRC issues permits and approval for the drilling of oil and/or gas wells within the State of Texas. All permitted wells are plotted on various TRC maps and placed in the Well-Bore database maintained by the TRC.

As shown on **Figures 3.9-1a, b, and c**, the majority of identified hazardous material sites are located in areas east of Austin and within the city limits of Lockhart and Seguin. Very few hazardous material sites were identified within the remaining portions of the study corridor. In addition, several documented producing oil fields are located within the study corridor primarily to

the south of Lockhart and north of Seguin. Very few oil/gas production activities were noted within the corridor between Georgetown and north of Lockhart.

A total of 46 hazardous material sites and six producing oil wells were identified within 1,000 feet of the proposed centerlines of the eight build alternatives. These sites/wells are discussed in further detail in the following sections.

3.9.1 Hazardous Material Sites

The majority of the hazardous material sites identified within 1,000 feet of the proposed centerlines of the eight build alternatives are located in the northern part of Seguin (near the area of the intersection of SH 123 and I-10) and to the east of Austin (between SH 71 and US 290 East). Two hazardous material sites were also identified near the intersection of I-10 and US 90 in Seguin and eight hazardous material sites were identified north of Seguin along SH 123. Three hazardous material sites were identified north of Lockhart along US 183 and four hazardous material sites were identified in Williamson County. The following table summarizes the identified hazardous material sites.

Table 3.9-1 Hazardous Material Sites In the SH 130 Corridor

Figure ID	Facility Name/ Address	Regulatory Database	Summary
1	Motorola, Inc. 3740 N. Austin St. Seguin, Texas	RCRIS Large Quantity Generator	Facility generates more than 1,000 kg per month of hazardous waste.
2	Hilbert Implements, Inc. A.K.A. Tractor City 3030 N. Austin Seguin, Texas	Registered USTs	Facility is listed as having had 1-1,000 gal UST and 1-500 gal. UST that were both removed from the ground.
3	Abandoned Gas Station 105 W SH 5 Seguin, Texas	LUST	Tank release reported on 9/9/94. No ground water impact and no apparent threats or impacts to nearby receptors. TNRCC issued final concurrence and the case is closed. Not known if USTs remain in-place.
4	Tetco #1172 (Mobil) 2727 N. Austin St. Seguin, Texas	Registered USTs	Facility has 1-8,000 gal., 1-6,000 gal., and 1-5,000 gal. USTs that are currently in-use.
5	Ryder #1306 2506 N. Austin St. Seguin, Texas	Registered USTs	Facility has 1-1,000 gal., 2-4,000 gal., 2-10,000 gal., and 1-12,000 gal. USTs that are currently in-use.

Table 3.9-1 Hazardous Material Sites In the SH 130 Corridor
- continued -

Figure ID	Facility Name/ Address	Regulatory Database	Summary
6	Sharp Propane 2521 N. Austin Seguin, Texas	Not Registered	Aboveground Storage Tank noted during field reconnaissance/verification activities.
7	Marshall Environmental Services Co. 2525 N. Austin Seguin, Texas	Registered ASTs and RCRIS Transporter	Facility is listed as having had five ASTs ranging in size from 2,000 gallons to 16,000 gallons that are currently out-of-use. Facility is also listed as a RCRIS Transporter.
8	Dietz Tractor Company 522 E. I-10 Seguin, Texas	Registered UST and LUST	Facility is listed as having had 1-550 gallon UST that was removed from the ground. Facility also listed as the location of a LUST. Minor soil contamination only. TNRCC issued final concurrence and the case is closed.
9	Tiger Tote #11 1098 I-10 East Seguin, Texas	Registered USTs	Facility has 1-6,000 gal. UST, 1-8,000 gal. UST, and 1-12,000 gal. UST currently in-use and 1-500 gal. UST that was removed from the ground.
10	Alexander Oil Company A.K.A. Jubs Chevron 2993 N. SH 123 Bypass Seguin, Texas	Registered USTs and ASTs	Facility has 3-20,000 gal. USTs and 1-2,000 gal. UST and 13 ASTs ranging in size from 2,000 gal. to 10,000 gal. that are currently in-use. Facility also listed as having six (6) additional ASTs that are out-of-use. The tanks are used for storage of diesel fuel and gasoline.
11	Berg Truck & Impl. Co. A.K.A. Keisers Manufacturing 3501 N. SH 123 Bypass Seguin, Texas	Registered UST	Facility is listed as having one (1) UST of unknown size that is currently abandoned in-place.
12	Guadalupe County Road and Bridge Department	Not Registered	ASTs observed at facility during field reconnaissance/verification activities.
13	D&D Farm & Ranch Supermarket 516 E. I-10 Seguin, Texas	Registered USTs and LUST	Facility is listed as having had 1-1,500 gal. UST and 1-10,000 gal. UST that were both removed from the ground. Facility also listed the location of a LUST. The release impacted soil only and the TNRCC issued final concurrence and closed the case.
14	Greinke Moving and Storage 440 E. I-10 Seguin, Texas	Registered UST	Facility is listed as having had 1-1,000 gal. UST that was removed from the ground.
15	American Biological Tech 940 Crossroads Blvd. Seguin, Texas	RCRIS Conditionally Exempt Small Quantity Generator	Facility generates less than 100 kg per month of hazardous waste.
16	Jims Formal Wear Company 1002 Schriewer Seguin, Texas	RCRIS Small Quantity Generator	Facility generates more than 100 kg per month of hazardous waste but less than 1,000 kg per month.

Table 3.9-1 Hazardous Material Sites In the SH 130 Corridor
- continued -

Figure ID	Facility Name/ Address	Regulatory Database	Summary
17	Gannon Mfg. Div. of Woods 1001 Schriewer Seguin, Texas	RCRIS Small Quantity Generator	Facility generates more than 100 kg per month of hazardous waste but less than 1,000 kg per month.
18	Sac-N-Pac #201 6730 SH 123 Geronimo, Texas	Registered USTs	Facility has 1-5,000 gal. UST, 1-8,000 gal. UST, and 1-12,000 gal. UST that are currently in-use.
19	Navarro ISD 6450 SH 123 Geronimo, Texas	Registered UST	Facility is listed as having had 1-750 gal. UST that was removed from the ground.
20	Great Western Express, Inc. A.K.A. Big Truck Alignment 2010 I-10 W. Seguin, Texas	Registered AST	Facility is listed as having 1-8,000 gal. AST that is currently out-of-use.
21	Short Stop 3051 S. SH 123 Seguin, Texas	Registered USTs	Facility has 2-10,000 gal. USTs that are currently in-use and three USTs (1-2,000 gal. and 2-1,000 gal.) that are abandoned in-place.
22	Country Store (Phillips 66) 3470 E. Hwy 90 Seguin, Texas	Not Registered	Possible USTs at site. Facility was noted as closed during field reconnaissance/verification activities.
23	Pace Distributing Address Unknown Seguin, Texas	Not Registered	ASTs and dispensers noted during field reconnaissance/verification activities.
24	Tiger Tote #19 U.S. Hwy. 183 and FM 1185 Lockhart, Texas	Registered USTs	Facility has 2-8,000 gal. USTs and 1-6,000 gal. UST that are currently in-use.
25	Unnamed Facility U.S. Hwy. 183 and SH 21 Lockhart, Texas	Registered USTs	Facility is listed as having had 3-1,000 gal. USTs that were removed from the ground.
26	Graef Grocery (Exxon) Address Unknown	Not Registered	Facility appears to have three (3) USTs based on field reconnaissance/verification activities.
27	Hornsby Bend Wastewater Treatment Plant 2210 FM 973 Austin, Texas	Registered USTs, ASTs, and LUST	Facility is listed as having had 2-10,000 gal. USTs that were removed from the ground. Facility listed as having 4-22,000 gallon ASTs. Two (2) of the ASTs are currently out-of-use and two (2) are currently in-use. Facility also listed as the location of a LUST. According to the database report, a Phase II Investigation is in progress.
28	Mini Max Food Mart 10412 FM 969 Austin, Texas	Registered USTs	Facility has 2-4,000 gal. USTs and 1-8,000 gal. UST that are currently in-use.

Table 3.9-1 Hazardous Material Sites In the SH 130 Corridor
- continued -

Figure ID	Facility Name/ Address	Regulatory Database	Summary
29	New Travis East Warehouse 8902 E. FM 969 Austin, Texas	Registered USTs	Facility has 4-4,000 gal. USTs that are currently in-use and 1-550 gal. UST that was removed from the ground.
30	Travis State School A.K.A. Academy of Austin 8509 FM 969 Austin, Texas	Registered USTs and LUST	Facility has 1-6,000 gal. UST that is temporarily out of use and 2-1,000 gal. USTs and 1-2,000 gal. UST that have been removed from the ground. The facility is also listed as the location of a LUST. Ground water was impacted and off-site migration is likely.
31	Chevron Food Mart 7801 FM 969 Austin, Texas	Registered USTs	Facility has 3-2,000 gal. USTs and 1-4,000 gal. UST that are currently in-use.
32	Double R Grocery 7700 ML King Blvd. Austin, Texas	Registered USTs	Facility has 1-6,000 gal UST and 2-8,000 gal. USTs that are currently in-use.
33	Walnut Creek Wastewater Treatment Plant 7113 E. ML King Blvd. Austin, Texas	Registered UST and Small Quantity Generator	Facility listed as having had 1-21,000 gal. UST that was removed from the ground. Facility also listed as generating less than 100 kg per month of hazardous waste.
34	Antique Tile and Marble 7400 FM 969 Austin, Texas	Registered USTs	Facility is listed as having had 1-1,000 gal. UST and 1-1,500 gal. UST that were removed from the ground.
35	Sunmart #168 I-35 and SH 195 Georgetown, Texas	Registered USTs	Facility has 2-6,000 gal. USTs, 1-8,000 gal. UST, and 1-20,000 gal. UST that are currently in-use.
36	Leroy's Service Station (Exxon) I-35 and SH 195 Georgetown, Texas	Registered USTs and LUST	Facility is listed as having had 1-2,000 gal. UST and 2-6,000 gal. USTs that were removed from the ground. Facility also listed as the location of a LUST. Soil contamination only that requires a full site assessment and remedial action plan. TNRCC has issued initial directives and is awaiting a response from the responsible party.
37	LG Electronics 1880 N. FM 1460 Round Rock, Texas	RCRIS Conditionally Exempt Small Quantity Generator	Facility is listed as generating less than 100 kg per month of hazardous waste.
38	ABF Freight System Inc. 10036 U.S. Hwy. 290 East Austin, Texas	RCRA Transporter	Facility listed as a transporter of hazardous waste.
39	Bethke Excavation Inc. 10061 U.S. Hwy. 290 East Manor, Texas	Registered USTs	Facility has 2-6,000 gal. USTs that are temporarily out-of-use.

Table 3.9-1 Hazardous Material Sites In the SH 130 Corridor
- continued -

Figure ID	Facility Name/ Address	Regulatory Database	Summary
40	City of Austin Fire Station #26 6702 Wentworth Austin, Texas	Registered UST	Facility is listed as having had a 110 gallon UST that was removed from the ground.
41	Con-Way Express 8101 Bagby Dr. Austin, Texas	Registered AST	Facility has 1-10,000 gal. AST, used for storage of diesel fuel, that is currently in-use.
42	Super Quick Market FM 969 and Craigwood Austin, Texas	Not Registered	Retail sale of gasoline, USTs observed during field reconnaissance/verification activities.
43	Foremost Const. Co. Inc (W.D. Chrisner & Harvey Broussard) 8400 Delwau Lane Austin, Texas	Registered USTs and Landfill Site	Facility is listed as having had 1-2,000 gal. UST that was removed from the ground. Facility also listed as having a unauthorized/non-permitted landfill for brush and construction demolition material. According to the database report, the site was closed in 1995 and transferred to the enforcement branch of the TNRCC.
44	David's One Stop 6505 U.S. Hwy. 79 Hutto, Texas	Registered USTs	Facility has 4-10,000 gal. USTs that are currently in-use.
45	Jadon Company 845 E. I-10 Seguin, Texas	Registered USTs and LUST	Facility is listed as having had 1-3,000 gal. UST and 1-6,000 gal. UST that were both removed from the ground. Facility also listed as the location of a LUST. Soil contamination only. TNRCC issued final concurrence and the case is closed.
45	Dirt Doctor AG Service 845 E. I-10 Seguin, Texas	CERCLIS	Facility is listed as having disposed/buried unknown quantities of pesticide containers. The EPA conducted a preliminary assessment in 1986 and 1987 and a site inspection in 1988 and 1990. According to the database report, No Further Remedial Action is Planned.

In addition to the above identified sites, several landfills were identified within the study corridor near the intersection of US 290 and Giles Road in Austin. The landfills are operated by Browning-Ferris Industries (BFI) known as the Sunset Farms Landfill, and Waste Management, Inc. known as the Austin Community Landfill. The former Travis County landfill is also located in this area. The build alternatives are located approximately one mile and two miles to the west and east of the landfill sites, respectively.

3.9.2 Oil/Gas Well Sites

The majority of oil and/or gas exploration activity within the study corridor has occurred between Lockhart and Seguin. A total of 104 wells have been drilled within 1,000 feet of the proposed centerlines of the eight build alternatives within this portion of the study corridor. Only six of these drilled wells are currently producing oil and two of the wells are injection wells. The majority of the remaining wells were dry wells that never produced oil and were subsequently plugged and abandoned. The remaining sixteen wells produced oil at one time but have since been plugged and abandoned.

Very little oil and/or gas exploration activity has occurred between Georgetown and FM 1185 near Lockhart. The majority of the wells that were drilled within this portion of the study corridor were dry wells that never produced oil and were subsequently plugged and abandoned. Currently, no producing wells were identified within 1,000 feet of the proposed centerlines of the eight build alternatives between Georgetown and FM 1185 near Lockhart.

3.10 VISUAL AND AESTHETIC QUALITIES

Aesthetic quality refers to an individual's subjective perception of natural beauty in a landscape. It can be determined by the presence of designated scenic areas, protected view corridors, overlooks along trails or roadways, or by a positive endorsement of a particular view by the public. Due to the absence of these in the SH 130 corridor, a number of other factors may be taken into account when considering the aesthetic quality of a certain feature or landscape within the corridor. Among these are the following:

- Uniqueness of the landscape in relation to the region as a whole
- Whether the scenic area is a foreground, middleground, or background view
- Focus of the view
- Scale of elements in the scene
- Number of potential viewers
- Duration of the view
- Amount of previous modification or disturbance to the landscape

Based on these criteria, the corridor is considered to exhibit a medium degree of aesthetic quality, with few unique or necessarily spectacular views. A majority of the land in the corridor is in agricultural use while some areas, primarily within city limits, are urbanized or are undergoing

conversion to urban uses. As a result, the landscape is marked by varying degrees of human influence, including existing highways.

From a resident's perspective, the region is characterized by the flat to gently rolling hills of the Blackland Prairies. Water features found within the corridor consist of numerous creeks and streams, man-made stock ponds and impoundments, and the three major river systems, the San Gabriel, the Colorado, and the San Marcos. Views of these river systems and their riparian zones may be considered the areas in the corridor with the highest aesthetic value. However, in certain areas, sand and gravel mining operations along the banks of these rivers detract from the special aesthetic qualities these views may offer.

From a roadway travelers perspective, TxDOT has mapped ten separate "Travel Trails" throughout Texas to provide travel routes through different areas of the state, highlighting natural, cultural, and scenic attractions. These routes are described in pamphlets distributed by TxDOT offices and tourist information centers and are marked by special signs along the designated highways. The "Independence Trail" features some 40 points of historical interest in a loop roughly between Houston and San Antonio, and it passes through the corridor along SH 80 between Prairie Lea and Fentress. The "Trail" then follows FM 20 north out of Caldwell County. Points of interest relating to the theme of the "Trail" may be found within the southern portion of the corridor.

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the SH 130 FEIS describes the impacts to existing social, economic, and environmental resources by each of the proposed alternatives, including the No-Action Alternative. For each resource category, attention is also given to any unique considerations about constructing and operating the Preferred Alternative as a toll road. In many cases, recommendations to minimize or mitigate impacts to resources are presented along with the impacts. Formal mitigation measures are presented in **Section 5.0 Mitigation Recommendations**.

4.1 LAND USE IMPACTS

Section 3.1 Land Use documented the SH 130 corridor's historical and current land use patterns and identified specific land uses (both existing and proposed) that may be potentially affected by the SH 130 proposed alternatives. It also described local government plans and policies that may influence the selection of an alternative for SH 130 or have some bearing on possible impacts or mitigation measures. All SH 130 build alternatives would change land use within the right-of-way of the proposed action. Direct land use impacts would be related to the relocation of residential and business structures and the loss of agricultural and developable land within the right-of-way.

The following subsections address several factors that were used to assess potential land use impacts for each alternative, including compatibility with local plans and policies, direct conversion of land use, regional land use impacts, and toll road considerations.

4.1.1 Compatibility of the SH 130 Alternatives With Local Plans and Policies

4.1.1.1 No-Action Alternative

The No-Action Alternative would be incompatible with the plans and policies of most local governments within the SH 130 corridor. Local governments generally support the construction of SH 130, and many of the cities and counties within the SH 130 corridor have formally stated their support for specific build alternatives. No city or county within the corridor is opposed to building SH 130. If SH 130 is not constructed, some local governments within the corridor may have to modify their land use and transportation plans to discourage development within the SH 130 corridor, provide other means of mobility, or both. For example, the No-Action Alternative could result in less development in the vicinity of Lockhart and Seguin. Both cities have

planned annexations in the vicinity of Alternatives 2 (Preferred Alternative), 3, 7 and 8, and have tailored land use plans accordingly. Although the No-Action Alternative would not preclude future urban development around these two cities, the lack of SH 130 as a major transportation feature in the area could alter planned uses for land within Lockhart's and Seguin's jurisdictions.

4.1.1.2 Build Alternatives

The degree to which SH 130 is compatible with local plans and policies varies among the jurisdictions within the corridor. Several local jurisdictions, including the rapidly growing areas of Georgetown and Pflugerville, specifically plan for development along SH 130. The majority of the right-of-way required for the project alternatives between Lockhart and Seguin is agricultural land and consists primarily of non-urban land uses. With the exception of small portions of all build alternatives located within the city limits and ETJs of Lockhart and Seguin, the majority of the proposed right-of-way is not zoned or subject to municipal jurisdiction.

The City of Austin's "Smart Growth Initiative" is also generally intent on stimulating growth in eastern Travis County, with both the City and Travis County preferring the easternmost alternatives (Alternatives 2 [Preferred Alternative], 4, 5, and 8). **Table 4.1-1** indicates whether SH 130 build alternatives are compatible with local plans or policies. In most cases, compatibility is determined by preferences stated in the jurisdictions' respective adopted resolutions. The table indicates whether or not an alternative is consistent with an adopted resolution.

Table 4.1-1 Compatibility of the SH 130 Build Alternatives With Local Plans and Policies

Local Plans and Policies	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
Williamson County Resolution, January 20, 1998	Yes	No	Yes	Yes	No	No	No	Yes
City of Georgetown “Century Plan – Development Plan” and January 27, 1998 Resolution	Yes	No	Yes	Yes	No	No	No	Yes
City of Round Rock “General Plan 2000” and February 25, 1999 Resolution	No	Yes	No	No	Yes	Yes	Yes	No
Travis County Commissioners Court Resolution, February 3, 1998	No	Yes	No	Yes	Yes	No	No	Yes
City of Pflugerville Resolution, January 27, 1998	Yes	No	Yes	No	No	Yes	Yes	No
City of Austin Resolution, February 12, 1998	No	Yes	No	Yes	Yes	No	No	Yes
City of Lockhart Proposed “2020 Comprehensive Plan”**	No	Yes	Yes	No	No	No	Yes	Yes
City of Seguin “Comprehensive Plan, 2005”	No	Yes	Yes	No	No	No	Yes	Yes
Guadalupe County Resolution, September 22, 1997	No	Yes	Yes	No	No	No	Yes	Yes

*Preferred Alternative

**Draft

Regardless of which SH 130 build alternative is selected, the cities and counties listed above have a variety of tools at their disposal to manage growth within their jurisdictions. As discussed in **Section 3.0 Affected Environment**, zoning and subdivision ordinances and other requirements can be applied by municipal governments to ensure the orderly growth of their respective communities. The application of such tools, however, occurs within a political process.

For example, since 1986 the City of Round Rock had assumed the route for SH 130 would be similar to that of Alternatives 1, 3, 4, and 8. Since then, the City has required adjacent developments to reserve land from development that would be necessary for SH 130 right-of-way. These actions have preserved a corridor through portions of the Round Rock area. Seeing this corridor on Round Rock planning documents and commercially produced maps, developers and individuals have constructed homes and businesses further to the east, assuming that they would not be in the path of SH 130. Ironically, the Round Rock City Council in 1999 endorsed the easternmost

alternatives (Alternatives 2 [Preferred Alternative], 5, 6, and 7), contrary to previous community planning efforts.

North of the City of Lockhart, Alternatives 1, 4, 5, and 6 cross an area considered for recreational use in the vicinity of Plum and Elm Creeks.¹²¹ In addition, the southern end of these alternatives is located along SH 123 within the City of Seguin's jurisdiction and crosses land recently annexed and zoned for commercial and residential land use. Additional annexations in this area are planned. Selection of these alternatives, therefore, could interfere with long-term goals of both cities.

As discussed in **Section 3.1.3 Local Government Plans and Policies**, comprehensive plans for both Lockhart and Seguin support the concept of roadway development along Alternatives 2 (Preferred Alternative), 3, 7, and 8. Annexation planning efforts on the west side of Lockhart incorporated a major freeway (SH 130). The southern end of Alternatives 2 (Preferred Alternative), 3, 7, and 8 is located within the City of Seguin's jurisdiction and crosses land zoned residential, commercial and industrial. According to the City of Seguin's planning department, an industrial corridor is planned along the portion of I-10 connecting to SH 130. Due to the availability of land in close proximity, Alternatives 2 (Preferred Alternative), 3, 7, and 8 could facilitate industrial development in this area, a goal supported by the City of Seguin.

4.1.2 Direct Land Use Impacts

4.1.2.1 No-Action Alternative

Under the No-Action Alternative, current land use patterns within the corridor would probably remain the same. Land use changes within the northern, urbanizing areas as well as the southern more agricultural areas should remain consistent with current trends as described in **Section 3.1.2 Existing and Proposed Land Uses**.

¹²¹Dan Gibson, Lockhart City Planner, 1999. Personal communication with the City of Lockhart has revealed unpublished plans for a recreation area to be associated with a proposed Lake Lockhart. Funds for either proposed project have yet to be secured.

4.1.2.2 Build Alternatives

All build alternatives would change land use within the right-of-way proposed for SH 130. The SH 130 build alternatives directly result in the conversion of approximately 5,300 to 5,700 acres of land from current uses to SH 130 right-of-way, depending on which alternative is selected. Direct land use impacts would be related to the relocation of residential and business structures (discussed in **Section 4.4 Relocation and Displacement Impacts**) and the loss of agricultural and developable land within the right-of-way.

All of the proposed build alternatives would result in long-term changes in land use within the study corridor. Additional land use changes would occur due to restriction of access across the proposed facility. In some areas, additional investment in infrastructure (access roads and utilities) would be required to ensure continuation of service.

During construction, short-term impacts to land uses adjacent to an alternative, especially in built-up areas, would occur due to the movement of workers and materials through the area and construction activities. Construction noise and dust, as well as temporary disruption of traffic flow on local roads, may also temporarily affect residents, businesses and farming operations in the vicinity of the project. Construction activities may be allowed at night to minimize the effects on daytime traffic on existing facilities, or where construction schedules are deemed important. Coordination between TTA, TxDOT, and landowners regarding construction scheduling and access to the construction site and right-of-way should minimize any such temporary disruptions.

4.1.3 **Regional Land Use Impacts**

4.1.3.1 No-Action Alternative

As the four-county region grows by as much as 150 percent over the next 30 years, increased residential, commercial, and other development will generate additional automobile trips within the SH 130 corridor. Without SH 130, the transportation system will be less able to accommodate additional trips, resulting in increased traffic congestion, travel delays, and the need for additional roadways, widening of existing highways and arterial roadways, and other congestion-reduction improvements. This is especially true within the northern portion of the corridor where urbanization is already occurring. Such transportation improvements would be in addition to those currently proposed within the corridor (see **Section 2.0 Alternatives** for information about planned

improvements to existing roadways, I-35 HOV lane, TSM/TDM, public transportation, and commuter rail).

The absence of the SH 130 transportation facility will also have a limiting effect on growth within the corridor as residential and commercial developers choose to locate their projects in areas with superior transportation infrastructure. This would leave the agricultural character of the southern portion of the study corridor relatively unchanged while current trends in urban development would likely continue in the northern portion of Travis County and southern Williamson County.

4.1.3.2 Build Alternatives

Construction of SH 130 may indirectly affect land use within the corridor, resulting in long-term land use changes to the landscape. Like most new location highways, construction of SH 130 could enhance land development opportunities, helping to create attractive opportunities for the location of land uses that thrive on drive-by exposure or access to major transportation routes. However, SH 130 is by no means the only ingredient for growth within the corridor, as land development depends on several other factors being present. There must be market demand for new development, favorable local and regional economic conditions, adequate utilities, and supportive local land development regulations and policies.

Many of these ingredients are present within the SH 130 corridor, especially in the northern portion. The substantial development that has occurred for many years in the suburban areas east of I-35 in Williamson and Travis counties would indicate the presence of favorable market and economic conditions. Local land development plans and policies, such as Georgetown's "Century Plan – Development Plan" and the City of Austin's "Smart Growth Initiative," provide public support for growth within the SH 130 corridor, although the utility infrastructure (e.g., water and wastewater lines) for more substantial amounts of land development activity is presently lacking.¹²²

With certain notable exceptions such as Samsung Austin Semiconductor and Austin-Bergstrom International Airport, much of the new development within the SH 130 corridor has been single-family residential subdivisions. The construction of SH 130 may indirectly encourage a more

¹²²Charles Heimsath, Capitol Market Research, personal communication, 1999.

diverse assemblage of land uses to occur in the area (e.g., multi-family, commercial, mixed-use, industrial). These new land uses are likely to be concentrated in areas where SH 130 would intersect existing or planned major roadways and along frontage roads, where provided.

By indirectly encouraging land development activity, the SH 130 build alternatives could be a contributing factor in triggering secondary social, economic, and environmental impacts. Secondary development induced by the facility could encourage urban development and convert historically rural land to urban and suburban land uses in some portions of the corridor, particularly between Lockhart and Seguin. However, in the northern portion of the corridor, the proposed action's indirect or secondary impacts are not consistent with the conventional viewpoint of urban sprawl stimulated by a new location suburban roadway. New land development within this part of the corridor has and will continue to occur regardless of whether or when SH 130 is built. The adverse impacts of development can be at least partially moderated by the existing land use and development controls of the local governments throughout the corridor. As mentioned above, most local governments in the SH 130 corridor have adopted comprehensive plans or passed resolutions that recognize and support the construction of SH 130. Some of these local plans even incorporate the anticipated ancillary development. SH 130 may influence future capital improvement plans of municipalities in the region as well as land use planning goals. Most of these plans share a common desire to create a balance between community/economic growth and preservation and protection of existing natural resources.

Secondary impacts could also potentially include the loss of access to land across the controlled access facility; localized pressure for business development in the vicinity of interchanges; the disruption (or uniting) of the physical fabric of neighborhoods; impacts to areas of scenic attraction and recreational value; and urban growth. These impacts are further discussed in the appropriate sections of this document and are summarized in **Section 4.18 Secondary and Cumulative Impacts**.

4.1.4 Toll Road Considerations

As a candidate toll facility, SH 130 may require additional right-of-way to accommodate toll plazas and other amenities unique to toll facilities (see **Section 2.0, Figures 2.4-4 a, b, and c** for proposed location of toll plazas). The amount of additional right-of-way – estimated to total approximately 220 acres – is subject to design. Additional amounts of developed, undeveloped, or agricultural land uses may be converted to SH 130 right-of-way. Efforts will be made to site toll plazas at locations that avoid or minimize any adverse environmental effects. No residential,

commercial, or community facilities are expected to be displaced as a result of additional right-of-way at the toll plaza locations.

Construction of SH 130 as a toll road will have only a minor bearing on its ability to affect land development. Frontage roads – along which property access is not controlled and adjacent land development is most likely to occur – are provided primarily for the purpose of restoring access. Frontage roads do offer motorists a “free” – albeit slower and discontinuous – option to paying for the use of main lanes. It is TTA’s intent to minimize the construction of frontage roads along SH 130. However, frontage roads will be provided when necessary to restore access to adjacent properties. In addition, frontage roads will be considered when requested by local elected officials, provided they are (1) consistent with official local or regional transportation plans, (2) paid for by others, and (3) do not negatively affect toll revenues if the facility is constructed as a toll road. Limiting the extent of frontage roads may indirectly limit the amount of adjacent land development along SH 130. Even so, there will be numerous other potential land development opportunities along the toll road, such as at interchanges and along cross streets. For this reason, the toll road designation is not expected by itself to either appreciably diminish or augment induced land development. However, compared to a freeway, a toll road may further limit highway access, and could result in fewer opportunities for development along the facility thereby potentially reducing the amount of land use change related to secondary development.

4.2 FARMLAND IMPACTS

4.2.1 Consultation With The Natural Resources Conservation Service

Consultation has concluded with the Soil Survey Section of the Natural Resources Conservation Service (NRCS) to determine the proposed action’s compliance with the Farmland Protection Policy Act (FPPA), as detailed in Subtitle I of Title XV of the Agricultural and Food Act of 1981. As part of the consultation, Farmland Conversion Impact Rating Forms AD-1006 were completed and submitted to the NRCS. These forms, which are included in **Appendix B** of this FEIS, depict the NRCS’ assessment of the conversion of important farmlands to transportation use as a result of the proposed action.¹²³ Based on the NRCS assessment, the impacts of the conversion of important farmland by the SH 130 build alternatives differ appreciably only in the southern end

¹²³Brown, S., Soil Survey Section, Natural Resources Conservation Service (NRCS), United States Department of Agriculture (USDA), August 24, 1999, Personal Communication. Important farmland includes both prime farmland and farmland that is considered to be of statewide importance.

of the study corridor, in Guadalupe County. In this area, and specifically along Alternatives 1, 4, 5, and 6, the NRCS has determined that the conversion of important farmland could result in an adverse impact. Alternatives 2 (Preferred Alternative), 3, 7 and 8 (as well as the portions of Alternatives 1, 4, 5 and 6 that fall within Williamson, Travis and Caldwell Counties) are not expected to adversely impact important farmlands.

4.2.2 Impacts to Agricultural Operations

The proposed build alternatives for SH 130 will require the segmentation of agricultural land which may constrain access by farm equipment and livestock. No alternatives to this segmentation, other than the No-Action, are available, and all build alternatives are anticipated to have a similar effect on segmentation. Access will be restored to all affected properties, but in some instances travel across a formerly undivided parcel may be hampered, or remainders may be uneconomical for farming or grazing purposes. In some of these cases farm businesses may be eligible for compensation through the right-of-way acquisition process.

The proposed action may have positive effects on agricultural operations as well. It may improve farm-to-market accessibility and improve safety for product and equipment transport.

4.2.3 Impacts to Important Farmlands

4.2.3.1 No-Action Alternative

The No-Action Alternative will not require the conversion of important farmlands to transportation use. This alternative will lead to greater congestion on other area roadways creating delays for shipments of agricultural products, and may increase traffic safety concerns for the transport of livestock or equipment.

4.2.3.2 Build Alternatives

Direct Conversion

The direct conversion of important farmlands is defined by those lands encompassed by the proposed right-of-way not “committed to or already in urban development”. This conversion will occur with all eight build alternatives and ranges from approximately 3,781 acres to 3,984 acres. **Table 4.2-1** shows a comparison of the amount of important farmland to be directly converted to

transportation use by each build alternative, and the percentage of the total important farmland in Williamson, Travis, Caldwell, and Guadalupe Counties that the conversion represents.

**Table 4.2-1 Important Farmlands to be Directly Converted to Transportation Use
By the SH 130 Build Alternatives**

Alternative	Important Farmland to be Converted (Acres)			Percentage of Converted Important Farmland in Four County Region
	Prime Farmland	Farmland of Statewide Importance	Total	
1	3,309	608	3,917	0.36%
2*	2,783	1,059	3,842	0.36%
3	2,754	1,027	3,781	0.35%
4	3,286	636	3,922	0.37%
5	3,338	640	3,978	0.37%
6	3,371	613	3,984	0.37%
7	2,816	1,032	3,848	0.36%
8	2,731	1,055	3,786	0.35%

**Preferred Alternative*

Source: Soil Survey Section, Natural Resources Conservation Service, United States Department of Agriculture, 2000.

Overall, there is only a slightly discernible difference among the alternatives in terms of their direct impact to important farmlands. As **Table 4.2-1** shows, Alternative 6 would result in the largest direct conversion of important farmland to transportation use with 3,984 acres, followed closely by Alternatives 5 and 4 (3,978 and 3,922 acres, respectively). The remaining alternatives would result in similar direct impacts to important farmlands, with Alternative 3 converting the least amount (3,781 acres) to transportation use. The conversion due to any of the proposed build alternatives, however, would constitute a very small percentage, (less than half of one percent) of the total important farmland in Williamson, Travis, Caldwell, and Guadalupe Counties.

Indirect Conversion

Indirect conversion of important farmland is also anticipated as a result of the proposed action. This conversion is defined as those lands adjacent to the right-of-way and could include

small parcels of cultivated lands left unfarmable due to access restrictions or fragmentation. Other cultivated lands could be converted to residential, commercial or other uses, subject to local land development regulations, as an indirect effect of SH 130. An estimate of the total acreage of unfarmable parcels along the length of each of the build alternatives is included on Forms AD-1006 in **Appendix B**. These estimates range from 181 acres for Alternative 2 to 288 acres for Alternative 1. An accurate estimation of the farmland that could be subject to induced or indirect development is not feasible and therefore not included in the FEIS. As stated in **Section 4.1 Land Use** and **Section 4.18 Secondary and Cumulative Impacts**, and shown on Forms AD-1006, local jurisdictions and not TxDOT have the authority to regulate local land use in the SH 130 corridor, and these cities and counties have a variety of tools at their disposal to manage growth within their respective jurisdictions.

4.2.4 Toll Road Considerations

As a candidate toll facility, SH 130 may require up to approximately 220 acres of additional right-of-way to accommodate toll plazas and other amenities unique to toll facilities (see **Section 2.0, Figures 2.4-4 a, b, and c** for proposed location of toll plazas). The amount of additional right-of-way is subject to design decisions to be made later in the project development process. Additional amounts of agricultural land, including important farmland, may be converted to SH 130 right-of-way, but impacts to important farmlands directly attributable to the operation of SH 130 as a toll road will be minimal.

4.3 SOCIAL IMPACTS

4.3.1 Impacts to Neighborhoods and Other Residential Areas

4.3.1.1 No-Action Alternative

The No-Action Alternative may have an impact on neighborhoods or other residential areas by the increase in traffic congestion that is expected to occur on local area roadways. This may in turn result in an increase in noise levels and a decrease in public safety.

4.3.1.2 Build Alternatives*Impacts to Neighborhoods*

Several different types of adverse impacts to existing and proposed neighborhoods are anticipated as a result of the proposed action. These impacts may include relocations, proximity effects, noise impacts, visual intrusion,¹²⁴ or increased traffic on local arterials and residential collector streets (see **Table 4.3-1**). It must be noted here that the impacts reported are generalized and will not be uniform for all residences within the neighborhood or residential area. Impacts may be more pronounced or less pronounced depending on the proximity of each residence to a proposed alternative. It must also be noted that impacts to residences which may be adjacent to but not necessarily within the boundaries of a named subdivision are duly noted in the table. In addition, noise levels are expected to rise in all neighborhoods that are adjacent, or in close proximity, to one of the build alternatives, but only those sites where a noise impact has been determined are reported. For more detailed information on what constitutes a noise impact, see **Section 4.6 Noise Impacts**.

**Table 4.3-1 Impacts on Neighborhoods or Other Residential Areas
By the SH 130 Build Alternatives**

Neighborhood or Residential Area	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
Live Oaks at Berry Creek	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T
Crystal Knoll Terrace	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T
east of Crystal Knoll Terrace	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T	R, P, N, V, T
Pecan Branch North	P, N, V	P, N, V	P, N, V	P, N, V	P, N, V	P, N, V	P, N, V	P, N, V
Churchill Farms	P, V, T	P, V, T	P, V, T	P, V, T	P, V, T	P, V, T	P, V, T	P, V, T
Indian Creek	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T	P, N, V, T

¹²⁴Visual intrusion is generally considered to be either the introduction of the highway facility into an area where none existed previously, or the loss of privacy of residents now exposed to motorists traveling on the highway.

**Table 4.3-1 Impacts on Neighborhoods or Other Residential Areas
By the SH 130 Build Alternatives**
- continued -

Neighborhood or Residential Area	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
Dove Springs	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V
Bell Meadows	—	R, P, V	—	—	R, P, V	R, P, V	R, P, V	—
east of Country View Estates	—	R, P, N, V	—	—	R, P, N, V	R, P, N, V	R, P, N, V	—
Saddlebrook Estates	P, N, V	—	P, N, V	P, N, V	—	—	—	P, N, V
Chandler Creek	P, N, T	—	P, N, T	P, N, T	—	—	—	P, N, T
Apache Oaks	P, N, V, T	—	P, N, V, T	P, N, V, T	—	—	—	P, N, V, T
Forest Creek	—	—	—	—	—	—	—	—
Star Ranch		R, P, N, V			R, P, N, V	R, P, N, V	R, P, N, V	
Steed's Crossing	—	P, N, V	—	—	P, N, V	P, N, V	P, N, V	—
west of Steed's Crossing	—	R, P, N, V	—	—	R, P, N, V	R, P, N, V	R, P, N, V	—
Blackhawk	—	P, V	—	—	P, V	P, V	P, V	
South Creek	P, N, V	—	P, N, V	P, N, V	—	—	—	P, N, V
Rolling Ridge	P, N, V	—	P, N, V	P, N, V	—	—	—	P, N, V
Round Rock Ranch	P, N, V	—	P, N, V	P, N, V	—	—	—	P, N, V
High Country	P	—	P	P	—	—	—	P
Morningside Meadows	P	—	P	P	—	—	—	P
Bradford Park	P, N, V	—	P, N, V	P, N, V	—	—	—	P, N, V
Springbrook	P, V	—	P, V	P, V	—	—	—	P, V
Bohl's Place	P	—	P	P	—	—	—	P
Gatlinburg	P	—	P	P	—	—	—	P
Boulder Ridge	R, P, V	—	R, P, V	—	—	R, P, V	R, P, V	—

Table 4.3-1 Impacts on Neighborhoods or Other Residential Areas
By the SH 130 Build Alternatives
- continued -

Neighborhood or Residential Area	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
Branch Creek Estates	P, V	—	P, V	—	—	P, V	P, V	—
Chimney Hills	P, V	—	P, V	—	—	P, V	P, V	—
Colony Park	P, V	—	P, V	—	—	P, V	P, V	—
Colony Meadows	P, N, V	—	P, N, V	—	—	P, N, V	P, N, V	—
Gardens of Decker Lake	P, V	—	P, V	—	—	P, V	P, V	—
The Meadows at Trinity Crossing	P	—	P	—	—	P	P	—
Imperial Valley	P	—	P	—	—	P	P	—
east of Winding Trails	—	R, P, N, V, T	—	R, P, N, V, T	R, P, N, V, T	—	—	R, P, N, V, T
Timber Creek	P, V	P, V	P, V	P, V	P, V	P, V	P, V	P, V
Deer Wood	—	—	—	—	—	—	—	—
Oak Trails	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V	R, P, N, V
Cardwell	R, P, V	R, P, V	R, P, V	R, P, V	R, P, V	R, P, V	R, P, V	R, P, V
Oak Village North	—	P, V	P, V	—	—	—	P, V	P, V
Country Acres	—	P, V	P, V	—	—	—	P, V	P, V
Sunrise Acres	—	—	—	—	—	—	—	—
Deerwood Circle	—	P, N	P, N	—	—	—	P, N	P, N

*Preferred Alternative

Key to Terms: R= relocation(s) anticipated at this location; P= proximity effects; N= noise impact to one or more residences in neighborhood; V= visual intrusion expected to one or more residents of neighborhood; T= increased traffic expected on local streets; — = no impacts anticipated for alternative.

As seen in the above table, each of the eight build alternatives for SH 130 will have some degree of adverse impact on a number of existing neighborhoods or residential areas. In some cases the impacts include the displacement and required relocation of one or more residences in the neighborhood, and in others proximity is the only impact. In most cases, however, proximity results in multiple impacts including increased noise, visual intrusion, and increased traffic on local streets. The alternatives with the highest degree of overall impact to existing neighborhoods are Alternatives 1 and 3. This is due in large part to the fact that these alternatives travel through the urbanized areas of Round Rock, Pflugerville, and East Austin, causing disruption to the residential development in these areas. Alternatives 2 (Preferred Alternative) and 5 travel through mostly rural areas, in large part avoiding dense urbanization, however, they do have a similar but slightly lower degree of impact on rural neighborhoods and other residential areas. Alternatives 4, 6, 7, and 8 have impacts which can generally be characterized as a medium degree of disruption to existing neighborhoods relative to the other alternative's impacts.

There are also several proposed subdivisions in the SH 130 study corridor, many of which are platted in the path of one or more of the build alternatives. If and when these currently vacant tracts become developed, they would experience a similar range of impacts from the proposed actions as existing neighborhoods.

Impacts to Other Residential Areas

There are numerous residences in the SH 130 study corridor which are not associated with a neighborhood or subdivision, or are in rural areas, which stand to be impacted by one or more of the build alternatives. These impacts will include displacements and required relocations, proximity effects, increased noise, visual intrusion, and increased traffic on local streets. Each type of impact to these other residential areas is discussed separately in their respective sections. For instance, displacements are reported in **Section 4.4 Relocation and Displacement Impacts**, and noise impacts are reported in **Section 4.6 Noise Impacts**. Traffic and accessibility concerns are discussed below in **Section 4.3.6**.

4.3.2 Impacts to Community Cohesion

An alternative having an impact on community cohesion can be defined as one which severs or alters social interaction among groups or individual members of a community, divides or displaces a functioning neighborhood, or displaces that which allows for the members of the community to assemble and interact, such as a local church or community recreational facility. All

of the eight build alternatives have been determined to fit this definition, while the No-Action Alternative does not.

Three communities in particular were analyzed for their cohesiveness and the potential for that cohesiveness to be impacted by one or more of the build alternatives. These communities were: 1) the Round Rock Ranch and Rolling Ridge neighborhoods along Gattis School Road, in Round Rock; 2) the Boulder Ridge manufactured home community along Killingsworth Lane in the Pflugerville area; 3) and the Colony Park and Colony Meadows neighborhoods along Loyola Lane in Austin.

The Round Rock Ranch and Rolling Ridge neighborhoods, as well as the Colony Park and Colony Meadows neighborhoods, were subdivided and developed independently of each other. Neither of the subdivisions depend on their counterpart for social interaction or access to a localized community facility; and although one or more of the proposed alternatives are aligned between the neighborhoods, travel from one subdivision to its counterpart will not be restricted. For these reasons, no impacts to community cohesion are anticipated in these neighborhoods.

The Boulder Ridge manufactured home community, similarly, is not expected to experience an adverse impact to its cohesion. Although Alternatives 1, 3, 6, and 7 may require the relocation of several residences in the community, there will be no division of some members of the community from a central community gathering facility or from other members of the community.

4.3.3 Impacts to Social Groups: Environmental Justice Considerations

Signed on February 11, 1994, Presidential Executive Order 12898¹²⁵ requires that each Federal Agency “shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations....” In a memorandum concerning Executive Order 12898, the President states that federal agencies should collect and analyze information concerning a project’s effects on minorities or low-income groups when required by the National Environmental Policy Act of 1969. If such investigations find that minority or low-income groups experience disproportionate, adverse effects, then avoidance or mitigation measures are to be taken. TxDOT guidelines for performing

¹²⁵U.S. Office of the President, 1994.

environmental justice assessments define minority populations to include (1) Blacks, (2) Hispanics, (3) Asian Americans, and (4) American Indians and Alaskan Natives. Low-income persons are defined as those whose median household incomes are below the Department of Health and Human Services poverty guidelines (\$16,450 per year, for a family of four).

4.3.3.1 No-Action Alternative

The No-Action Alternative does not present any issues regarding Executive Order 12898.

4.3.3.2 Build Alternatives

The following sections comprise the elements of the environmental justice analysis:

- (1) proportionality: the geographic distribution of minority and low income populations in proximity to the various build alternatives, with comparison to larger reference areas;
- (2) adversity: for those alternatives affecting populations at issue, a comparison of extent and degree of adversity of potential impacts;
- (3) Title VI criteria: guidance for evaluating compliance with the environmental justice order derived by analogy from federal court decisions under Title VI of the Civil Rights Act;
- (4) toll road considerations;
- (5) cumulative impacts;
- (6) mitigation and compensation options; and
- (7) summary of environmental justice considerations.

In addressing these elements, the analysis will proceed at two levels. First, the aggregate minority and low income composition of the areas affected by the eight build alternatives will be

calculated and compared with the populations of much larger reference areas. Then, to ensure that the end-to-end demographic characterization of the alternatives does not over-generalize the data, a more location specific assessment will focus on potentially affected neighborhoods along the eight alternative routes.

Proportional Distribution of Impacts

To assess the distribution of impacts of the proposed action, estimates of minority and low-income populations in the affected areas surrounding the build alternatives were collected and compared to two larger reference areas. A Geographic Information System (GIS) was employed to perform this analysis. First, 1990 U.S. Census Bureau data were collected and tied to a Block Group graphics file of the State of Texas. Then build alternatives were entered into the system with a 1/4 mile buffer area measured from the right-of-way line of each alternative. This amounts to an affected area approximately 3,200 feet wide (1,320 feet + 1,320 feet + a 550 foot right-of-way width = 3,190 feet. This is considered an appropriate size for analytical purposes in that it is large enough to account for potential adverse effects (e.g., displacements, noise, community cohesion effects) but small enough to avoid diluting the minority and low-income characterization of the affected area. Using the GIS, which assumed a uniform distribution of demographic data over the Block Group, minority and low-income populations were characterized and compared to the larger reference areas' characteristics.

In this study, two larger reference areas were employed to evaluate the proportional distribution of impacts. The first reference area includes the six counties surrounding the SH 130 alternatives.¹²⁶ This relatively large geographic area provides a broad demographic characterization of the Central Texas region. The second reference area includes all the area within five miles of the centerline of all the build alternatives. This encompasses a corridor ranging from 10 miles to about 16 miles in width. This second reference area is considered a more precise basis for assessing potential disproportionality of effects on minority and low income populations in that it is limited to the area within which a route for SH 130 could reasonably have been selected. Potential routes outside this corridor were easily demonstrated to be both impracticable and infeasible for environmental, economic and transportation planning reasons. For example, potential routes to the

¹²⁶For purposes of this environmental justice analysis, a 6-county area was selected, including Williamson, Travis, Hays, Bastrop, Caldwell, and Guadalupe Counties.

west of the corridor would pass through the most densely developed parts of Austin, either east or west of I-35. Routes lying to the east of the reference area would fail to attain the threshold of projected vehicular traffic required to meet the purpose of and need for the proposed action. Therefore, it was concluded that feasible alternatives for SH 130 and associated potential impacts exist primarily within this second reference area.

The results of the GIS analysis of minority and low income conditions within the affected area and reference areas are shown in **Table 4.3-2**. Within the six-county reference area, the percentage of minorities was 32.6 percent and the poverty rate was 16.1 percent. Within the five-mile reference area, the percentage of minorities was 43.2 percent and the poverty rate was 18.0 percent. **Table 4.3-2** also lists the minority and low income characteristics of each of the eight build alternatives. Minority composition of the areas affected by the alternatives ranges from 49.6 percent for Alternative 6 to 32.5 percent for Alternative 4. Low income composition ranges from 20.1 percent for Alternative 7 to 14.7 percent for Alternative 4. Alternative 2 (Preferred Alternative) would affect an area that is 36.7 percent minority and 19.7 percent low income.

**Table 4.3-2 Minority and Low Income Characteristics
of SH 130 Build Alternatives, Reference Areas**

Reference Areas				
Reference Area	Minority (%)		Low Income (%)	
6 County	32.6		16.1	
5 Mile	43.2		18.0	
Areas Affected by Project Alternative				
			Comparison with Reference Areas	
Alternative	Affected Area	%	6 County	5 Mile
1	Minority	45.6	13.0	2.4
	Low Income	16.6	0.5	-1.4
2	Minority	36.7	4.1	-6.5
	Low Income	19.7	3.6	1.7
3	Minority	45.2	12.6	2.0
	Low Income	18.0	1.9	0.0
4	Minority	32.5	-0.1	-10.7
	Low Income	14.7	-1.4	-3.3
5	Minority	35.1	2.5	-8.1
	Low Income	17.7	1.6	-0.3

**Table 4.3-2 Minority and Low Income Characteristics
of SH 130 Build Alternatives, Reference Areas**
- continued -

Reference Areas				
Reference Area	Minority (%)		Low Income (%)	
6	Minority	49.6	17.0	6.4
	Low Income	18.9	2.9	0.9
7	Minority	48.4	15.8	5.2
	Low Income	20.1	4.0	2.1
8	Minority	34.3	1.7	-8.9
	Low Income	16.9	0.8	-1.1

Table 4.3-2 shows that the affected area of Alternative 4 has lower minority and low income compositions than both the 6-county and 5-mile reference areas. All other alternatives exceed the minority or low income compositions of one or both reference areas. Compared with the 6-county means, the exceedance for minorities ranges from 1.7 percent (Alternative 8) to 17.0 percent (Alternative 6); the exceedances for low income ranges from 0.5 percent (Alternative 1) to 4.0 percent (Alternative 7). Compared with the five-mile reference area, four alternatives have lower minority compositions (Alternatives 2, 4, 5, and 8) and four have higher minority compositions (Alternatives 1, 3, 6 and 7). With respect to low income composition, three alternatives are higher than the five-mile reference area (Alternatives 2, 6 and 7) and the other five areas are either equal to or lower (Alternatives 1, 3, 4, 5 and 8).

This demographic information would appear sufficient to at least raise an issue of environmental justice with respect to SH 130, particularly when the minority and low income characteristics of the build alternatives are compared with the 6-county region. When compared with the more relevant 5-mile reference area, the variation in minority and low income characteristics of the build alternatives is much less pronounced.¹²⁷ For example, the area affected by Alternative 3 has a minority population that is just 2.0 percent higher than the 5-mile reference area; Alternative 3's affected area has a low income population that is the same as that of the 5-mile reference area.

¹²⁷The standard for determining the presence of a minority population is not exact. For example, the Interagency Working Group on Environmental Justice created by E.O. 12898 has stated a minority population may be present if the minority population percentage of the affected area is "meaningfully greater" than the minority population percentage in the general population or other "appropriate unit of geographic analysis". Quoted in Council on Environmental Quality, "Guidance for Addressing Environmental Justice Under the National Environmental Policy Act".

The findings presented in **Table 4.3-2** and described above provide an aggregate look at the environmental justice question as it relates to SH 130. Several factors, related both to the requirements of Executive Order 12898 and the nature of the data itself, compel a more focused look at the issue. With respect to the census data, it was noted previously that the GIS analysis necessarily requires an assumption of homogeneity within Block Groups. Given the size and relatively sparse development of many of these Block Groups, this assumption may produce misleading results.¹²⁸ Moreover, the 1990 Census data presented herein may not reflect current conditions in some rapidly growing areas along the SH 130 corridor. Another methodological consideration stems from the linear nature of the analysis. The proposed highway corridor covers roughly 91 miles through a variety of socioeconomic environments; an analysis that merely aggregates the demographic conditions along the length of the corridor may tend to dilute disproportionate conditions within certain segments as well as mask more localized circumstances that could raise legitimate environmental justice concerns. For these reasons, the analysis will focus on subareas, or communities, within the affected corridors wherein potential impacts may appear to be more disproportionate.¹²⁹ This can be most appropriately accomplished in the context of the next basic element of the environmental justice analysis, that of adversity of impacts.

Extent of Adverse Impacts

FHWA's principal guidance on environmental justice¹³⁰ defines "adverse effects" as

...the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include [among others] air, noise, water pollution, soil

¹²⁸The assumption of uniform distribution can be controversial, according to recent literature on the subject (Been, 1997; Zimmerman, 1994). As applied in this discussion, the assumption is more defensible than in other cases discussed in the literature because the method employed herein uses the census block group, as opposed to the more commonly used census tract. The smaller the census geography, the less likely there will be wide variations in demographic characteristics within the geographic area.

¹²⁹EPA's guidance document on incorporating environmental justice into NEPA states that "...the analysis should focus both on the overall affected area and population and on smaller areas and/or communities within the affected area... Environmental justice concerns may lead to more focused analyses, identifying significant effects that may otherwise have been diluted by examination of a larger population or area. EPA, "Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis." April 1998.

¹³⁰FHWA Order 6640.23 "FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations". December 2, 1998.

contamination, diminution of aesthetic values, disruption of community cohesion, disruption of the availability of public and private facilities, adverse employment effects, displacement of persons, businesses, farms or non profit organizations, increased traffic congestion, exclusion or separation of minority or low income individuals within a given community or from the broader community...

Table 4.21-1, presented later in this section, provides a summary of environmental impacts of the eight build alternatives. Many of the types of potential community impacts cited by the FHWA Order are difficult to quantify. Of these, the impacts with the greatest relevance to the environmental justice analysis are displacements and noise impacts, with community cohesion and economic impacts providing more qualitative but equally important criteria. **Table 4.21-1** indicates that the number of residential displacements (excluding the No-Action Alternative) ranges from a low of 155 (Alternative 8) to a high of 175 (Alternative 6), with the Preferred Alternative (Alternative 2) requiring 168 displacements. Commercial displacements range from 16 (Alternatives 3 and 8) to 29 (Alternatives 5 and 6). Noise impacts (number of receivers exceeding FHWA Noise Abatement Criteria) range from 174 (Alternative 5) to 350 (Alternative 1). Based on these aggregate results, none of the alternatives appears to raise the “disproportionately high and adverse” standard.

Looking beyond the aggregate impacts, however, there are 37 subareas, or neighborhoods, that may be potentially affected by one or more of the build alternatives¹³¹ (see **Section 4.3.1**). Of these, 11 occur within census Block Groups in which minority and/or low income populations exceed the mean for the 6-county reference area. These 11 neighborhoods are listed on **Table 4.3-3**. The table also shows which build alternative affects each neighborhood and the type of impacts expected to occur.

¹³¹“Minority” or “low income” populations are defined as “readily identifiable groups of minority [or low income] persons who live in close proximity...” FHWA Order 6640.23.

Table 4.3-3 Impacts to Potential Minority and Low Income Neighborhoods

Neighborhood	Affected by Alternative:	Type of Impacts ¹	Standard Deviations Above 6-County Mean ²					
			Minority			Low Income		
			0-1	1-2	2-3	0-1	1-2	2-3
Live Oaks at Berry Ck.	1 - 8	R P V T				X		
Crystal Knoll Terrace	1 - 8	P N V T				X		
Colony Park	1, 3, 6, 7	P V			X	X		
Colony Meadows	1, 3, 6, 7	P V			X	X		
Gardens of Decker Lake	1, 3, 6, 7	P V		X		X		
Meadows at Trinity Crossing	1, 3, 6, 7	P	X					
Imperial Valley	1, 3, 6, 7	P		X		X		
Winding Trails	2, 4, 5, 8	R P V T		X		X		
Timber Creek	1 - 8	P V					X	
Oak Trails	1 - 8	R P N V		X				
Cardwell	1 - 8	R P N V		X				

¹ R = relocations; N = noise impacts; P = proximity; V = visual; T = increased traffic

²Neighborhood located within block groups with 0-3 standard deviations above mean for 6-county reference area for minority and low income populations. 28 other potentially affected neighborhoods are equal to or below the 6-county mean for both minority and low income populations.

Table 4.3-3 supports several observations regarding SH 130 and consistency with E.O. 12898. It is noteworthy that only 11 of the 37 potentially affected neighborhoods (or 30 percent) lie within census Block Groups which could be characterized as minority and/or low income.¹³² There are two neighborhoods which appear to be predominantly minority in composition: adjacent subdivisions called Colony Park and Colony Meadows, located on either side of Alternatives 1, 3, 6 and 7 west of Lake Walter E. Long. These communities fall within Block Group 2202 B62 which was 94 percent minority and 28 percent low income in the 1990 census. Field observation and

¹³²Note also that the mean values for the six-county reference area are 32.6 percent minority and 16.1 percent low income. The Interagency Working Group on Environmental Justice (I.G.) (created by E.O. 12898) in its guidance on defining "minority populations", provides a numeric measure: over 50 percent of the affected area. Thus use of the six-county reference area figure (32.6 percent) as an indicator of minority population is a conservative benchmark that may tend to overstate the disproportionality of neighborhood minority composition. Moreover, use of the six-county reference area is itself a conservative influence, as the five-mile reference area is arguably a more reasonable and appropriate standard for comparison.

communication with City of Austin planning staff has confirmed that the 1990 demographic characterization of these neighborhoods is probably still correct. The minority and low income concentration in these neighborhoods are thus 50.8 percent and 10 percent higher, respectively, than those of the five-mile reference area, and 61.4 percent and 12 percent higher than the six-county reference area. The two neighborhoods are also located on either side of a dedicated but undeveloped public park. For these reasons, Colony Park and Colony Meadows have become central to an ongoing public and institutional dialogue over the relative merits of the “West Lake” route (Alternatives 1, 3, 6 and 7) vs. the “East Lake” route (Alternatives 2, 4, 5 and 8) and thus are due additional attention.¹³³

West Lake vs. East Lake Alternatives

Assuming that the high concentration of minority population in Block Group 2202 B62 raises the threshold issue of disproportionality of effect, the question of consistency with E.O.12898 turns on the second fundamental element of environmental justice analysis, that of the extent of adverse impacts to these affected areas. That is, are the effects of Alternatives 1, 3, 6 and 7 both disproportionate *and* adverse? And, how do the adverse effects of the West Lake route compare with those of the East Lake route? To accurately compare the West Lake and East Lake options, it is necessary to demarcate the two segments from the point of divergence about 10 miles north of US 290 to the point of convergence about 11 miles south of US 290. The environmental impacts associated with each segment can then be compared. The West Lake alignment was found to have about the same extent of direct and indirect adverse impacts, on the whole, as the East Lake alignment within these demarcated segments.

Relocations. The West Lake alignment would require 12 residential and one commercial relocation. Most of these relocations occur north of US 290, away from the minority and low income populations of concern. The East Lake alignment would require 11 residential relocations, 8 of which would occur near a subdivision called Winding Trails located near Hog Eye Road and FM 973 just east of Lake Walter E. Long. No relocations would occur at Colony Park or Colony Meadows.

¹³³This is in keeping with the Interagency Working Group guidance that environmental justice analysts “should attempt to identify whether high concentration “pockets” of minority populations are evidenced in specific geographic areas.

Noise. Within the area of concentrated minority and/or low income populations, 20 residences (at Colony Meadows) would be impacted by noise with the West Lake alignment. 2-5 residences located near the Winding Trails neighborhood on the East Lake alignment would experience noise impacts.

Ecological Impacts. The West Lake alignment would have the least impact on riparian woodlands (along with transitional wetlands, the most valuable natural community in the SH 130 corridor), with 41.6 acres affected. The East Lake alignment would affect 43.6 acres of riparian woodlands.

Flood Plains. The West Lake alignment would require the shortest linear crossing of 100-year flood plains, at 12,408 feet; the East Lake alignment would require 15,440 feet.

Important Farmlands. The West Lake alignment would affect the least amount of important farmland area, at 593 acres; the East Lake alignment would affect 702 acres.

Other Indirect Effects. Both the West Lake and East Lake alignments would have indirect effects on community cohesion, land use, visual aesthetics, and nearby public facilities. As noted above, the West Lake alignment would pass between two residential subdivisions, Colony Park and Colony Meadows, resulting in some increase in noise experienced by residents in addition to the noise impacts requiring consideration of abatement described above. No residential or other relocations would be required in these subdivisions.

The West Lake alignment will also require a partial taking of two dedicated but undeveloped public parks. The City of Austin has stated that there are no plans to develop Colony Park, located between the Colony Park and Colony Meadows subdivisions, and will not object to the taking provided it is appropriately compensated. Travis County has no plans to develop the other, unnamed park and has also indicated its cooperation in seeking improved access benefits from SH 130, as well as replacement park land. Nevertheless, these takings of public parkland would require Section 4(f) evaluations. The proposed West Lake alignment will represent a visual intrusion upon these neighborhoods where it passes through what is currently an undeveloped utility corridor. The West Lake route also passes within about 1.0 mile of Barbara Jordan Elementary School, but is not expected to have adverse effects on the school. The East Lake route would also directly impact a small residential grouping which is part of or adjacent to the Winding Trail subdivision near Hog Eye Road and FM 973. This alignment would require eight residential

relocations and cause visual and noise effects in or near this neighborhood. No Section 4(f) properties would be affected by the East Lake alignment within the segment in question described above.

As should be apparent from the preceding summary, the West Lake alignment is expected to have about the same extent of adverse impacts as the East Lake alignment. The East Lake alignment, however, does not raise the issue of potentially disproportionate minority effects. Thus the question remains: is the West Lake alignment inconsistent with the mandate of Executive Order 12898? The answer to this question requires consideration of the next elements within the framework of the environmental justice analysis: the question of discriminatory intent and/or effect; cumulative effects; and mitigation/compensation. These are addressed in the following subsections.

Title VI of the Civil Rights Act of 1964

Executive Order 12898 is an administrative directive to federal agencies and does not create any judicially enforceable rights, therefore, environmental justice proponents also look to the judicial system for guidance. Federal court decisions under Title VI of the Civil Rights Act of 1964 have provided several criteria by which compliance with Executive Order 12898 can be assessed.¹³⁴ The following section deals with the application of these Title VI criteria, as well as Executive Order 12898, to the case of SH 130.

Among the most important environmental justice criteria which have evolved out of Title VI litigation are the requirements that 1) defendants justify their actions by showing a legitimate non-discriminatory purpose; and 2) that plaintiffs demonstrate that there is a reasonable alternative to the proposed action which is also non-discriminatory. As demonstrated in the preceding subsection, the West Lake alignment has a level of adverse environmental impacts that is comparable to the East Lake alignment, but will have a more direct effect on minority populations. This is due largely, if not entirely, to the western route's proximity to the Colony Meadows and Colony Park subdivisions. It is, in fact, this alignment which has given rise to the greatest concern from residents and local officials. Because this alignment would be located in close proximity to a higher concentration of minority residents than the other alignments, the Title VI analysis suggests

¹³⁴ Title VI states that "[n]o person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 42 U.S.C.A. Sec. 2000d.

that it must be demonstrated that a legitimate, non-discriminatory purpose in developing Alternatives 1, 3, 6, and 7 has been achieved. The Title VI criteria would similarly require that the question of whether there is a reasonable, non-discriminatory alternative be addressed.

With respect to the first criterion – legitimate non-discriminatory purpose – there are a number of environmental and transportation issues which have led to the Primary Build Alternatives for SH 130. Throughout the entire alternatives analysis, the goal has always been to minimize impacts on local residents, while accomplishing the primary goal of the roadway: relieving congestion on I-35. The choice of route locations west of Lake Walter E. Long was narrowly constrained by environmental and transportation factors. Preliminary alternatives west of the current West Lake alignment were considered and rejected due to substantially greater ecological impacts to the Walnut Creek Greenbelt and adverse socioeconomic effects to several neighborhoods, including more than 40 relocations. Thus, the choice of the alternative alignment west of Lake Walter E. Long (Alternatives 1, 3, 6 and 7) was influenced by the unacceptability of environmental and community impacts to the west and the existence of the lake to the east.

Many citizens and public officials who oppose the West Lake alignment have essentially raised the second criterion established under Title VI litigation: there is, they say, a reasonable, non-discriminatory alternative which lies to the east of Lake Walter E. Long, namely, the East Lake alignment. There are well-supported environmental and transportation planning considerations which challenge the reasonableness, if not the non-discriminatory nature, of the eastern alternative. It has been previously demonstrated that the East Lake alignment creates direct and indirect community impacts (including eight relocations near the rural Winding Trails neighborhood along FM 973 near Hog Eye Road) that are at least as adverse as those of the West Lake alignment. Section 4(f) issues, however, create the strongest reasons for the preference of the eastern over the western alternative. The West Lake route would require partial takings from two public parks, while the East Lake route would not.

Toll Road Considerations

Consideration is also given to whether there is a disproportionate impact on minority and low income persons resulting from operation of SH 130 as a toll road. Generally speaking, because all motorists pay the same toll regardless of their income, the toll for using SH 130 would constitute

a greater burden on lower income motorists. A theoretical price of 8 cents per mile¹³⁵ produces a full-length toll of \$7.28 for the 91 mile SH 130 project. The actual toll to be charged on opening day and beyond has not yet been established and is subject to on-going consideration by the TTA Division.

It should be noted that the toll for any motorist – regardless of income – who chooses to drive SH 130 would constitute only a small portion of the total costs to operate a privately owned vehicle. This is because most motorists already incur a variety of costs including loan payments, depreciation, fuel, maintenance, insurance, parking, annual taxes and state inspection. The combined total of these expenses far outweighs the nominal amount of the toll.

Still, for minimum wage earners, a disproportionately high percentage of their income could be devoted to toll charges should they decide to regularly use SH 130 for routine trips. For this reason, it is more likely that lower-income motorists will choose not to use SH 130, opting instead to continue utilizing toll-free roadways. The network of existing toll-free roads within the corridor, as described in **Section 3.1 Land Use** is available to motorists who wish to avoid paying tolls. The toll-free network may be less congested as a result of SH 130.

Cumulative Impacts

FWHA's guidance on environmental justice¹³⁶ defines "adverse effects" as "the totality of significant individual or *cumulative* human health or environmental effects, including interrelated social and economic effects..." (emphasis added). Under NEPA regulations,¹³⁷ cumulative impacts are defined as "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions..." An EPA environmental justice guidance document¹³⁸ further states that "...minority populations and low income populations are often located in areas or environments that may already suffer from prior degradation". Within the SH 130 corridor,

¹³⁵URS Greiner, May 1 997, Draft SH 130T/MoKan Toll Feasibility Study Traffic and Revenue Forecasts.

¹³⁶FHWA Order 6640.23

¹³⁷Council on Environmental Quality, Regulations Implementing the National Environmental Policy Act, 40 CFR Section 1508.7.

¹³⁸EPA, "Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis", April 1988.

environmental justice concerns have traditionally focused on the portion of Austin east of I-35. Charges of “environmental racism” have been voiced on behalf of East Austin communities since the days when the City government openly included racially discriminatory elements in its land use planning and zoning policies. The City has long since repudiated such policies, but East Austin residents and community activists continue to point out the existence of an imbalance – due perhaps to the phenomenon of “over-zoning”¹³⁹ and the operation of the real estate market – in the siting of industrial and infrastructural facilities, particularly those associated with pollution or nuisance conditions. This tendency, East Austin advocates say, has resulted in a diminution of environmental and human health conditions in East Austin.

This issue is relevant to the SH 130 environmental justice analysis in the context of cumulative impacts. Is the decision to locate SH 130 east of I-35 – and more particularly, to route the alignment nearer to minority communities – part of a pattern of past and ongoing locational practices that is in effect discriminatory?

Although the Austin-centered east vs. west controversy did not begin and will not end with the SH 130 project, several observations may lend perspective to the issue with respect to the current proposed action. First, the transportation planning, economic, and land use considerations that determined that SH 130 should lie east of I-35 are manifest and have been discussed in **Section 1.0 Purpose and Need**. Second, the corridor studied for SH 130 lies outside and to the east of the “East Austin” area of controversy. The boundaries of the East Austin land use and zoning study commissioned by the Austin City Council in 1996 are I-35, Airport Boulevard, and Town Lake. The SH 130 corridor in this area is well to the east of US 183 and traverses a dispersed and only partly developed pattern of land uses.

Of equal and perhaps greater importance is the fact that the proposed SH 130 is of a type of infrastructural development that has been historically – and cumulatively – lacking in the area east of I-35: modern high speed roadways. Complaints about discriminatory siting practices in the past have noted that prior industrial locations have not only tended to pollute and degrade the

¹³⁹City of Austin, Planning & Environmental Conservation Services Department, “East Austin Land Use/Zoning Report”. March 26, 1999. This report was prepared pursuant to a Resolution of the City Council to “...undertake a zoning and land use study of the area bounded by I 35, Airport Boulevard, and Town Lake...” The study found that “over-zoning affects a majority of the East Austin community, but each area has been affected in different ways...” The term “over-zoning” means generally zoning that permits higher intensity uses than may be appropriate given current or desired patterns of land use and development.

environmental and human health conditions in the area, but have failed to provide many offsetting benefits, in the form of high paying, stable employment in proximity to the minority and low income populations in the area. A major factor in the observed absence of large manufacturing and industrial locations in this area has been the absence of a well-developed transportation network. Examination of any current roadway map of the region will confirm a noticeable absence of modern transportation facilities – particularly with a north-south orientation – in the area east of US 183. This absence of infrastructure may be viewed as a cumulative condition which the proposed SH 130 will actually benefit. In light of other current developments in the region – the opening of the new international airport at Austin-Bergstrom and the advent of a major manufacturing corridor north of US 290 in eastern Travis and Williamson Counties, SH 130 presents the prospect of facilitating future locations of manufacturing, light industrial, warehousing, and other commercial installations which could offer high quality employment opportunities much nearer to the minority and/or low income populations of East Austin. While this possibility is speculative at present, and is not advanced as an offsetting benefit for potential adverse impacts, it is a relevant consideration in the context of cumulative effects.

Mitigation and Compensation Options

FHWA Order 6640.23 states that the agency shall identify and avoid disproportionately high and adverse effects on minority and/or low income populations by

..proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities...

While none of the project alternatives taken in their entirety appears to be inconsistent with E.O. 12898, the concentration of minority and low income populations at a single location along Alternatives 1, 3, 6 and 7 – the Colony Park and Colony Meadows subdivisions – has raised the issue to the point that some consideration of mitigation options may be warranted. Traffic effects at Colony Park and Colony Meadows are expected to be minimal since the roadway design does not provide for entrance or exit ramps at Loyola Lane. The roadway at this location will be elevated over Loyola Lane, so no physical barrier between the two neighborhoods will be created. Thus, the

principal effects of the proposed action on these communities are expected to be: noise impacts to 5-10 residences and visual intrusion.

The residents of the affected neighborhoods were afforded several opportunities to become informed about the extent and timing of possible impacts, including two public meetings at nearby Barbara Jordan Elementary school, held on June 26, 1997, and November 5, 1998.

Possible mitigation measures or offsetting benefits that could directly improve conditions at this location include implementation of noise abatement measures, such as noise walls, pending a determination that such measures are economically feasible. Other potential mitigation measures include the construction of sidewalks on Loyola Lane (within the proposed SH 130 right-of-way only), where none exist at present. This would greatly improve the convenience and safety of pedestrians and cyclists traveling from the two neighborhoods to Barbara Jordan Elementary School and several commercial facilities located about one mile to the west. Another possible mitigating measure would be inclusion in the SH 130 design of aesthetic enhancements along this stretch of right-of-way. These enhancements might include upgrades in the design and construction of retaining walls that improve their aesthetic appearance, including selection of wall materials, manipulation of structural design, and the use of native vegetation for the purposes of softening and enriching the wall surfaces. Similar improvements could be incorporated into the design of bridge structures and open areas underneath the elevated sections. These enhancements have been employed elsewhere in and around the City of Austin and have generally met with positive responses by neighboring residents. These and other possible mitigation measures were further considered by TTA and FHWA, with the solicited involvement of neighborhood residents and other interested parties, during and after the public hearings on the DEIS.

Summary of Environmental Justice Considerations

The foregoing analysis supports a conclusion that the proposed action, including all build alternatives, is consistent with E.O. 12898, Environmental Justice, because it does not create any disproportionately high and adverse effects on minority and/or low income populations that cannot be mitigated or otherwise compensated with offsetting benefits. The proposed action is similarly consistent with Title VI of the Civil Rights Act of 1964 in that there is no evident discriminatory intent or effect. While there is a well-documented history of siting undesirable land uses in the more densely developed areas of East Austin west of the SH 130 corridor, the analysis found that there

has also been a cumulative absence of a well-developed roadway network that may have contributed to the economic disadvantage of the area. The proposed action therefore offers the possibility of long term benefits to the area and its residents. Comments relating to environmental justice received from citizens and elected officials (see **Section 8.0 Comments and Coordination**) were primarily concerned with potentially disproportionate and adverse effects on low-income and minority neighborhoods located west of Lake Walter E. Long associated with Alternatives 1, 3, 6 and 7. The East Lake alignment options (Alternatives 2 [Preferred Alternative], 4, 5, and 8) were oftentimes noted as avoiding any environmental justice issues and were favored by many commentors who supported SH 130 for its overall mobility benefits. The proposed action may result in direct visual and noise impacts to area residents. While these impacts may or may not be considered “adverse effects” within the definition of FHWA in Order 6640.23, certain mitigation measures or offsetting benefits may be appropriately considered, including noise abatement measures, aesthetic enhancements in the roadway design and installation of sidewalks within the proposed SH 130 right-of-way only.

4.3.4 Impacts to Various Community or Public Resources

4.3.4.1 No-Action Alternative

The No-Action Alternative could have indirect adverse effects on community and public resources within the SH 130 corridor. Increases in traffic congestion and travel delays could have adverse effects for schools, emergency services, recreational areas and businesses as mobility and access within the corridor worsen. School buses and emergency services vehicles could experience increasing amounts of delay.

4.3.4.2 Build Alternatives

Churches and Cemeteries

Each of the eight build alternatives is expected to impact one or more churches or cemeteries within the SH 130 study corridor. The Heritage Baptist Church along FM 971 may suffer some proximity effects from each of the eight build alternatives as they cross the existing road. These effects may include increased noise levels and possible visual intrusion. This church is also expected to benefit somewhat from the location of SH 130 because of the exposure it would receive due to its visibility from the proposed major transportation facility.

The Georgetown Church of the Nazarene would experience similar impacts due to proximity from each of the eight build alternatives for SH 130. The proposed facility may be a visible intrusion, and could increase traffic on SH 29, but it may also benefit the church by providing it some exposure to users of SH 130. Noise levels at the church site may increase due to its proximity to the proposed facility, but no noise impact is expected.

St. Helen Catholic Church is considered far enough away from the proposed facility not to experience a visual intrusion, and although the possible increase in traffic along SH 29 could be a nuisance, it may also benefit the church by providing increased exposure.

The Palm Valley Lutheran Church and Cemetery (determined eligible for the National Register of Historic Places [NRHP]) will experience a noise impact and likely visual intrusion from Alternatives 1, 3, 4, and 8. Traffic levels may also increase in this area due to the major interchange proposed at US 79. These impacts are considered to adversely affect the historic value of this property. See also **Section 4.13.2 Impacts to Historic Buildings** and the **SH 130 Historic Buildings Report** (under separate cover) for a more detailed discussion of the impacts to these historic resources.

The Fellowship at Forest Creek along Gattis School Road will experience a noise impact and some visual intrusion from Alternatives 1, 3, 4, and 8. There may also be an increase in traffic near the church site, and because motorists will most likely not be able to see the church from the highway in this area, due to the fact that it passes under Gattis School Road, the beneficial effects of proximity will be minimized.

The Mercy of God Prayer Center along Yager Lane will be displaced by Alternatives 1, 3, 6, and 7. See **Section 4.4 Relocation and Displacement Impacts** for a discussion of relocation assistance for displacees.

None of the churches or cemeteries within the SH 130 corridor in Caldwell or Guadalupe counties would be displaced by any proposed alternative. However, most of these facilities could incur increased noise and/or visual impacts from the highway project.

Schools and School Districts

Schools in the SH 130 corridor will not be directly impacted by any of the build alternatives; that is no schools will be displaced as a result of the proposed action. Due to the

proximity of one or more of the alternatives to a number of existing and future school sites, however, some visual and noise impacts could be experienced. For instance, two new schools in the Georgetown area, Cooper Elementary and Katy Middle School, are within about a quarter of a mile of build alternatives 1 through 8. These alternatives will increase noise levels near the school and impose some visual intrusion, but safety for children and other pedestrians will be ensured by maintaining access where it exists now and by the consideration of sidewalks along frontage roads. Similar impacts may be felt in relation to Alternatives 1, 3, 4, and 8 at two new schools (unnamed as yet) along Gattis School Road in the Round Rock area. The middle school would be approximately 2,000 feet from the alternatives and the elementary school would be about 2,500 feet, leading to increased noise levels. In most instances accessibility by school buses and children will be enhanced through the decrease in congestion on local roadways. Overall, no adverse impacts to schools are anticipated as a result of the proposed action.

Impacts to school districts is also expected to be minimal. The removal of taxable property from school district boundaries will most likely be offset by the addition of taxable secondary development spurred by the proposed action.

Emergency Services

Emergency services are generally expected to benefit from the implementation of the proposed action, due to the increase in their access to a high speed transportation facility and the decrease in congestion on local area roadways. Specifically, the Round Rock Fire Station along Gattis School Road would be benefitted by Alternatives 1, 3, 4, and 8, the City of Austin Fire Station along Wentworth Drive by Alternatives 1, 3, 6, and 7, and the Mustang Ridge Police Station by each of the eight build alternatives.

Parks and Recreational Lands and Recreational Facilities

Section 4(f)

There are several publicly owned (existing and proposed) parks and recreational facilities in the corridor which may experience some degree of impact warranting involvement of Section 4(f)

of the Department of Transportation Act of 1966 (Title 49, U.S.C., Section 1653(f) as amended and codified in 49 U.S.C., Section 303 in 1983)¹⁴⁰, which states that...

The Secretary may approve a transportation program or project requiring use of publicly owned land of a public park, recreation area, or wildlife/waterfowl refuge, or land of a historic site of National, State, or local significance (as determined by the officials having jurisdiction over the park, recreation area, refuge, or site) only if 1) there is no prudent alternative to such use, and 2) the project includes all possible planning to minimize harm...

The following parks or recreation areas will not experience direct or indirect impacts that would warrant Section 4(f) involvement: Old Settlers Park at Palm Valley, along US 79; the Travis County Northeast Metropolitan Park along Killingsworth Lane; City of Austin Walnut Creek Park; and Lake Walter E. Long Metropolitan Park just south of US 290. The build alternatives for the proposed action were designed, in part, to avoid traveling through Old Settlers Park at Palm Valley. As a result, none of the build alternatives are in close enough proximity to create an adverse impact to the park. All eight build alternatives pass in close proximity to the Northeast Metropolitan Park (see **Figure 4.3-1**). This park is used mainly for soccer and other sports-related activities which are not considered to be as noise sensitive as some other recreational activities and is therefore not expected to be impacted by increased traffic noise levels. Similarly, the City of Austin park along Walnut Creek (recently purchased with park bond monies approved by Austin voters in November 1998) can be planned so that any park uses that may be impacted by noise or visual impacts can be located away from Alternatives 1, 3, 6, and 7, which pass in close proximity to the northeast corner of the proposed park (see **Figure 4.3-2**). At Lake Walter E. Long Metropolitan Park, improvements are presently located in areas away from the proposed alignment for Alternatives 2 (Preferred Alternative), 4, 5, and 8, so adverse impacts would not occur.

¹⁴⁰Section 4(f) has been part of federal law in some form since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966, and originally set forth in Title 49, U.S.C., Section 1653(f). It applies only to agencies within the U.S. Department of Transportation. Also in 1966, a similar provision was added to Title 23, U.S.C., Section 138. The wording was somewhat different, but in 1968, the Federal-aid Highway Act of 1968 amended the wording in both sections to be consistent.

In January of 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C., Section 303 (Section 4(f) Policy Paper—FHWA, 1987; 1989).

Two parks in the vicinity of Lake Walter E. Long, the City of Austin's Colony Park along Loyola Lane, and Travis County's unnamed park along Blue Bluff Road, will experience a direct taking by Alternatives 1, 3, 6, and 7.

Colony Park. Colony Park is an undeveloped and unmaintained City of Austin park site consisting of 27.9 acres and located on Loyola Lane, halfway between Johnny Morris Road and FM 3177/Decker Lane. The park is not identified by any signs or markers as a park but is delineated as such on the official Austin Parks and Recreation Department facilities map. The northeastern portion of the park is traversed by a line of large utility towers carrying electric high wires that are owned and operated by the City of Austin. The City has no plans to relocate this electric utility line and easement. The long and narrow park parcel is sandwiched between the Colony Park subdivision adjacent to the park's western boundary and the Colony Meadows subdivision adjacent to the park's eastern boundary. The parkland was provided to the city by the subdivision developer who set aside the land along the existing utility easement as parkland.

The park is overgrown and underutilized. The only structures in Colony Park are the utility towers. The narrow shape of the parcel has discouraged the City from developing Colony Park and the City has no plans to improve the park in the near future. City staff has acknowledged that the area in which Colony Park lies – Austin Parks and Recreation Department (PARC) Planning Area 23 – is not deficient in parkland.¹⁴¹ Despite the fact that there is no fence around Colony Park, making it accessible to anyone wanting to use it, Colony Park does not appear to be used by area residents, based on first-hand observations made during numerous site visits by project staff.

Colony Park would be crossed by several of the SH 130 build alternatives, specifically Alternatives 1, 3, 6, and 7 (see **Figure 4.3-3**). These alternatives would directly affect 2.9 acres of the park.

Unnamed Travis County Park. The "Turkey Farm," as it is referred to by Travis County staff, is an unnamed, undeveloped and unmaintained Travis County park site consisting of 123.2 acres. It is located just south of Walter E. Long Metropolitan Park, between FM 973 to the east and Blue Bluff Road to the west. The southern boundary of the park is bordered by private property, which is in turn bordered by FM 969 to the south. There are several residences and a few commercial establishments surrounding the park (see **Figure 4.3-4**). The land was purchased in

¹⁴¹David Marsh, City of Austin Parks and Recreation Department, telephone conversation, 1997.

1986 with county park bond money as approved by Travis County voters in 1984. The bond money used to purchase the land was specifically approved for use in Travis County Commissioners Court Precinct 1 in which the Turkey Farm property lies. The land has not been used as a public park since it was bought and today remains unimproved, fenced, gated and padlocked. The property is not identified by any signs or markers as a park. Only very limited access currently exists for the property, via a 20 foot easement connecting to Blue Bluff Road. The county has indicated that the property does not have much value as a park without the purchase of additional and adjoining property between the southern boundary of the “Turkey Farm” and FM 969. Additional impediments to recreational development of the property include the lack of utilities.

Travis County has no plans to improve the park nor any intention of disposing of the property. The county’s recently-passed, five-year Capital Improvements Plan did not include any funding for this park. Staff of the Travis County Transportation and Natural Resources Department have held preliminary discussions with the Boy Scouts and one or more disadvantaged youth programs about the possibility of using the park as a campsite. However, use of the park by these groups has not occurred. Travis County has acknowledged that the county has little interest in developing the “Turkey Farm” site into a public-use park. Not only does the park lack access, amenities, and utilities, it is a low priority for development. Recent bond elections in which voters approved major financing to complete the Northeast Metropolitan Park and purchase the Southeast Metropolitan Park property near Onion Creek and SH 71 appear to be of higher priority. The “Turkey Farm” park is therefore currently idle and likely to remain so for the foreseeable future.

The “Turkey Farm” park property would be crossed by several of the SH 130 build alternatives, specifically Alternatives 1, 3, 6, and 7. These alternatives would directly affect 9.2 acres of the park property.

Because Alternative 2 is the Preferred Alternative and does not require the taking of property from either Colony Park or the “Turkey Farm”, final 4(f) statements will not be prepared. Alternatives 2, 4, 5, and 8 do not require land from any public park.

Section 6(f)

Section 6(f) of the Land and Water Conservation Act requires that recreational facilities that receive United States Department of the Interior funding under the Act, as allocated by the Texas Parks and Wildlife Department, may not be converted to non-recreational uses unless approval is granted by the director of the National Park Service. No such facilities are impacted by

any of the SH 130 alternatives, therefore no Section 6(f) involvement is required (see **Appendix C** for letter dated December 17, 1999).

Existing and Proposed Trails

Table 3.1-1 in Section 3.1 Land Use presented the Austin Metro Trails and Greenways (which is an advocacy group and not an agency with jurisdiction) list of existing and proposed trails in the SH 130 corridor that may have fallen along one or more of the proposed build alternatives. All but one of the trails in the table are in the conceptual stage, meaning that no designated publicly owned right-of-way has been acquired as of the date of publication of this document. The Bohl's Place and Saxony trail has been completed; however this trail is not impacted by the proposed action. The opportunity exists, then, for any of these proposed trails to be modified in design in order to be incorporated into the right-of-way of the proposed SH 130. For instance, the MoKan Right-of-Way trail, which is designed to run from Georgetown to Austin along the abandoned M-K-T railroad right-of-way, could still be implemented along with Alternatives 1, 3, 4, 6, 7, and 8, which similarly use the M-K-T right-of-way. Alternatives 1, 3, 6, and 7 would cross the Gilleland Creek trail near the Northeast Metropolitan Park, but the design of SH 130 would involve spanning the creek and the trail, thereby avoiding any impacts to this trail.

Public Facilities

Overall impacts to public facilities from the proposed action will be minimal. They include the displacement of a City of Round Rock water storage facility¹⁴² by Alternatives 1, 3, 4, and 8, the displacement of a water tower by Alternatives 1, 4, 5, and 6 and the required relocation of both underground and above ground utilities by each of the proposed build alternatives. There are no hospitals or similar types of public facilities that stand to be adversely affected by any of the proposed build alternatives.

Businesses

Although each of the eight build alternatives will result in the displacement of multiple businesses or commercial properties, these displacements are not expected to have an adverse impact

¹⁴²If the construction of Alternative 1, 3, 4, or 8 requires the removal of the water storage facility as anticipated, it will be moved at the expense of TTA only if SH 130 is constructed as a toll road. If SH 130 is not constructed as a toll road, local entities will be responsible for utility adjustments.

on the nature of the social environment. The properties to be displaced are mainly industrial type businesses (i.e., equipment rental and repair, auto salvage, collision repair, etc.), although one veterinary clinic is also expected to be displaced. Most of the businesses are in rural locations and similar representations of their services are present throughout the study corridor.

4.3.5 Impacts to Traffic and Public Safety

4.3.5.1 No-Action Alternative

As discussed in **Section 1.0 Purpose and Need**, TxDOT's MIS for SH 130 developed performance measures to evaluate the effect of SH 130 on the traffic levels of other major roadways such as I-35, US 183, and Loop 1. The conclusion of the MIS evaluation was that traffic congestion on all three facilities would be worse in the future without SH 130. As stated earlier, when SH 130 was left out of the CAMPO-approved future transportation network, I-35, US 183, and Loop 1 were left with 94 percent of their collective facility miles operating at Level of Service (LOS) E or worse. A total of 56 percent of these miles operated at F3 or more, meaning that peak periods during the day would experience three or more hours of LOS F conditions. Conversely, when SH 130 was included in the future transportation network, the benefits to I-35, US 183, and Loop 1 were definitely noticeable. With SH 130 taking some of the traffic off of the other facilities, their combined facility miles at LOS E or worse fell to just 78 percent. Only 21 percent of these miles were estimated to operate at F3 or more.

The MIS performance evaluation also looked at the cost of congestion under the “with SH 130” and “without SH 130” scenarios. The MIS concluded that with SH 130, the annual congestion cost in the year 2020 on the four freeways (SH 130, I-35, US 183, and Loop 1) would be \$51 million. Without SH 130, the annual congestion cost would be more than \$123 million. The No-Action Alternative, therefore, will result in greater levels of traffic congestion on I-35, US 183, and Loop 1 than the build alternatives.

Regarding public safety, some traffic safety improvements can be expected to occur as a result of making planned transportation improvements within the SH 130 corridor. However, by not constructing SH 130, traffic congestion on I-35 in the Austin–San Antonio corridor will continue to worsen. The accident rate for certain urban sections of I-35, which in the mid-1990s reached a level that was more than double the statewide rate for urban freeways, can also be expected to remain unacceptably high, or possibly worsen, under the No-Action Alternative.

4.3.5.2 Build Alternatives

The proposed action would have an overall beneficial impact on the level of public safety in the study corridor. This improvement in public safety would be attributable to the diversion from local roads of road users who would opt for the greater convenience and faster travel time of the new roadway. Of specific benefit to the local area would be a potential decrease in the volume of large-truck traffic on local roads and arterials and the facilitation of north/south travel. Similarly, any reduction in peak, weekday, weekend, and holiday local and non-local auto traffic on existing area roads would have beneficial public safety implications for the local area. The reduced congestion of local roads would facilitate the reduction in response time for police, fire protection, and medical services.

Traffic safety would also benefit. **Section 1.0 Purpose and Need**, presented data from the Texas Department of Public Safety and the Texas Transportation Institute that suggested decreased congestion could contribute to a decrease in fatal and injury accidents along major roadways such as I-35. Safety for slow-moving vehicles (e.g., bicycles) and pedestrians will also increase on existing roadways as fast-moving traffic would be directed to the new highway.

Within agricultural areas of the SH 130 corridor, public safety could be a concern if farmers find it necessary to use the highway to transport equipment or livestock. While the safety of moving equipment along local roadways may be improved due to diversion of local traffic to the new highway, such movement on major highways could pose a threat to both farmers and passing drivers.

All build alternatives will cross existing railroad lines. At all such crossings, the SH 130 mainlanes will be grade-separated from the rail lines to ensure no interruption of rail service and no conflicts between trains and cars. In locations where SH 130 is designed to have frontage roads, railroad crossings would be at-grade with the frontage roads. At these locations, traffic safety would be achieved through the use of gated safety crossings with appropriate audible and visual warnings and other safety precautions, as required by law.

The approach ends of all FAA-registered public and private airfields in the study corridor are at least 1,400 feet from the nearest SH 130 build alternative. This separation provides the required minimum of 17 feet of vertical clearance between the proposed roadway elevation and the imaginary approach surface for these airfields.

The degree to which congestion and safety benefits are achieved by SH 130 will depend on which SH 130 build alternative is selected. **Table 4.3-5** summarizes a study conducted for TTA¹⁴³ that shows the traffic benefit to I-35 and other major roadways by alternative (including the No-Action Alternative), based on projected year 2025 daily traffic volumes, assuming SH 130 operates as a non-toll facility.

The following paragraphs provide a summary of the data presented in **Table 4.3-5**.

I-35. All SH 130 build alternatives will result in less traffic on I-35 than the No-Action Alternative. Traffic volume per mile on I-35 from Georgetown to San Antonio will average about 12% less with the Preferred Alternative (Alternative 2). The greatest benefit for I-35 will be experienced in the areas from Georgetown to Austin, and from Austin to San Marcos. The least amount of benefit for I-35 will be in the area through Austin and between San Marcos and San Antonio.

US 183. Depending on the alternative and location, US 183 will experience both lower and higher average volumes per mile. Compared to the No-Action Alternative, the Preferred Alternative (Alternative 2) will result in lower average volume per mile on US 183 (about 7% lower overall from Leander to Seguin). The greatest benefit to US 183 will be felt in the area from Austin to Seguin.

Loop 1. Depending on the alternative and location, Loop 1 will experience both lower and higher average volumes per mile. Compared to the No-Action Alternative, the Preferred Alternative (Alternative 2) will result in less average volume per mile on Loop 1 (about 5% lower overall from SH 45N to SH 45S). Benefits to Loop 1 are slightly better in the northern segment (north of Parmer Lane).

¹⁴³ Alliance - Texas Engineering Company, "SH 130 Toll Traffic Forecasts, Austin-San Antonio Super Regional Model," August 2000.

Table 4.3-5 Year 2025 Traffic Effects of SH 130 (Non-Toll Road) Build Alternatives on Other Roadways

Road	Limits	Average Volume per Mile								
		SH 130 Build Alternatives								
		No-Action Alternative	1	2*	3	4	5	6	7	8
SH 45 North	WEST OF US 183 TO IH 35	98,000	110,000	109,000	105,000	109,000	106,000	107,000	106,000	110,000
	IH 35 TO SH 130	34,000	86,000	73,000	83,000	91,000	63,000	62,000	61,000	88,000
	<i>Total Average Volume</i>	84,000	106,000	98,000	102,000	106,000	93,000	93,000	93,000	106,000
Loop 1	SH 45N TO PARMER	159,000	151,000	151,000	155,000	150,000	149,000	149,000	150,000	149,000
	PARMER TO SH 45S	129,000	134,000	123,000	127,000	131,000	127,000	125,000	125,000	131,000
	<i>Total Average Volume</i>	133,000	136,000	127,000	131,000	134,000	131,000	129,000	128,000	134,000
US 183	NORTH OF 2243 TO SH 45N	75,000	76,000	76,000	78,000	77,000	75,000	75,000	77,000	76,000
	SH 45N TO LOOP 1	176,000	170,000	172,000	171,000	169,000	169,000	170,000	169,000	171,000
	LOOP 1 TO 290E	166,000	161,000	157,000	157,000	162,000	161,000	163,000	159,000	162,000
	290E TO SH 71	148,000	129,000	131,000	127,000	133,000	135,000	127,000	124,000	128,000
	SH 71 TO SH 130	58,000	49,000	57,000	54,000	57,000	56,000	57,000	55,000	56,000
	SH 130 TO IH 10	70,000	56,000	48,000	49,000	53,000	50,000	59,000	48,000	49,000
	<i>Total Average Volume</i>	106,000	98,000	98,000	97,000	100,000	99,000	100,000	97,000	98,000
IH 35	SH 130 TO US 183	191,000	169,000	164,000	162,000	169,000	172,000	173,000	170,000	168,000
	US 183 TO SH 45S	193,000	182,000	178,000	175,000	178,000	175,000	176,000	176,000	178,000
	SH 45S TO SAN MARCOS	131,000	112,000	104,000	101,000	102,000	100,000	99,000	103,000	101,000

Table 4.3-5 Year 2025 Traffic Effects of SH 130 (Non-Toll Road) Build Alternatives on Other Roadways
- continued -

Road	Limits	Average Volume per Mile								
		SH 130 Build Alternatives								
		No-Action Alternative	1	2*	3	4	5	6	7	8
IH-35 (cont'd)	SAN MARCOS TO LOOP 1604	139,000	128,000	126,000	126,000	124,000	121,000	117,000	126,000	126,000
	<i>Total Average Volume</i>	163,000	148,000	143,000	142,000	143,000	142,000	141,000	144,000	144,000
US 290E	IH 35 TO EAST OF SH 130	101,000	71,000	103,000	111,000	107,000	103,000	95,000	97,000	102,000
Loyola	US 183 TO EAST OF SH 130	41,000	25,000	44,000	44,000	52,000	43,000	40,000	40,000	55,000
FM 969	IH 35 TO EAST OF SH 130	54,000	43,000	52,000	58,000	61,000	52,000	52,000	51,000	63,000
SH 71	US 183 TO SH 130	134,000	126,000	137,000	131,000	136,000	135,000	129,000	131,000	136,000
	IH 35 TO US 183	127,000	128,000	129,000	131,000	131,000	128,000	129,000	127,000	131,000
	<i>Total Average Volume</i>	130,000	127,000	133,000	131,000	133,000	131,000	129,000	129,000	133,000
SH 45 South	IH 35 TO US 183	31,000	41,000	42,000	42,000	43,000	40,000	41,000	41,000	44,000
RR Arterial A	CR 111 TO GATTIS SCHOOL RD	61,000	29,000	55,000	31,000	29,000	52,000	53,000	53,000	29,000
RR Arterial B	WESTINGHOUSE RD TO SH 45N	59,000	45,000	52,000	46,000	48,000	52,000	53,000	53,000	44,000
Double Creek	VARIES ACCORDING TO ALIGNMENT	58,000	46,000	49,000	42,000	42,000	50,000	49,000	49,000	41,000

* Preferred Alternative

Note: The average volume per mile of a segment is calculated by dividing the total vehicle miles of travel by the total length of the segment. Vehicle miles of travel is calculated by multiplying the volume on the roadway segment times the length of the roadway segment in miles.

Source: Alliance - Texas Engineering Company, "SH 130 Toll Traffic Forecasts, Austin-San Antonio Super Regional Model," August 2000.

East Austin Arterial Streets. Depending on the alternative, Loyola Lane and FM 969 will experience both lower and higher average volumes per mile. Compared to the No- Action Alternative, the Preferred Alternative (Alternative 2) will result in higher volume per mile on Loyola in the area east of US 183, and slightly lower volume per mile on FM 969, east of I-35.

Other Roadways. All SH 130 build alternatives will increase average volumes per mile on SH 45N and SH 45S. The Preferred Alternative (Alternative 2) will increase average volumes per mile on SH 71 and US 290E. All build alternatives will decrease average volumes per mile on Round Rock Arterial A, Arterial B and Double Creek Boulevard.

4.3.6 Impacts to Travel Patterns and Accessibility

4.3.6.1 No-Action Alternative

Travel patterns within the study corridor will remain largely unchanged if SH 130 is not constructed. This will result in a continuation of vehicular travel delays and access constraints that currently characterize the SH 130 corridor. Access to Austin-Bergstrom International Airport would continue to rely heavily on I-35, US 183, the congested segments of SH 71, and the neighborhood streets of East Austin. Without SH 130, the City of San Antonio's plan to redevelop Kelly Air Force Base as a NAFTA logistics and distribution "inland port" would be severely hampered. Access limitations to the Travis County Exposition and Heritage Center (located on FM 3177 in East Austin) and the Dell Diamond baseball stadium would also remain.

Under the No-Action Alternative, the relatively undeveloped transportation network within the SH 130 corridor would continue to pose mobility and access constraints. The adverse effects of impaired mobility in the corridor will continue to be felt mostly by residents, commercial establishments, and other interests within the corridor, in the form of increased commute time and other costs of congestion. The lack of accessibility to key public facilities and centers of economic activity negatively affects interests located for the most part outside the corridor, including residents and commercial transporters trying to get to Austin-Bergstrom International Airport, Travis County Exposition and Heritage Center, Kelly Air Force Base in San Antonio, and several large manufacturing facilities in Travis and Williamson Counties.

Most importantly, the No-Action Alternative fails to address I-35 congestion and safety concerns, resulting in a negative impact on Central Texas communities, and a negative impact on I-35's ability to function efficiently as a national and international trade corridor.

4.3.6.2 Build Alternatives

The SH 130 build alternatives generally offer improvements to travel patterns and accessibility within the corridor. As an alternate route to I-35, especially in the more congested areas, SH 130 may present an attractive option for NAFTA-related commercial truck traffic and other regional travel (trips that begin and end outside the Austin – San Antonio corridor). Access to Austin-Bergstrom International Airport would be improved from the north and south by all of the SH 130 alternatives. Many of the vehicle trips bound for the new airport that currently rely on I-35, US 183, and East Austin neighborhood streets would have a convenient alternative in SH 130, especially those trips that originate in Georgetown, Round Rock, Pflugerville, Lockhart and Seguin. (Access to the corridor’s major employment sites would also be improved with the construction of SH 130. Construction of SH 130 is also consistent with the City of San Antonio’s plan to redevelop Kelly Air Force Base.

Low-income residents within the SH 130 corridor who rely on public transportation or who may be eligible for ride subsidies or “welfare-to-work” programs may also benefit from the build alternatives. Access to jobs located within and outside the SH 130 corridor would be enhanced by all build alternatives.

Year 2025 forecasts of SH 130 non-toll traffic levels (shown in **Table 4.3-6**) show a predictable variation in traffic utilization ranging from 41,000 vehicles per mile in the southern, more rural area to 115,000 vehicles per mile in the urban area near Austin. The Preferred Alternative (Alternative 2) ranges from 34,000 vehicles per mile in the area northeast of Georgetown to 90,000 vehicles per mile north of US 290.

Table 4.3-6 Forecasted Year 2025 Average Volume Per Mile on SH 130 (Non-Toll Road) Build Alternatives

Approximate Location	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
I-35 to CR 102	38,000	34,000	37,000	41,000	29,000	33,000	33,000	40,000
CR 102 to Proposed SH 45N	79,000	66,000	81,000	78,000	55,000	60,000	60,000	79,000
Proposed SH 45N to Pfluger Lane	95,000	77,000	98,000	95,000	64,000	68,000	70,000	95,000
Pfluger Lane to US 290	111,000	90,000	115,000	91,000	71,000	115,000	100,000	90,000
US 290 to North of SH 71	88,000	82,000	91,000	82,000	81,000	83,000	86,000	81,000

Table 4.3-6 Forecasted Year 2025 Average Volume Per Mile on SH 130 (Non-Toll Road) Build Alternatives
- continued -

Approximate Location	SH 130 Build Alternatives							
	1	2*	3	4	5	6	7	8
North of SH 71 to US 183	69,000	68,000	69,000	69,000	66,000	67,000	68,000	69,000
US 183 to Lockhart	67,000	84,000	85,000	81,000	72,000	76,000	84,000	85,000
Lockhart to I-10	41,000	54,000	55,000	58,000	51,000	55,000	54,000	55,000
Total Average Volume Per Mile	66,000	67,000	75,000	71,000	60,000	67,000	68,000	71,000

*Preferred Alternative

Note: The average volume per mile of a segment is calculated by dividing the total vehicle miles of travel by the total length of the segment. Vehicle miles of travel is calculated by multiplying the volume on the roadway segment times the length of the roadway segment in miles.

Source: Alliance - Texas Engineering Company, "SH 130 Toll Traffic Forecasts, Austin-San Antonio Super Regional Model," August 2000.

The highest average volume per mile, based on the SH 130 non-toll traffic forecast for 2025, is achieved by Alternative 3; the lowest average volume per mile occurs under Alternative 5. The Preferred Alternative (Alternative 2) would average 67,000 vehicles per mile from Georgetown to Seguin.

All build alternatives will cross numerous existing roadways. The highway design incorporates some form of connection or interchange on most of these intersections to provide uninterrupted travel on existing roadways. Of the relatively few roadways which are not provided with bridges or interchanges, connections are provided via frontage roads in order to maintain property access. Vehicle access to properties along the frontage roads would be restricted to making right turns only in and out of driveways. For some property owners along existing stretches of FM 685, FM 973 and US 183, access would become more circuitous by having to navigate the system of one-way frontage roads.

Within agricultural areas, the SH 130 build alternatives will cut through numerous fields and pastures, in effect bifurcating farms and in some cases impacting the livelihood of those who own the land. While access across the highway is provided for roadways, in some cases the highway may restrict and/or limit farmers' ability to easily access and in turn farm their property. See **Section 4.2.2 Impacts to Agricultural Operations** for further discussion of this issue.

Bicycle and pedestrian facilities will be enhanced by the SH 130 build alternatives. Bicycles will be accommodated on the paved shoulders of SH 130 frontage roads. Sections of SH 130 with frontage roads in urban areas may also have pedestrian walkways (i.e., sidewalks) within the right-of-way, outside of the frontage road. In other areas where existing or proposed sidewalks would be crossed by the SH 130 right-of-way, provisions for safely connecting the walkway on either side of SH 130 will be considered. Additional pedestrian walkways can be added to the SH 130 right-of-way through partnerships between local sponsors and TTA.

Finally, SH 130 build alternatives will improve access for emergency vehicles responding to calls within the SH 130 corridor. The new roadway will provide access to the area with a more direct and rapid route for emergency vehicles.

4.3.7 Toll Road Considerations

Due to the imposition of the toll, fewer motorists are likely to utilize SH 130 than they would if it were a toll-free road, choosing instead to continue using one of the other area roadways that are toll-free. Under the toll road scenario, average volume per mile on the Preferred Alternative (Alternative 2) in the year 2025 would be 56,000, compared to 67,000 under the non-toll road scenario. The benefit to I-35 and other roadways will be somewhat diminished as a result of the operation of SH 130 as a toll road until such time as the roadway becomes a toll-free facility. For example, under the toll road scenario, for the Preferred Alternative (Alternative 2) average volume per mile on I-35 from Georgetown to San Antonio in the year 2025 would be 146,000, compared to 143,000 under the non-toll road scenario. However, development of SH 130 as a candidate toll facility will potentially enable TTA to construct the roadway in a much shorter time frame, resulting in congestion relief, mobility and access benefits occurring sooner rather than later.

TTA Division policies permit the toll-free use of toll lanes by emergency vehicles in emergency situations. Access by transit vehicles is also allowed although the transit operator will be charged a toll.

4.4 RELOCATION AND DISPLACEMENT IMPACTS

4.4.1 Estimated Number and Description of Relocations or Displacements

4.4.1.1 No-Action Alternative

The No-Action Alternative will not result in the displacement of any existing residence, business, or other type of facility, and therefore no relocations are required with this alternative.

4.4.1.2 Build Alternatives

Each of the eight build alternatives will displace one or more residences, businesses, or other types of facilities, and therefore relocations will be required for the proposed SH 130. **Table 4.4-1** shows the estimated number and description of these displacements for each of the SH 130 alternatives.¹⁴⁴

Table 4.4-1 Estimated Number and Description of Displacements for the SH 130 Build Alternatives

Alternative	Residential	Commercial/ Industrial	Public Facility	School	Church	Cemetery
1	162	23	2	0	1	0
2*	168	22	0	0	0	0
3	161	16	1	0	1	0
4	156	23	2	0	0	0
5	169	29	1	0	0	0
6	175	29	1	0	1	0
7	174	22	0	0	1	0
8	155	16	1	0	0	0

**Preferred Alternative*

¹⁴⁴It should be noted that residential and other development in the SH 130 study corridor is ongoing, and every effort has been made to accurately estimate the total number of displacements for each alternative. However, the number of displacements and required relocations is expected to change before right-of-way acquisition for SH 130 begins.

As evidenced by **Table 4.4-1**, each of the eight build alternatives will result in a large number of residential displacements and required relocations, ranging from 155 to 175. This includes the approximately 68 travel trailers at the Live Oaks at Berry Creek RV Park, which would be displaced by each of the eight build alternatives for SH 130. No multi-family housing units will be displaced. In addition, 16 to 29 commercial/industrial sites may also be displaced by the proposed build alternatives for SH 130. These include mainly industrial type businesses (i.e., equipment rental and repair, auto salvage, collision repair, etc.), although a veterinary clinic is also expected to be displaced. There does not seem to be an appreciable difference among the alternatives regarding these two types of displacements and relocations, however, Alternatives 1, 3, 4, 5, 6, 7, and 8 have additional displacements as well. These alternatives will result in the displacement of two public water storage facilities (one along the M-K-T right-of-way in Round Rock, and the other along US 183 north of Lockhart) and the Mercy of God Prayer Center along Yager Lane (Alternatives 1, 3, 6, and 7 only).

4.4.2 Compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

In order to ensure that decent, safe, and sanitary dwellings will be available to all affected residents, the State's Relocation Assistance Program (RAP) shall be available to all those displaced as a result of the construction of the proposed action. The RAP will be conducted in accordance with Public Law 96-146, which is the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Information regarding the Relocation Assistance Program was made available to potential displacees attending the Public Hearings held February 10, 2000, and at numerous SH 130 public meetings held previously. Relocation resources will be made available to all displacees without discrimination and consistent with the requirements of the Civil Rights Acts of 1964 and 1968, and the Housing and Urban Development Amendment Act of 1974. Special relocation considerations will be made to accommodate residents in need of additional assistance. Last Resort Housing will also be available in the event of a housing shortage or for residents who cannot find comparable housing within their means. Similar provisions in the act will apply to all businesses, farms, and non-profit organizations displaced by the proposed action. See **Section 5.0 Mitigation Recommendations** for a more detailed discussion of the Relocation Assistance Program.

4.4.3 Available Housing and Commercial Property in the Area

A review of county appraisal districts revealed that the average total value (land + improvements) of displaced properties in the SH 130 corridor is Williamson County – \$72,497; Travis County – \$113,854; Caldwell County – \$61,876; and Guadalupe County – \$48,720. According to the U.S. Department of Housing and Urban Development, the fair market rental rate for a three-bedroom residence in 1996 ranged from \$719 to \$905 per month in the San Antonio and Austin/San Marcos MSAs. A survey of several real estate offices and the multiple listing service for the Greater Austin Area revealed an adequate supply of affordable housing available in the northern portion of the study corridor. **Table 4.4-2** lists the number of units available in various zip codes throughout this area (see **Figure 4.4-1**), in a variety of styles and price ranges. These data would seem to suggest that sufficient vacancies exist to accommodate the relocations required by the proposed action. Not all of the study corridor is covered by the zip codes listed however, so **Table 4.4-3** is also included to show the availability of housing and also commercial sites in the rural areas of Lockhart and Seguin. These housing data are for 1999, and they were gathered through telephone surveys as a multiple listing service is not available in those areas. Within recent history there have not been significant housing shortages in Central Texas. Barring dramatic changes in the local and regional economy, housing supply is expected to keep pace with demand. There is similarly no shortage of commercial sites in the more urban areas of Austin, Pflugerville and Round Rock.

**Table 4.4-2 Available Housing For Various Zip Code Areas
in the Northern Portion of the SH 130 Corridor**

	Zip Codes											
Price Range	78626	78634	78664	78660	78754	78653	78753	78724	78725	78719	78610	78617
Homes												
\$10,000 to \$50,000	1	0	0	0	0	1	0	0	0	0	0	0
\$50,000 to \$100,000	14	10	40	11	3	1	30	16	6	2	8	8
\$100,000 to \$150,000	19	17	69	66	6	2	24	0	8	0	16	11
\$150,000 to \$200,000	8	1	16	25	1	3	8	0	0	0	12	1

**Table 4.4-2 Available Housing For Various Zip Code Areas
in the Northern Portion of the SH 130 Corridor**
- continued -

Price Range	Zip Codes											
	78626	78634	78664	78660	78754	78653	78753	78724	78725	78719	78610	78617
Condominiums												
\$10,000 to \$50,000	0	0	0	0	0	0	1	0	0	0	0	0
\$50,000 to \$100,000	0	0	0	0	0	0	6	0	0	0	0	0
\$100,000 to \$150,000	0	0	0	0	0	0	0	0	0	0	0	0
\$150,000 to \$200,000	0	0	0	0	0	0	0	0	0	0	0	0
Townhomes												
\$10,000 to \$300,000	5	0	0	6	1	0	2	0	0	0	0	0
Duplexes												
\$10,000 to \$300,000	0	0	0	0	1	0	0	8	0	1	0	2
Triplexes												
\$10,000 to \$300,000	0	0	0	0	0	0	0	0	0	0	0	0
Fourplexes												
\$10,000 to \$300,000	0	0	0	0	0	0	0	0	0	0	0	0
Total	47	28	125	88	12	7	71	24	14	3	36	22

Source: JB Goodwin Realtors, 1999.

**Table 4.4-3 Available Housing and Commercial Sites in the Rural Areas
of Lockhart and Seguin**

Place	Single-family for Sale	Multi-family for Sale	Rural Land Tracts for Sale	Commercial for Sale
Lockhart Area	88	3	33	9
Seguin Area	148	0	94	36

Source: Lockhart Area Real Estate, 1999; Dietz, L., Century 21, D&D Real Estate, owner, July 13, 1999, Personal communication.

4.4.4 Toll Road Considerations

The designation of SH 130 as a toll road is not expected to result in any additional displacements or relocations.

4.5 ECONOMIC IMPACTS

4.5.1 No-Action Alternative

The No-Action Alternative would not involve the expenditure of approximately \$1.2 billion (the average construction cost estimate for the build alternatives). Consequently, no direct, indirect, nor induced benefits in employment and income would be experienced. Under the No-Action Alternative, the local and regional economies of the area are likely to continue expanding according to trends described in **Section 3.2.2 Economic Conditions**. However, over time, travel delay costs associated with existing and anticipated future congestion would be borne by all roadway users as well as by corridor businesses that would continue to experience diminished access to their businesses. Other negative economic impacts of the No-Action Alternative include possible reductions in workplace productivity due to excessive congestion, as well as higher per mile costs for vehicles idling in traffic.

4.5.2 Build Alternatives

4.5.2.1 Regional Economic Impacts

Increased access and decreased commute time provided by the highway coupled with the enticement of lower land prices and the rural nature of the region could result in workers relocating to the study corridor while maintaining higher paying jobs in cities such as Austin, San Antonio and San Marcos. The populations of all four counties in the study corridor have been growing since 1960 and are expected to continue along this trend. Impacts of the proposed highway may include shifts in population densities. Improved access provided by freeway sections may allow this growth to disperse throughout the region resulting in increased population in the study corridor.

The highway could potentially improve commute times and supply corridors, which in turn would shift the development along the corridor away from larger cities with higher taxes and

land prices. The additional intersections with existing roadways that will be created by SH 130 are generally considered prime targets for business and industry location.

The Preferred Alternative (Alternative 2) is expected to have a positive influence on the continued expansion of the construction and transportation industries within the region. These industries have benefitted from the population and employment growth that has taken place along the SH 130 corridor during the last decade.

The construction of SH 130 would have direct, indirect, and induced effects on local, regional and state employment, output, and income. The economic effects of the proposed action can be estimated by using the Texas State Comptroller Office's input-output model which has multipliers for final demand, employment, and income related to road/highway construction. When multiplied by the total construction cost of the project, the factors produce estimates of the economic impacts of project construction on a statewide basis. The proportion of economic effects retained locally depends on capturing local materials and labor during the construction process.

Direct effects are those arising from the purchases made by the new road/highway construction sector. Direct costs include wages and salaries paid to workers directly engaged in the project's construction as well as capital costs for equipment, materials, and supplies. The total of labor and capital costs is shown as output in **Table 4.5-1**. Induced effects of the proposed action are generated by the consumption of goods and services made possible by the payrolls associated with the construction project. Indirect effects are the sum of all the rounds of purchases by all the interrelated sectors of the state economy (including direct, induced, and all additional effects), beginning with those which supply the suppliers of the new road/highway construction sector. Indirect effects distribute throughout the economy at each round of purchases. The total estimated statewide effects from project construction range from approximately \$4.35 billion to \$4.51 billion.

Table 4.5-1 Estimates of Statewide Economic Effects

Alt.	Construction Cost Estimate	Income			Employment**			Statewide Final Demand
		Direct	Indirect	Total	Direct	Indirect	Total	
1	\$1,208,000,000	\$349,353,600	\$700,519,200	\$1,049,872,800	32,963	31,984	64,947	\$4,455,708,000
2*	\$1,194,000,000	\$345,304,800	\$692,400,600	\$1,037,705,400	32,581	31,614	64,194	\$4,404,069,000
3	\$1,223,000,000	\$353,691,600	\$709,217,700	\$1,062,909,300	33,372	32,381	65,753	\$4,511,035,500
4	\$1,182,000,000	\$341,834,400	\$685,441,800	\$1,027,276,200	32,253	31,296	63,549	\$4,359,807,000

Table 4.5-1 Estimates of Statewide Economic Effects
- continued -

Alt.	Construction Cost Estimate	Income			Employment**			Statewide Final Demand
		Direct	Indirect	Total	Direct	Indirect	Total	
5	\$1,179,000,000	\$340,966,800	\$683,702,100	\$1,024,668,900	32,171	31,216	63,388	\$4,348,741,500
6	\$1,205,000,000	\$348,486,000	\$698,779,500	\$1,047,265,500	32,881	31,905	64,786	\$4,444,642,500
7	\$1,220,000,000	\$352,824,000	\$707,478,000	\$1,060,302,000	33,290	32,302	65,592	\$4,499,970,000
8	\$1,197,000,000	\$346,172,400	\$694,140,300	\$1,040,312,700	32,663	31,693	64,356	\$4,415,134,500

Source: Calculated using Texas Comptroller Office's Texas Employment, Income, and Final Demand Multipliers, 1992.

**Preferred Alternative*

** Person-years of employment (rounded to whole numbers) over total construction period. Person-years of employment do not necessarily denote additional total employment.

4.5.2.2 Impacts to Local Economies

While the proposed action is likely to facilitate and in turn increase local and regional transportation along its route, diversion of traffic flow from traditionally used routes could diminish local business exposure and revenue. However, the SH 130 build alternatives will open up areas having had no prior access or frontage exposure and thus create new opportunities for land development, which would contribute to the economy through creation of jobs and revenue input to local tax bases.

As mentioned in **Section 4.1 Land Use Impacts**, changes in land use would affect the local economy. Where right-of-way is acquired for SH 130, payments would be made to individual landowners based on the appraised land value, resulting in increased income for the year. However TxDOT, a state agency, is not required to pay local property tax on land or improvements. Therefore, local tax revenues could drop slightly, with private land being removed from the tax rolls. While generated revenues may decrease in the short-term, individuals who relocate within the vicinity of their original home or business, and residential and commercial development attracted by the new highway would offset this initial decrease.

The potential impacts on school district revenues are a function of the value of land removed from the tax rolls and the size and wealth of the affected district. Direct impacts occur where land and improvements are removed from the tax rolls. Over the long-term, the increase in property tax revenue brought by growth in residential and commercial land use is likely to offset a

decrease of school or county taxes. In addition, travelers utilizing a new highway typically inject the local economy with retail revenue and sales tax. Such inputs are generally concentrated in travel-related businesses located within view of the roadway.

4.5.2.3 Effects on Property Values

No-Action Alternative

The No-Action Alternative will have no effect on property values in the study corridor.

Build Alternatives

Studies of highway impacts on property values document that highways generally improve the values of most adjoining commercial properties. The exposure provided by the SH 130 build alternatives will potentially increase the commercial appeal and in turn the property value of land located primarily at on/off access points but also along frontage roads. Commercial development is likely to increase at interchanges initially to serve travelers passing through the area. Over time, the number and type of businesses within such commercial zones is likely to expand beyond interchanges.

The effects of highways on residential property values, however, are less clear. There are several negative effects associated with highways (noise, pollution, dust, and decreased privacy) that may decrease adjacent residential property values. Noise is usually the most objectionable effect, although people may perceive other problems such as aesthetics and proximity.¹⁴⁵ The most important positive effect of highways is increased mobility and transportation access for those living nearby.

Research into the effects of noise on property values tends to indicate that residential properties closest to highways experience lower rates of increase or even decline in value when compared with residences located further away.¹⁴⁶ A study by Hall, Breton, and Taylor concluded,

¹⁴⁵Hall, F. L., B. E. Breton, and S. M. Taylor, 1978, "Effects of Highway Noise on Residential Property Values." *Transportation Research Record* 686:38-43.

¹⁴⁶Langley, C. J., Jr. 1976, "Time Series Effects of a Limited-Access Highway on Residential Property Values." *Transportation Research Record* 583:36-44.

through a multiple regression analysis of two residential areas, that it is possible to define a noise level where property values begin decreasing.¹⁴⁷ They determined that in areas where noise was greater than 70 dBA, property values are strongly related to noise levels. When the noise level was below 70 dBA, property values were not related to noise to a statistically significant extent. See **Section 4.6 Noise Impacts** for further discussion of noise analysis for the SH 130 study corridor.

The perceived effect of mere proximity to the roadway may also affect property values, but the nature and extent of such effects is not precisely understood. Such effects may not be based upon objective impacts, but upon beliefs held by prospective home-buyers regarding the disadvantages of close proximity to highways.¹⁴⁸

Despite the potential negative impacts of highways on residential properties, there also exists the possibility of positive impacts. In some circumstances, residential properties have been shown to increase 15 to 17 percent in value due to the advantages of increased accessibility.¹⁴⁹

Within the more rural areas of the SH 130 corridor, the build alternatives could result in decreases to the value of agricultural property. By transecting fields and pastures and reducing a farmer's access, the cost of transporting equipment and livestock between interrupted parcels may outweigh the revenue generated by those parcels. Such fields may be too costly to farm and could thus decrease in agricultural value. See **Section 4.2.2 Impacts to Agricultural Operations** for further discussion of this issue.

Langley, C. J., Jr., 1981, "Highways and Property Values: The Washington Beltway Revisited." *Transportation Research Record* 583:36-44.

U.S. Department of Transportation, Federal Highway Administration, 1976, "Social and Economic Effects of Highways."

Palmquist, R. B., 1982, "Impact of Highway Improvements on Property Values in Washington State." *Transportation Research Record* 887:22-29.

Kamerud, D. B. and C. R. von Buseck, 1985, "The Effects of Traffic Sound and Its Reduction on House Prices." *Transportation Research Record* 1033:16-22.

¹⁴⁷*OpCit.* Hall et al.

¹⁴⁸*OpCit.* Kamerud and von Buseck.

¹⁴⁹*OpCit.* Palmquist.

4.5.3 Toll Road Considerations

In the short term, the initial expenditure of construction funds on an interim (toll) facility – which may be less costly than an ultimate (toll-free) facility – could lessen the initial economic benefits of SH 130 on the economy. However, construction of an ultimate toll-free road would eventually result in those expenditures and related benefits. In addition, some local employment opportunities, primarily relating to toll collection, operations and security, would be generated by SH 130 as a toll facility. The total estimated statewide economic effects from construction of the project as a toll road would be approximately \$4.69 billion. This is nearly \$500 million more than the toll-free estimate.

4.6 NOISE IMPACTS

4.6.1 Summary of Noise Modeling Analysis

This analysis conforms to FHWA Regulation 23 CFR 772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise,” and TxDOT’s 1996 Guidelines for Analysis and Abatement of Highway Traffic Noise.

The FHWA traffic noise modeling software, STAMINA 2.0, was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise.

Existing and predicted traffic noise levels were modeled at 206 Category B and 3 Category C receivers that represent the residences and commercial businesses adjacent to the alternatives that might be impacted by traffic noise and that may potentially benefit from reduced noise levels.

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

4.6.2 Description of Noise Receivers

The FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact will occur (see **Table 4.6-1**).

Table 4.6-1 FHWA Noise Abatement Criteria (NAC)

Activity Category	NAC (dBA)	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in categories A or B above.
D	—	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: TxDO T, 1997, "Recommended Text for Environmental Assessment Noise Analysis."

As stated above, 206 Category B and 3 Category C receivers were modeled for this noise analysis. Brief descriptions of each modeled receiver appear in **Table 1** in **Appendix E** of this FEIS.

4.6.3 Impacts to Noise Receivers

A noise impact is determined to occur when either the absolute or relative criterion, described below, is met:

Absolute criterion: the predicted noise level at a receiver approaches, equals, or exceeds the NAC. “Approach” is defined as one dBA below the NAC. For example, a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dBA or above.

Relative criterion: the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. “Substantially exceeds” is defined as a more than ten dBA increase over existing levels. For example, a noise impact would occur at a Category B residence if the existing level is 54 dBA and the predicted level is 65 dBA (11 dBA increase).

4.6.3.1 No-Action Alternative

The No-Action Alternative will not directly result in noise impacts to noise receivers in the SH 130 study corridor. Without SH 130, traffic and congestion on other area roadways will increase, and this may ultimately have an impact on existing noise levels.

4.6.3.2 Build Alternatives

All eight build alternatives have been determined to result in noise impacts to one or more modeled receivers, which represent a much larger number of actual receivers (i.e., individual residences or businesses), because either the absolute or relative criterion has been met at a particular modeled receiver site. **Table 4.6-2** indicates that the alternatives impacting the most noise receivers are Alternatives 1 and 3 (350 and 337 receivers, respectively), followed by Alternatives 4 and 8 (316 and 319 receivers, respectively). The alternative impacting the fewest receivers is Alternative 5 (174 receivers). **Table 1** in **Appendix E** gives a more detailed evaluation of the impacts to individual receivers.

Table 4.6-2 Noise Impacts By the SH 130 Build Alternatives

Alternative	Number of Modeled Receivers Impacted	Total Number of Represented Receivers Impacted
1	81	350
2*	54	176
3	63	337
4	76	316

Table 4.6-2 Noise Impacts By the SH 130 Build Alternatives
- continued -

Alternative	Number of Modeled Receivers Impacted	Total Number of Represented Receivers Impacted
5	72	174
6	77	200
7	70	207
8	68	319

**Preferred Alternative*

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area. As indicated in **Table 4.6-2**, the proposed action will result in traffic noise impacts to a total number of receivers ranging from 174 to 350, and the following noise abatement measures were considered: traffic management; alteration of horizontal and/or vertical alignments; acquisition of undeveloped property to act as a buffer zone; and the construction of noise walls.

Before any abatement measure can be incorporated into the project, it must be determined to be both feasible and reasonable. In order to be feasible, the measure should reduce noise levels by at least five dBA at impacted receivers; and to be reasonable its cost should not exceed \$25,000 per benefitted receiver.

Traffic management: control devices could be used to reduce the speed of the traffic; however, SH 130 has been designed to meet requirements for particular Levels of Service and travel patterns. The amount of speed reduction necessary to affect the noise levels significantly will degrade the proposed highway's effectiveness in meeting its design criterion. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments: alteration of the horizontal and/or vertical alignment was considered for several locations along the Preferred Alternative (Alternative 2) which are expected to experience noise impacts as a result of the proposed action.

Most of the impacted receivers along the proposed SH 130 corridor are isolated, ranch-style homes with large property separating each location. For these types of homes, a depressed section or a horizontal shift of the alignment would not be cost effective (i.e., able to be constructed

for less than \$25,000 per receiver) and will not be considered reasonable. There are, however, several locations where multiple receivers were impacted and where this type of abatement was considered.

At Bell Meadow subdivision (NR2) along CR 105, 22 homes were determined to be impacted by noise from the proposed action. To avoid impacting these receivers, alteration of the horizontal and/or vertical alignment of the roadway was considered. A depressed section would reduce noise levels for two of these receivers but it would need to be 16 feet deep and 4,250 feet long to achieve this level of reduction. Based on construction and right-of-way cost estimates for the Preferred Alternative, the additional roadway length and right-of-way required for the vertical adjustment would exceed \$25,000 per benefitted receiver and is therefore not considered reasonable. To avoid noise impacts by shifting the alignment to the east¹⁵⁰, the roadway would have to be moved 1,300 feet. This would not include additional displacements to residences or businesses in the area, but the added cost of the horizontal adjustment would make the total more than \$25,000 per benefitted receiver. Therefore, this type of abatement measure is not considered reasonable and feasible for inclusion into the project.

For a small area along Carmel Creek Road (SR60 and SR61), south of Bell Meadow, nine homes were determined to be impacted by noise from the proposed action. To reduce noise levels for these receivers a depressed section would need to be at least six feet deep and 4,616 feet long. Based on construction and right-of-way cost estimates for the Preferred Alternative, the additional roadway length and right-of-way required for the vertical adjustment would exceed \$25,000 per benefitted receiver and is therefore not considered reasonable. To avoid noise impacts by shifting the alignment to the east¹⁵¹, the roadway would have to be moved 2,800 feet. This would not include additional displacements to residences or businesses in the area, but the added cost of the horizontal adjustment would make the total more than \$25,000 per benefitted receiver. Therefore, this type of abatement measure is not considered reasonable and feasible for inclusion into the project.

In the Hills at Forest Creek area, the section is already depressed. Still, highway noise will impact more than 30 residences in this area. Further, movement of the alignment either east or

¹⁵⁰ Moving the roadway to the west would result in multiple displacements in Bell Meadow not caused by the proposed action as it is currently aligned.

¹⁵¹ Moving the roadway to the west would result in multiple displacements not caused by the proposed action as it is currently aligned.

west would result in multiple displacements of residences and/or businesses not caused by the proposed action as it is currently aligned. Therefore, this type of noise abatement is not considered reasonable and feasible for inclusion into the project.

Buffer zone: the acquisition of sufficient undeveloped land adjacent to the highway project is intended more as a measure to preclude future development that could be impacted by highway traffic noise, rather than to provide noise abatement for existing impacted receivers.

Noise walls: this is the most commonly used noise abatement measure. Noise walls were considered for several locations along the Preferred Alternative (Alternative 2) which are expected to experience noise impacts as a result of the proposed action. The following is a discussion about the feasibility and reasonableness of construction of noise walls.

Most of the impacted receivers along the proposed SH 130 corridor are isolated, ranch-style homes, with large property separating each location. For these types of homes, a barrier will not be cost effective (i.e., able to be built for less than \$25,000 per receiver) and will not be considered "reasonable".

Noise barrier costs were initially estimated at \$17 per square foot based on guidance from TxDOT, at a minimum height of six feet. A minimum barrier height of six feet was used as a screening level, since experience on similar projects has shown that a shorter wall would not give insertion losses greater than five dB(A). Essentially, shorter walls are not effective at blocking the "line of sight" for the sources of sound from taller vehicles such as heavy trucks.

The Indian Creek subdivision (R94), located on the south side of SH 29 in Georgetown, is very dense and close to the Preferred Alternative for SH 130. The proposed highway is depressed below grade at this location and that is expected to reduce traffic noise levels such that the Noise Abatement Criteria would not be approached, met or exceeded. The portion of the neighborhood adjacent to the alternative has approximately 28 homes. Had they been impacted, only nine of them would have benefitted from the construction of a noise wall.

As noted above, the Bell Meadow subdivision (NR2) will see a large increase above existing noise levels as a result of the proposed action. A total of 22 homes at this location were modeled to have noise impacts. Based on preliminary calculations, a noise barrier 3,428 feet in length and 16 feet in height will reduce noise levels by at least five dBA for seven of these homes.

However, at this height, the total cost for this barrier would be \$133,000 per benefitted receiver and, therefore, is not considered to be reasonable.

Several homes along Carmel Creek Road (SR60 and SR61), near CR108, will be impacted by the noise from the proposed highway. However, a noise barrier would need to extend nearly a mile to adequately reduce noise levels by five dBA, and the limited number of benefitted receivers would not make it cost effective.

A noise barrier at the Hills of Forest Creek subdivision was determined to be both feasible and reasonable and is, therefore, proposed for incorporation into the project. Based on preliminary calculations, a noise barrier 2,477 feet in length and 14 feet in height will reduce noise levels by at least five dBA for 30 benefitted receivers (located at Receiver No. "HILLS") at a total cost of \$589,526 or \$19,650 for each benefitted receiver. The cost estimate is based on construction costs of \$17 per square foot. Any subsequent project design changes may require a re-evaluation of this proposal. The final decision to construct the proposed noise barrier will be made upon completion of the project design and public involvement process.

At the Steed's Crossing subdivision in Round Rock (SR51), SH 130 is currently designed to be below grade and no impacts were recorded for the main subdivision. Only those houses near the ends of the depressed highway that are off FM 685 (including those off of Panther Loop) will see at-grade noise impacts. However, the limited number of homes will not make a barrier cost effective.

Several subdivisions and mobile home parks near the Austin-Bergstrom International Airport will be near the Preferred Alternative, but most are far enough from the right-of-way that no noise impacts were recorded. These non-impacted homes include those in the Timber Creek, Stoney Ridge, and Rolling Fields subdivisions. The Linda Vista mobile home park, just south of ABIA, currently exceeds the absolute noise impact criterion of 67 dBA due to its proximity to the airport flight path. A noise barrier will not be able to reduce noise levels such that a benefit will be experienced at this particular location.

A copy of this traffic noise analysis will be provided to local officials to ensure, to the maximum extent possible, future developments are planned, designed and programmed in a manner that will avoid traffic noise impacts. Upon the date of the Record of Decision (ROD) for this FEIS, FHWA and TTA are no longer responsible for providing noise abatement for new development adjacent to the proposed action.

4.6.4 Toll Road Considerations

Local noise impacts for SH 130 as a toll road are different than with free flow traffic. The number of receivers impacted by the Preferred Alternative under a toll road scenario is 169. As **Table 4.6-2** showed, under a non-toll scenario the Preferred Alternative impacts 176 receivers. **Table 2 in Appendix E** gives a more detailed evaluation of the impacts to individual receivers by each of the build alternatives under a toll road scenario.

The mitigation analysis for the Preferred Alternative under a toll road scenario does not differ appreciably from the non-toll mitigation analysis. The locations studied for the possible inclusion of noise barriers were identical, as were the conclusions. It was determined through this analysis that the only reasonable and feasible abatement measure was a noise barrier for the Hills at Forest Creek subdivision adjacent to FM 685. Therefore, if constructed as a toll-road, a noise barrier at this location is proposed for incorporation into the project.

4.7 AIR QUALITY IMPACTS

4.7.1 No-Action Alternative

The No-Action Alternative will not relieve the traffic congestion on I-35 or other area roadways. In fact, it will lead to increased congestion and decreased mobility. This could result in an overall increase in vehicle pollutant emissions within the study corridor.

4.7.2 Build Alternatives

4.7.2.1 Mesoscale Concerns

Ozone (O₃), Hydrocarbons (HCs), and Nitrogen Oxide (NO_x) air quality concerns are regional in nature, and as such meaningful evaluation on a project by project basis is not possible. The EPA considers Region 11 and 13, which encompass the SH 130 study corridor, to be in attainment with respect to the National Ambient Air Quality Standards (NAAQS). In addition, the SH 130 corridor is in an area where the *State Implementation Plan* (SIP) does not contain any transportation control measures. Therefore, the transportation conformity rules do not apply to the proposed action.

4.7.2.2 Microscale Concerns

Although particulate matter (PM) is not quantifiable using available TxDOT emission factors, localized increases can be expected from the construction phase and from an increase in traffic. Coarse particulate matter (PM₁₀) is generally associated with windblown dust from sources such as deserts, agricultural fields, and unpaved roads; thus temporary increases can be expected when construction is occurring nearby. Fine particulate matter (PM_{2.5}) is generally emitted from industrial and residential combustion, as well as from vehicle exhaust, in particular, diesel vehicles. Locations previously without heavy traffic will most likely see some kind of increase in PM_{2.5} concentrations within the immediate area of SH 130. However, recent rule-making by the EPA has targeted heavy-duty truck and bus engines and fuels, and are intended to reduce diesel particulate matter exhaust by 90 percent in all new heavy-duty vehicles sold after 2007.

The Carbon Monoxide (CO) levels expected from the proposed action were estimated for each of the eight build alternatives for the design year 2025. Calculations were performed with the CALINE 3 roadway air quality computer model under worst case meteorological conditions for those areas along the alternatives forecasted to have the heaviest traffic volumes. The results of the modeling indicate that the worst case one-hour CO level for any alternative is not expected to exceed 14.0 parts per million (ppm), but the worst case eight-hour CO level is expected to exceed 7.5 ppm (see **Table 4.7-1**). These calculations include the addition of TxDOT's recommended background CO levels of 0.7 and 0.4 ppm for the one-hour and eight-hour averages, respectively.

Table 4.7-1 Worst-Case Carbon Monoxide Levels Expected For SH 130

SH 130 Design Year	One-Hour Standard			Eight-Hour Standard		
	NAAQS (ppm)	Expected Level (ppm)	Percentage of NAAQS	NAAQS (ppm)	Expected Level (ppm)	Percentage of NAAQS
2025	35	13.5	39%	9	8.4	93%

The highest peak hourly traffic volumes for the proposed SH 130 are predicted to occur along Alternatives 1, 3, 6, and 7 just north of US 290 in Travis County. Here, as indicated in **Table 4.7-1**, the expected one-hour CO concentration is 13.5 ppm, which is 39 percent of the NAAQS. Any value which is less than 50 percent of the NAAQS is deemed by TxDOT to be an insubstantial increase not amounting to an adverse impact. Having said that however, even the expected eight-hour CO concentration of 8.4 ppm, which is 93 percent of the NAAQS, does not amount to an adverse impact because this value represents the absolute peak for the entire length of the project

under worst-case meteorological conditions and was only reached when the wind direction paralleled the alternatives, allowing the CO to accumulate along the right-of-way. Beyond the right-of-way, this concentration would be diminished, and under average conditions impacts to sensitive receptors are not anticipated.

4.7.3 Toll Road Considerations

The designation of SH 130 as a toll road and the use of toll collection booths could result in increased mobile source emissions of CO as well as NO_x and volatile organic compounds (VOCs); the latter two are precursors to the formation of ground level ozone. Emission factors for these compounds as generated by the EPA's MOBILE 5a Mobile Source Emissions Model indicates that as motor vehicle speeds decrease, as they would to pay a toll for instance, their emissions of CO and VOCs will increase. In addition, levels of NO_x increase as motor vehicles accelerate.

The Carbon Monoxide (CO) levels expected from the proposed action were estimated for the Preferred Alternative under a toll-road scenario for the design year 2025. Calculations were performed with the CALINE 3 roadway air quality computer model under worst case meteorological conditions for those areas along the Preferred Alternative forecasted to have the heaviest traffic volumes. The results of the modeling indicate that the worst case one-hour CO level is not expected to exceed 14.0 parts per million (ppm), and the worst case eight-hour CO level is not expected to exceed 7.5 ppm (see **Table 4.7-2**). These calculations include the addition of TxDOT's recommended background CO levels of 0.7 and 0.4 ppm for the one-hour and eight-hour averages, respectively.

Table 4.7-2 Worst-Case Carbon Monoxide Levels Expected for the Preferred Alternative Toll-Road Scenario

SH 130 Design Year	One-Hour Standard			Eight-Hour Standard		
	NAAQS (ppm)	Expected Level (ppm)	Percentage of NAAQS	NAAQS (ppm)	Expected Level (ppm)	Percentage of NAAQS
2025	35	13.2	38%	9	6.9	77%

The highest peak hourly traffic volumes for the Preferred Alternative for SH 130 are predicted to occur just north of US 290 in Travis County. Here, as indicated in **Table 4.7-2**, the expected one-hour CO concentration is 13.2 ppm, which is 38 percent of the NAAQS. Any value which is less than 50 percent of the NAAQS is deemed by TxDOT to be an insubstantial increase

not amounting to an adverse impact. Having said that however, even the expected eight-hour CO concentration of 6.9 ppm, which is 77 percent of the NAAQS, does not amount to an adverse impact because this value represents the absolute peak for the entire length of the project under worst-case meteorological conditions and was only reached when the wind direction paralleled the alternatives, allowing the CO to accumulate along the right-of-way. Beyond the right-of-way, this concentration would be diminished, and under average conditions impacts to sensitive receptors are not anticipated.

With respect to CO, the use of toll booths could result in the formation of localized pockets of increased CO levels at roadway rights-of-way in these locations. A review of the proposed locations of ramp and barrier toll plazas shows that several residences are in close proximity in various locations. For example, a barrier plaza is proposed along Alternatives 2, 5, 6, and 7 in the vicinity of several residences along Carmel Creek Road near County Road 108. The CO levels in this localized area could potentially be elevated. Referred to as “hot-spots”, these elevated CO concentrations are not expected to exceed the one-hour and eight-hour standards (NAAQS) because there are no significant natural or man-made barriers that would tend to impede the atmosphere’s ability to disperse concentrated build-ups of pollutants.

4.8 WATER QUALITY IMPACTS

4.8.1 No-Action Alternative

The No-Action Alternative will not have a direct impact to water quality in the SH 130 corridor. Increased congestion on local area roadways and the resulting stop and go traffic may add to the build up of pollutants on road surfaces and rights-of-way in the study corridor, and this has the potential to have long-term adverse impacts on the quality of surface and ground water. In addition, decreased traffic safety due to congestion may increase the potential for an accidental spill of toxic or otherwise hazardous materials along existing area roadways, such as I-35 or I-10.

4.8.2 Build Alternatives

4.8.2.1 Surface Water Impacts

Each of the eight build alternatives for the proposed action will require the crossing of several rivers, creeks, and streams in the SH 130 corridor (see **Table 4.9-1** in **Section 4.9 Wetland**

Impacts), resulting in a more or less equivalent level of impact to surface waters. The table does show a difference in the number of drainage features crossed by the eight build alternatives, ranging from 65 to 77. This difference, however, is not considered substantial enough to differentiate the alternatives with respect to surface water impacts.

Water pollution due to erosion and sedimentation during construction could potentially have short-term, adverse effects on receiving waters, especially in areas where overland flow is not possible or is generally less than 200 feet from the paved surface to the water feature.¹⁵² In addition, storm water runoff from the completed facility could also contain pollutants which could have long-term effects on the quality of surface water.

The major short-term water quality issues associated with highway construction activities are the processes of erosion and sedimentation. Erosion and sedimentation are accelerated when vegetation is cleared in preparation for the construction of the roadway. These cleared areas and any other exposed ground are susceptible to erosion. Eroded sediment may then be redeposited downstream, resulting in the disruption of the aquatic ecosystem and water quality degradation. Due to these potentially adverse effects, the minimization of the erosion and sedimentation processes during highway construction will be included in the design of the highway and implemented throughout construction. See **Section 5.0 Mitigation Recommendations** for a more thorough description of measures to minimize erosion and sedimentation impacts on area surface waters.

Over the long-term, the main impacts to surface waters will be the continuing runoff of debris and pollutants that accumulate on the road surface and along the right-of-way, or possibly an isolated spill event. The rupture of a tank truck carrying toxic or other hazardous materials could have an adverse impact on the quality of surface water, especially if such an accident were to occur at a bridge crossing.

The proposed action is not anticipated to contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution systems; however, rainfall runoff rates will increase slightly due to the increase in impervious cover. This increased runoff could have

¹⁵²A March 1996 study for the Center for Transportation Research at the University of Texas at Austin reported that “[a] grassy swale was found to be effective for reducing runoff volumes and pollutant concentrations.”

adverse impacts over the long-term if the possibility of overland flow is not available¹⁵³ and proper control measures are not implemented. For instance, pollutants from automobiles and trucks, including oil, gasoline, antifreeze, tire wear, etc., tend to accumulate on the road surfaces and along the rights-of-way, and these may be transported to creeks and rivers as storm water runoff. To minimize the possibility of contamination of surface water due to pollutant runoff, proper control measures will be implemented during and after construction of the proposed action.

TTA will comply with the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) general permit for storm water discharges from construction sites. In accordance with the EPA regulations, a Notice of Intent will be filed and a Storm Water Pollution Prevention Plan (SW3P) will be implemented for the construction site.

Any potential adverse impacts owing to stormwater runoff will be mitigated through the use of temporary erosion and sedimentation controls. These controls will be implemented before, during and after construction. On-site inspections and regular maintenance of controls will also be performed. Various permanent water pollution control measures are also available to mitigate the effects of storm water pollution. Examples of these measures include detention ponds, wet ponds, sand filters, and grassed swales. The primary mechanisms making these measures effective in removing pollutants from storm water are detention and filtration. The selection, design, and effectiveness of these measures are highly site dependent. Temporary and permanent water pollution control measures to be taken during and after development are further discussed in **Section 5.5**.

4.8.2.2 Ground Water Impacts

The major ground water quality issue for the proposed action is that all of the build alternatives cross Berry Creek and the San Gabriel River within the Edwards Aquifer Recharge Zone, as delineated by the TNRCC (see **Section 3.6, Figure 3.6-1**). Temporary and permanent water pollution control measures to be taken during and after construction will be in compliance with guidelines set forth by the TNRCC for actions located within the recharge zone. Additional

¹⁵³Barrett, et al., March 1996, Center for Transportation Research, Bureau of Engineering Research, The University of Texas at Austin, "Water Quality and Quantity Impacts of Highway Construction and Operation." Research Report 1943-7F.

information on compliance with the Edwards Aquifer rules is found in **Section 4.8.2.3 Impacts to the Edwards Aquifer**.

During the short term, the main impacts to ground water are associated with erosion during construction. During this time, the exposed earth and stockpiled materials may be eroded and transported into nearby surface water features which may have the potential to recharge underground water supplies. Within the Edwards Aquifer Recharge Zone for instance, some of this turbid water could enter the Edwards Aquifer, and thus have an effect on its water quality. Temporary controls will be used to minimize the potential for such adverse impacts during construction.

Over the long term, the main impact to ground water will be the continuing runoff of debris and pollutants that accumulate on the road surface and along the right-of-way, or possibly an isolated spill event. The rupture of a tank truck carrying toxic or other hazardous materials could have an adverse impact on the quality of ground water, especially if such an accident were to occur at a bridge crossing of the San Gabriel River for instance. In certain instances on other central Texas projects, hazardous material traps (HMTs) have been constructed to prevent such spills from entering local drainages. The use of HMTs will be considered for SH 130, in consultation with the TNRCC.

4.8.2.3 Impacts to the Edwards Aquifer

In accordance with the Edwards Aquifer Rules, no construction activities will occur within the Edwards Aquifer Recharge Zone until a Water Pollution Abatement Plan (WPAP) has been completed and approved by TNRCC under 30 TAC § 213.5, Required Edwards Aquifer Protection Plans, Notification, and Exemptions. The Edwards Aquifer Rules also require a geologic assessment to be performed as part of the WPAP for portions of the project located over the recharge zone. This geologic assessment will identify recharge features (such as karst features, springs, and sinkholes) and recommend protection strategies. The SH 130 alternatives do not cross any areas designated as Edwards Aquifer Contributing Zones.

A preliminary assessment of the proposed action's crossing of the Edwards Aquifer Recharge Zone did not uncover any major recharge features, such as outcrops of the Edwards Limestone, karst features, or sinkholes in the vicinity that would allow for direct recharge of the aquifer. In addition, the geology in this area consists mainly of thick, laminated clays that are not

easily permeated by rainfall or runoff. For these reasons, the potential for adverse impacts to the quality of the water in the Edwards Aquifer has already been minimized by the natural features of the environment. However, each of the SH 130 build alternatives crosses Berry Creek along the existing alignment of I-35. This crossing is upstream of Berry Creek Springs, a sensitive Edwards Aquifer discharge feature. Runoff may enter the creek at this crossing and could potentially contribute directly to the recharge of the Aquifer. Also, an area in the vicinity of each of the build alternative's crossing of the San Gabriel River has been identified by the TNRCC as an Edwards Aquifer Transition Zone. This zone is described as the southern cut face of the San Gabriel River, which is capped by Buda Limestone and underlain by Del Rio Clay. Relief here is nearly 100 feet and slopes are generally about 12 percent and locally unstable. Runoff from the build alternatives will enter the river at this location and, during drought conditions, could potentially contribute directly to the recharge of the Edwards Aquifer.¹⁵⁴ See **Section 5.0 Mitigation Recommendations** for a more thorough description of measures to control contaminated runoff from entering surface streams and eventually ground water reservoirs.

Areas of SH 130 located within the Edwards Aquifer Recharge Zone will require permanent water pollution control measures to be incorporated such as sand filtration ponds and sedimentation basins. Once the Preferred Alternative is approved, the type and location of appropriate permanent water pollution control measures will be determined during final design of the proposed project. The controls will be engineered to site specific conditions and will meet the standards set out in the Edwards Aquifer Rules, which require approval from the TNRCC, as discussed above. Typical pollution prevention measures utilized on other roadways located in the Recharge Zone include such measures as the construction of hazardous materials traps (HMTs), detention ponds, grassy roadside swales and roadside ditch drainage systems. Because the northern portion of SH 130 would fall within the Recharge Zone, sand filtration and sedimentation basins may be constructed if required by TNRCC, to reduce the potential for roadway runoff to affect the Aquifer. These permanent water quality devices, to be provided in accordance with the TNRCC Edwards Aquifer Rules, have been used in the Central Texas area to effectively remove suspended solids and other pollutants from roadway runoff in developed areas. The basic design of these structures is to capture and isolate the first flush of storm water runoff and release the flow through

¹⁵⁴Woodruff, C.M. Jr., Consulting Geologist, project development and mapping. The San Gabriel River is most often in a state of discharge from the Edwards Aquifer, and as such is not subject to direct recharge by runoff from the roadway. However, during drought conditions, the river could conceivably run dry and open seeps or discharge features would become recharge features.

a porous soil media over a prolonged period¹⁵⁵ except in the case of HMTs, which are designed to prevent catastrophic spill events from infiltrating. Most of SH 130 would not occur within the Recharge Zone, and therefore would not require these types of permanent control features. No substantial adverse impact to water quality is anticipated during operation of the proposed roadway.

4.8.2.4 Impacts to Alluvial and Other Aquifers

Alluvial aquifers are prevalent throughout the study corridor, associated mainly with the large Colorado River alluvial terrace complex but also with other major drainages, and these too are susceptible to contamination from storm water runoff from the proposed roadway. These shallow water sources exist in geologic formations and soils that are highly permeable and are therefore rapidly recharged during a storm event. However, the granular nature of the soils and the overall extent of alluvium minimizes adverse impacts through aeration, bacterial digestion, and the absorption of inorganic ions by clay minerals.

The Wilcox Aquifer, which supplies plenty of fresh ground water to residents in the southern portion of the study corridor, is not expected to incur any impacts as a result of the proposed action.

4.8.2.5 Impacts to Public Drinking Water Systems

Each of the eight build alternatives will directly impact the public drinking water supply well at the Live Oaks at Berry Creek RV park which is located within the proposed right-of-way. This well is identified in the Texas Water Development Board (TWDB) located well file as state well number 58-19-628. It is completed to a depth of about 200 feet and serves a population of about 125 households (taps). This well draws water from the Edwards Aquifer and has a total dissolved solid (TDS) count of about 338 mg/L. As a result of the proposed project this well will no longer serve as a public drinking water supply, and the 125 households served by the well will need to find a new source of drinking water. The well casing will be cut below grade, capped, and covered by fill in accordance with federal and state standards for well-head protection; therefore, contamination of the Edwards Aquifer is not expected through this well. There are an additional three public wells south of US 71 and east of the Austin-Bergstrom International Airport that are within the proposed right-of-way for each of the eight build alternatives and will be displaced by

¹⁵⁵Smith, H.B., P.E. 1994. *Edwards Aquifer Technical Guidance Document, January 1, Technical Guidance Manual for Implementation of 30 Texas Administrative Code (TAC) Chapter 313-Entitled Edwards Aquifer.*

the proposed action. These wells are identified as numbers 58-56-616, 58-56-613, and 58-56-614. They are all shallow dug wells in Quaternary Alluvium. No other data is available to describe these wells. They will be capped according to the same standards mentioned above. Compensation for the loss of these wells – and any others required for the construction of the proposed action – would be addressed during right-of-way acquisition.

In addition to the wells already determined to be impacted, there are other public supply wells potentially affected by one or more of the proposed build alternatives for SH 130. Impacts to these water systems will be avoided by using the TNRCC's recommended measures for diverting runoff away from the well-heads.

As reported in **Section 3.6.2 Ground Water Characteristics**, over 130 wells were identified through state well inventory reports and area property owners as being in an area potentially affected by one or more of the alternatives for the proposed action. These include wells used for private drinking water, industrial and irrigation uses, and test holes for oil or gas exploration. These wells, if ultimately found to be within the right-of-way of the selected alternative, will be capped and covered according to state and federal standards to avoid contamination of ground water supplies. Any private wells displaced as a result of the proposed action may be eligible for compensation through the right-of-way acquisition process.

As stated in correspondence received from the Honorable Judge H.T. Wright, information provided by Boggy Creek residents in Caldwell County indicates several shallow, hand-dug private wells, some of which appear to be in close proximity to natural springs, in the vicinity of Alternatives 2, 3, 7, and 8 (see **Appendix C**). One or more of these wells may be within the right-of-way for these alternatives and would therefore require capping according to State standards. Adverse impacts to the springs in this area are not anticipated as the proposed alternatives would be constructed downstream from the springs.

4.8.3 Toll Road Considerations

The operation of SH 130 as a toll-road would not result in any additional impact to water quality in the study corridor or downstream. The potential exists for automobile pollutants (e.g., oil, gasoline, engine fluids, tire wear, etc.) to accumulate at toll plaza locations, but measures to control stormwater runoff from these locations will be implemented to minimize this potential.

4.9 WETLAND IMPACTS

Executive Order 11990 (Protection of Wetlands, 1977) mandates that a project should avoid wetlands or, if no practicable alternative exists that avoids wetlands, impacts to wetland areas should be minimized as much as possible. All of the build alternatives for the proposed SH 130 will impact wetland areas. It would be impossible to construct a roadway running north-south through the study corridor without crossing riparian corridors and wetlands associated with the southeast flowing drainage systems. An overview of the various types of wetlands and other jurisdictional waters (e.g., rivers, creeks, and streams) within the study corridor is presented in **Section 3.7.4 Wetlands and Other Waters of the U.S.**

Along the entire corridor, the hydrology that sustains the saturated conditions within depressional wetland areas is likely a result of rain events and surface runoff. Wetlands located along streams likely receive overland flow, occasional overbanking, and groundwater influence to maintain their saturated conditions. In spite of the differences in the hydrologic influences among the wetlands, all of these areas likely perform similar functions, including some degree of flood storage and abatement. Depressional wetland areas may contribute to groundwater recharge. Due to the position of the wetlands in proximity to agricultural activities and roadways, the wetland areas within the corridor may also provide some level of sediment and toxicant removal. Although wildlife and plant diversity may be somewhat limited within these wetland areas, it is typically greater than that found in the adjacent lands in the area (e.g., cropland and pastureland). Among the more obvious functions of the open water areas (ponds, rivers, and large streams) are recreational uses, including fishing and boating.

Wetlands in the study corridor have not been field delineated at this stage due to the inability to gain access to private property. Alternative methods for assessing project-related wetland impacts were employed, and are described below. A full wetlands delineation will be performed once right of entry has been secured.

The proposed SH 130 will cross creeks and streams using bridges or concrete box culverts. Although the use of bridges will likely minimize impacts to wetlands and aquatic areas, bridge construction often requires placement of fill material such as dirt, concrete, bridge pillars, etc. within jurisdictional boundaries. Construction of the roadway and bridges would itself alter the wetlands by removing vegetation, compacting soils, and changing the hydrology of the immediate area, even if only temporarily. Precautions will be taken to avoid unnecessary impacts during

construction. See **Section 5.7** for a discussion of the various measures that may be implemented to minimize impacts to wetland features.

4.9.1 Description of Impacts

4.9.1.1 No-Action Alternative

The No-Action Alternative would have no impacts to wetlands.

4.9.1.2 Build Alternatives

For all of the build alternatives, impacts to wetlands will be direct and indirect, temporary and long-term. Direct impacts will entail the alteration of the vegetation, soils, and hydrology within the wetland areas. Vegetation may be mowed or removed in preparation for construction. Depending on construction needs, soils will be graded or amended with fill, and heavy equipment will compact soils, which often alters their drainage capability. As the topography and vegetation are altered, hydrologic conditions associated with runoff and drainage flow will also change. Disturbed areas will be revegetated if the soils have not been impacted too drastically. Best management practices may call for seeding or sodding of disturbed areas.

Several substitute methods were employed to allow a relative comparison of potential wetland impacts between alternatives. These methodologies made use of National Wetland Inventory (NWI) maps, topographic maps, aerial photography, and limited field reconnaissance to assess both the quantity and quality of the features being impacted by each alternative.

First, an estimate of project-related impacts to all potential wetlands and other jurisdictional waters – without regard to the “quality” of these features – was made for each alternative by 1) tallying the number of river, creek, and stream features; and, 2) calculating the acreage of NWI-mapped polygon features. This information is provided in **Table 4.9-1** and is discussed below.

Next, several methods were used to perform a preliminary quality assessment of potential wetlands and other jurisdictional features that would be impacted by each of the alternative alignments. For the purposes of this preliminary evaluation, the hydrologic value of each feature with regard to flood control, water quality, and groundwater recharge is assumed to be in direct

correlation with its size, i.e. larger drainages, ponded features, and wetlands are of higher hydrologic value than smaller features. Following this methodology, linear drainage features were divided into two categories: Minor, which includes small, intermittent tributary creeks and streams; and Major, which includes larger, perennial creeks, streams, and rivers. Polygon features were divided into one of three categories based on an estimate of areal coverage: Small – 0.1 to 0.5 acres; Medium – 0.6 to 2.5 acres; and Large – 2.6 acres. The number of features in each category, by alternative, is presented in **Table 4.9-2**.

A preliminary assessment of the relative quality of potential wetland features and other jurisdictional waters (polygon and linear features) with regard to biological function (e.g., wildlife habitat) was performed using the “Class” designation from the NWI map classification codes. For the purposes of this preliminary evaluation, features designated as “forested” (FO) or “scrub shrub” (SS) are considered to be of high biological quality because such features are more likely to provide a greater diversity of habitat (e.g., a tree and shrub-dominated feature would typically provide more vertical layers and otherwise diverse refuge types and more mast-producing plant species). Features classified as “emergent” (EM), “aquatic bed”, and (to a lesser extent) “unconsolidated shore” (US) are dominated by herbaceous species, and are herein considered to be of medium biological quality relative to other features along the project corridor because of the paucity or absence of the tree and shrub components. Finally, features designated as “open water” (OW) and “streambed” (SB) are considered here to be of low biological quality due to the paucity, ephemeral nature, or complete lack of an identifiable vegetative component. The number of potentially impacted NWI features within each of these three categories, by alternative, is presented in **Table 4.9-3**.

Certain impoundments and other areas included in the wetlands/waters of the U.S. estimate provided in this section may not be considered jurisdictional. Conversely, there are likely to be small pockets of jurisdictional wetlands that occur within the proposed rights-of-way of all alternative alignments that were not accounted for in this study. Only a field determination and detailed delineation of the waters and wetland areas within the ultimately selected alternative (to be performed once right-of-way has been acquired for the proposed action) will provide an accurate assessment of the areal extent and quality of jurisdictional areas. However, none of the wetlands identified along the proposed alternatives appear to be unique for the area, and they likely perform functions similar to those of other wetland areas located nearby. Where possible, the project will avoid impacting the portions of wetland or aquatic features outside the rights-of-way. The location and extent of features identified from record sources and limited field reconnaissance are presented on **Plates 2-1 through 2-46 Vegetation Types & Wetlands** found in **Appendix A** of this FEIS.

**Table 4.9-1 Impacts to Potential Wetlands and Other Waters of the U.S.
By the SH 130 Build Alternatives**

Build Alternatives	# of Drainage Crossings	Acres Impacted
1	77	63.7
2*	65	50.4
3	69	54.8
4	76	63.6
5	73	59.3
6	76	59.4
7	68	50.5
8	68	54.7

**Preferred Alternative*

It should again be emphasized that data provided in this section are preliminary and have been calculated using record information supplemented with reconnaissance-level field investigations. A jurisdictional determination and boundary delineation will not be performed until right-of-way has been acquired. However, it is likely that any quantitative error contained in these data is spread in an equivalent manner across all alternatives. For this reason, the greatest value of these data is that they allow a relative comparison of impacts between the build alternatives.

With that in mind, and as shown in **Table 4.9-1**, Alternative 2 (Preferred Alternative) will result in the fewest number of river, creek, and stream crossings (65) and the least impacted acreage of potential wetlands (50.4 acres) of any of the build alternatives. At the other extreme, construction of Alternative 1 will require the greatest number of drainage crossings (77) and will result in the greatest impacted acreage of potential wetlands (63.7 acres).

As shown in **Table 4.9-2**, Alternative 2 (Preferred Alternative) appears to result in the fewest potential impacts to major drainages (14 crossings), and (tied with Alternative 5) the fewest large polygon potential wetlands (6 crossings). Features in these size categories are assumed in our preliminary evaluation to be of the greatest relative value along the project corridor with respect to flood control, water quality, and groundwater recharge. Alternative 6 crosses the greatest number of major drainages (19), while Alternatives 1 and 3 cross the greatest number of large polygon features (9).

Table 4.9-2 Assessment of the Hydrologic Value of Impacted Linear Drainage Features and Polygon Features Along Each Build Alternative

Build Alternative	# of Drainages		# of Polygon Features		
	Major ¹	Minor ¹	Large ¹	Medium ¹	Small ¹
1	18	59	9	22	46
2*	14	51	6	26	52
3	15	54	9	24	51
4	18	58	8	25	45
5	17	56	6	24	47
6	19	57	7	21	48
7	16	52	7	23	53
8	15	53	8	27	50

*Preferred Alternative

¹See text for description of categories

With regard to the preliminary evaluation of biological value of impacted features shown in **Table 4.9-3**, Alternatives 2 (Preferred Alternative) and 5 would result in impacts to the fewest number of high quality features (7 crossings each). Alternatives 1 and 3 will cross the greatest number of high quality features (11 each).

Table 4.9-3 Assessment of the Biological Value of Impacted Potential Wetland and Other Jurisdictional Features Along Each Build Alternative

Number of Features			
Build Alternative	High ¹	Moderate ¹	Low ¹
1	11	7	66
2*	7	9	82
3	11	10	77
4	9	4	72
5	7	6	71
6	9	9	65
7	9	12	76
8	9	7	83

*Preferred Alternative

¹See text for description of categories.

4.9.2 Permits Required

It is not yet fully clear what type and how many Section 404 permits will be required for the project for several reasons. First, field determination and boundary delineation of wetlands and other jurisdictional waters has not yet been conducted; this work will be performed once right-of-way is acquired. Next, it is quite likely that SH 130 will be constructed in phases, and it may be possible to obtain Section 404 permitting separately for each phase. For segments where crossings of jurisdictional waters (including wetlands) are minimal, permitting might be accomplished under one or more of the Nationwide Permits, especially NWP #14 – Linear Transportation Crossings. However, for segments with more substantial impacts, an Individual Section 404 Permit would be required. Finally, the final design of SH 130, to be completed after the Record of Decision (ROD), will influence the extent of the impacts to jurisdictional waters.

In addition, the Colorado River is considered navigable from the Gulf of Mexico up to Longhorn Dam. As a result, coordination with the U.S. Coast Guard has been initiated under 23 CFR § 650 Subpart H (see **Appendix C** for a letter dated October 29, 1999). A response from the Coast Guard and additional coordination will determine whether or not a permit will be required for the proposed action under Title 33 U.S.C., Section 525.

4.9.3 Toll Road Considerations

Additional impacts to wetlands and other jurisdictional waters from the construction and operation of this facility as a toll road are not expected.

4.10 WATER BODY MODIFICATION; VEGETATION AND WILDLIFE IMPACTS

The construction of a new roadway affects the environment at various levels of geographic scale, from the microscopic to the landscape level. On a landscape level, the ecological communities currently existing along the proposed build alternatives will be fragmented to some degree. It is difficult to quantify this effect, primarily because there are numerous dynamic variables involved. Many generalizations regarding the concept of habitat fragmentation are well accepted, but specific processes and functional relationships are site specific, dynamic, and are interrelated at various scales of both time and space.

The direct effects of construction, operation, and maintenance of the new right-of-way add an element of disturbance to the ecosystem. The cumulative effects of numerous secondary developments resulting from roadway developments could continue to displace existing species from an area, or potentially alter important migratory routes for others. The vegetation communities occurring along the proposed build alternatives will be directly impacted by construction-related activities. The inevitable fragmentation of contiguous habitat blocks, the severance of riparian forest corridors, and the potential modifications of hydrologic and nutrient cycling and transfer processes are also likely to have some impact on natural communities. Wetland and aquatic systems are impacted in a similar fashion through direct disturbance by heavy machinery compaction and scarification, placement of fill and construction materials, and the disruption of hydrological and nutrient cycling. As with other elements of the ecosystem, wildlife communities are impacted by the permanent loss of habitat. In addition to direct construction related mortality or injury, wildlife populations often suffer impacts associated with displacement into adjacent habitats, which often are already at carrying capacity (i.e., the maximum sustainable level) for that species.

4.10.1 No-Action Alternative

The No-Action Alternative would result in no water body modifications and no vegetation or wildlife impacts other than what would develop from existing agricultural and urban related activities.

4.10.2 Build Alternatives

4.10.2.1 Water Body Modification

Numerous drainages, including rivers, creeks, and streams, will be crossed by all build alternatives for SH 130. As discussed above, such drainages and the adjacent bankside vegetation often serve as travel corridors for various wildlife species. Construction of the facility across a drainage channel can impede the movement of wildlife, and can serve to fragment and reproductively isolate vegetational communities.

The proposed highway will cross smaller channels through the use of various-sized concrete box culverts, while larger drainages will be bridged. Depending upon the drainage geometry at alignment crossings, some channel modification may be necessary along certain drainages, although this will be a relatively infrequent occurrence and avoided if at all practicable.

A summary of the approximate number of all drainage crossings (using bridges or box culverts), by alternative, is provided in **Table 4.9-1**. Specific locations along each alignment where channel modification will be necessary have not yet been identified. The proposed project will require permitting and possible coordination with the U.S. Army Corps of Engineers (USCE) under Section 404 of the Clean Water Act. The type of permit required, either a Nationwide #14 or an Individual Permit, will be determined once a full, detailed wetlands delineation has been conducted. A Coast Guard Permit may also be required for the proposed bridge crossing of the Colorado River.

4.10.2.2 Vegetation Impacts

The primary impact of the proposed action to various vegetation types will be the direct conversion to impervious roadbed and roadside vegetation cover. Secondary impacts relate more to the potential degradation of the quality of vegetational communities and reduction of their value as wildlife habitat surrounding the direct impact zone. These impacts are often cumulative and associated with increased development surrounding the roadway.

The methodology used in determining the different vegetation types along the study corridor is discussed in **Section 3.7.2 Vegetation within the SH 130 Corridor**. A quantitative evaluation of potential direct impacts to vegetation is presented in **Table 4.10-1**. To determine the direct impacts, the boundaries of each vegetation type were digitized onto an aerial photographic base, as were the proposed right-of-way boundaries of each of the build alternatives. The total acreage amount of each vegetation type occurring within the right-of-way of each alternative was then calculated electronically, and these amounts are reported in the table below.

**Table 4.10-1 Acreages of Vegetation Cover Types Directly Affected
By the SH 130 Build Alternatives**

Vegetation Type	Build Alternatives							
	1	2*	3	4	5	6	7	8
Grassland	1,905.1	1,940.5	1,915.9	1,972.9	1,929.7	1,861.8	1,872.6	1,983.8
Cropland	1,811.4	1,882.9	1,499.3	1,859.6	2,194.9	2,146.7	1,834.6	1,547.5
Aquatic	31.9	26.9	24.6	34.4	34.2	31.8	24.5	27.1
Mesquite-Hackberry Brush/Woods	595.7	579.5	833.6	467.4	341.6	470.0	707.9	705.3
Upland Woods/Savannah	151.2	252.4	191.1	214.6	212.5	149.1	189.0	254.5
Riparian Woods	91.2	66.9	86.4	76.4	71.7	86.5	81.7	71.7
Total Acreage	4,586.5	4,749.1	4,550.9	4,625.3	4,784.6	4,745.9	4,710.3	4,589.9

*Preferred Alternative

As shown on **Table 4.10-1**, all build alternatives will directly impact roughly the same total amount of vegetative cover; construction of Alternative 5 will directly impact the largest total acreage of undeveloped land at 4,784.6 acres, while Alternative 3 will impact the least at 4,550.9 acres. Grassland and Cropland represent the most common vegetation types impacted along all build alternatives, while Aquatic areas represent the least common.

Certain types of vegetation are considered sensitive due to their relative rarity and/or unique qualities. Among these are native prairie remnants, a type of grassland community that was once widespread throughout the central United States, but which is now increasingly rare due to conversion to agricultural and other uses. Although the rarity of native prairies is widely recognized, no official regulatory protection is currently afforded to this natural community type.

The “MoKan Prairie”, a privately-owned parcel located east of Round Rock in Williamson County, and the Indiangrass Preserve, surrounding Lake Walter E. Long in Travis County, are two such prairie remnants found within the study corridor. As currently proposed, construction of Alternatives 1, 3, 4 and 8 will result in direct impacts to at least a portion of the MoKan Prairie, which is a relatively small (about 12-18 acres) isolated prairie remnant located along and adjacent to the abandoned M-K-T right of way¹⁵⁶ (see **Figure 4.10-1**). The amount of the MoKan Prairie that would be affected by these alternatives is roughly estimated to be about two acres. The actual amount is subject to final design of the highway interchange with Gattis School Road.

The Indiangrass Preserve is largely occupied by mature oak-cedar elm woodlands interspersed with small patches of native prairie communities that are dominated by little bluestem and yellow Indiangrass. None of the build alternatives will cause direct impacts to this preserve.

4.10.2.3 Wildlife Impacts

Habitat use by wildlife species is a complex matter. Wildlife diversity and density correlate strongly with vegetation diversity, and the type, degree and frequency of disturbances to which an area's vegetation is subjected. Therefore, for the purposes of evaluating the potential

¹⁵⁶This assessment of the extent of the “MoKan Prairie” is from a 1990 survey by Gee and Campbell for the City of Austin. Other surveys report the size of the MoKan Prairie to be quite different. For instance, the Native Prairies Association of Texas reports a 35-acre patch which includes that surveyed by Gee and Campbell, as well as other patches both adjacent and separate. Impacts to this prairie remnant will vary depending upon which report is used.

impacts to wildlife resources of the proposed roadway project, vegetation impacts serve as a useful indicator of the magnitude of the various wildlife habitat impacts. For this reason, **Table 4.10-1** provides useful data in this assessment.

Croplands and grasslands combined account for approximately 75 to 85 percent of the areal coverage of the vegetated portions of each build alternative. However, the greatest impact to wildlife would result from the destruction of forest and wetland habitats. Forested areas, particularly, are relatively static environments that require greater regenerative time after clearing compared to pastureland, cropland, grassland, or emergent wetlands. The various woodland habitat categories (combined) comprise approximately 18 to 25 percent of the undeveloped acreage along each alternative.

Although Riparian Woods account for less than 3 percent of the habitat to be affected by any alternative, this vegetation type and associated transition areas to riverine and palustrine wetlands (i.e., Aquatic habitat, approximately 1 percent for all alternatives) provide the most valuable habitat for wildlife within the study corridor. These areas typically contain the greatest diversity of wildlife species. Neotropical migratory birds and other area-sensitive, interior-woodland avian species are particularly threatened by the effects of fragmentation of forests. For these reasons, the evaluation of project-related impacts on wildlife is largely focused on the amount of woodlands, especially the Riparian Woods, as well as the amount of Aquatic habitat traversed by the various build alternatives. The appropriate vegetation community data provided in **Table 4.10-1** has been configured in several ways to assess acreage impacts to general “Wildlife Habitat” (i.e., all three woodland categories combined plus Aquatic habitat) and “Highest Quality Wildlife Habitat” (Riparian Woods (only) plus Aquatic habitat). These data are provided in **Table 4.10-2**.

**Table 4.10-2 Impacted Acreages of Potential Wildlife Habitat
By the SH 130 Build Alternatives**

Category ^a	Build Alternatives							
	1	2*	3	4	5	6	7	8
Wildlife Habitat	870.1	925.8	1135.8	792.8	660.1	737.3	1003.0	1058.5
Highest Quality Wildlife Habitat	123.1	93.9	111.0	110.9	105.9	118.2	106.1	98.8

^a See text for category description

*Preferred Alternative

Construction of Alternative 3 would result in the greatest impacts to general Wildlife Habitat (1,135.8 acres), impacts to the Highest Quality Wildlife Habitat would be the third highest (111.0 acres) of any alternative. Similarly, Alternative 8 would result in the second-largest impacts to general Wildlife Habitat (1,058.5 acres), but would result in the second lowest impacted acreage of the Highest Quality Wildlife Habitat (98.8 acres). Conversely, the build alternatives with the greatest acreage impacts to the Highest Quality Wildlife Habitat, Alternatives 1 and 6 have among the lowest acreage impacts to general Wildlife Habitat.

4.10.3 Toll Road Considerations

Some additional impacts to water bodies, vegetation, and wildlife may result from the acquisition of additional right-of-way for toll plazas and other toll road facilities. However, these impacts should be minimal and not appreciably different from the non-toll facility.

4.11 FLOOD PLAIN IMPACTS

4.11.1 Summary of Hydraulic Design Studies

The hydraulic design practices for the construction of all of the build alternatives will be in accordance with current TxDOT and FHWA design policies and standards. Based on a preliminary hydraulic analysis, encroachments on the flood plains would not increase the base flood elevation to a level that would violate applicable FEMA flood plain regulations. The proposed facility would permit the conveyance of the 100-year flood over the roadway without causing significant damage to the roadway, stream, or other property and would not be designed to support incompatible flood plain development.

4.11.2 Encroachments and/or Support of Incompatible Development

4.11.2.1 No-Action Alternative

The No-Action Alternative will not encroach on any existing flood plain or regulatory floodways nor will it have any effect on base flood elevations in the corridor. Development independent of SH 130 is occurring in the study corridor, and the compatibility of such development with flood plains and regulatory floodways is subject to federal, state, and local standards.

4.11.2.2 Build Alternatives

Each of the eight build alternatives for the proposed SH 130 will encroach on existing flood plains, as shown on **Plates 1-1 through 1-46 Human Environment & Flood Plains**, found in **Appendix A** of this FEIS. These encroachments, however, are not expected to increase base flood elevations nor support incompatible development, as stated above in **Section 4.11.1 Summary of Hydraulic Design Studies**. If it is determined that the Preferred Alternative, once selected, will affect the base flood elevation in certain areas, or will have a “significant encroachment”¹⁵⁷ on area flood plains, then TTA will comply with CFR 23 § 650.113 Subpart A.

4.11.3 **Toll Road Considerations**

Impacts to flood plains would be substantially the same under a toll road scenario as under a toll-free scenario.

4.12 **THREATENED AND ENDANGERED SPECIES**

4.12.1 **Coordination with the United States Fish and Wildlife Service**

Previous project-specific communication received from the U.S. Fish and Wildlife Service (USFWS) regarding potential impacts to federally-protected species was focused on the segments of SH 130 from its northern terminus southward to US 290 (dated October 17, 1994 and March 1, 1995), and from US 290 southward to FM 1185 (dated June 20, 1995). These letters are included in **Appendix C** of this FEIS. An additional letter was sent to USFWS on October 29, 1999, notifying them of the decision to combine the three previous segments of SH 130 into a single EIS. This letter and a response from USFWS are also included in **Appendix C**.

In its coordination regarding the northern segment, USFWS provided a list of federally endangered and threatened species, and candidate species for listing. Particular mention was made in both written communications for this segment regarding the occurrence of several federally protected karst invertebrates known to occur in the general vicinity of the proposed action.

¹⁵⁷CFR 23 § 650.105 Subpart A defines significant encroachment as any direct support of likely base flood plain development that would involve...a significant adverse impact on natural and beneficial flood plain values.

However, record information sources indicate that there is no likely suitable karst habitat,¹⁵⁸ nor any reported occurrences of karst or other federally-listed species¹⁵⁹ along any of the proposed alternatives for the southern end of the study corridor, between FM 1185 and I-10. Between the northern and southern termini, very little suitable karst habitat occurs to the east of I-35; therefore, the occurrence of federally-listed karst species along any of the build alternatives is very unlikely.

For the central portion of the proposed SH 130 (described above as between US 290 and FM 1185), the USFWS determined that no federally endangered or threatened species were expected to be impacted. The record search and field reconnaissance conducted thus far for the project support this determination.

Further comments from the USFWS in response to the coordination letter sent on October 29, 1999, covered the entire corridor from Georgetown to Seguin. The USFWS letter pointed out the existence of a candidate species, Cagle's Map turtle, and two salamander species of concern, the Jollyville Plateau and Georgetown Salamanders, within the SH 130 corridor. However, the letter also pointed out that the "proposed project area is not currently located within the designated critical habitat of any federally listed species nor does the...area appear to provide suitable habitat for federally listed or proposed species."

4.12.2 No-Action Alternative

No impacts to any endangered, threatened, proposed or candidate species are anticipated from the No-Action Alternative.

4.12.3 Build Alternatives

No known occurrences of federally-listed Endangered or Threatened species have been documented along the SH 130 study corridor, and no impacts to any federally-listed species are anticipated. **Table 3.7-1** provided a list of all sensitive species of potential occurrence within the

¹⁵⁸Veni & Associates, 1992. "Geologic Controls in Cave Development and the Distribution of Cave Fauna in the Austin, Texas Region." Report for the U.S. Fish and Wildlife Service, Austin, Texas.

¹⁵⁹Texas Biological and Conservation Data Service, 1998. Special Species lists for Williamson, Travis, Caldwell and Guadalupe Counties, Texas.

corridor. A description of the habitat requirements for each of the sensitive species of potential occurrence in the corridor was presented by species in **Section 3.7.5.5**.

The mountain plover, which is proposed for federal listing as threatened, has been recorded from the southern portion of the corridor near Seguin. Two records, one as recent as 1993, known from the Wildlife Diversity Program at the Texas Parks and Wildlife Department show this species approximately one mile west of Alternatives 1, 4, 5, and 6 near Seguin in Guadalupe County.¹⁶⁰ Other records in close proximity include sightings north of Granger Lake in Williamson County, and at least two recorded sightings near the New Braunfels Airport.¹⁶¹ This bird is a migrant/winter resident in the area, where it inhabits agricultural fields. As shown in **Table 4.10-1**, impacts to cropland from the various build alternatives range from approximately 1,400 acres (Alternative 8) to 2,000 acres (Alternative 6). While these impacts to croplands could diminish the habitat for the mountain plover, there are large amounts of other cropland within the general area and therefore no impacts to the species are anticipated as a result of the proposed action.

The potential impacts to other sensitive resources within the study corridor center around the disturbance of mixed deciduous riparian woodlands and their associated wetland and aquatic habitats and potential native prairie remnants. The riparian woodlands and associated wetland/aquatic features are the most sensitive environmental resources known within the study corridor. The riparian complex within the study corridor may provide suitable habitat for several rare species. These include the Georgetown Salamander, Jollyville Plateau Salamander, Guadalupe bass, blue sucker, Cagle's map turtle, Texas garter snake, American Swallow-tailed kite, southeastern myotis and Correll's false dragon-head, although none of these are federally-listed as threatened or endangered. The riparian woodlands also support colonial waterbird nesting and feeding habitat, and are utilized by numerous avian migrants (which could include federally-listed species in **Table 3.7-1**) as travel corridors, feeding areas, and nesting habitat. Potential impacts to riparian woodlands range from 73.7 acres (Alternative 3) to 100.7 acres (Alternative 5), while impacts to aquatic habitat range from 45.5 acres (Alternative 5) to 55.0 acres (Alternative 3) (see **Table 4.10-1**). It should be noted that not all (and, in some cases, only a small percentage or none) of the habitat potentially impacted by the proposed action is suitable for the various species discussed in this section.

¹⁶⁰Texas Biological and Conservation Data System, Wildlife Diversity Program, Wildlife Division, Texas Parks and Wildlife Department.

¹⁶¹National Audubon Society, "TEXBIRDS Archives", no date.

The Georgetown Salamander and the Jollyville Plateau Salamander are species of increasing importance to the USFWS. The Georgetown Salamander is an endemic species found in springs and waters of some caves of the Georgetown region. The Jollyville Plateau Salamander is also endemic and found in springs and waters of some caves of the region north of the Colorado River in Travis County. These species are generally known to occur only in the karst areas west of the SH 130 study corridor, but more recent reports also have at least the Jollyville Plateau Salamander occurring in Brushy Creek just west of the M-K-T Railroad right-of-way. As a result of the habitat for these species being potentially affected by the proposed action, the USFWS is seeking voluntary conservation efforts by project sponsors (see **Appendix C** for a letter dated December 6, 1999). In response, TTA has initiated coordination with USFWS regarding procedures for these conservation measures (see **Appendix C** for letter dated August 9, 2000). The need for and potential scope of a pre-construction species survey will be determined through the coordination process.

The Guadalupe bass, a federal species of concern, is an endemic fish known to occur in river systems along the study corridor. Typically, it inhabits shallow, swift Edwards Plateau streams of Central Texas. Its occurrence within the study corridor represents the eastern edge of its distribution and provides another indication of the Edwards Plateau influence on the flora and fauna of the area. The blue sucker, a federal species of concern and state threatened fish, is typically limited to deeper waters of major waterways. Cagle's map turtle, a federal candidate, is endemic to the Guadalupe River system and has been recorded from Guadalupe County. According to the USFWS, this riverine turtle is "currently found only in segments of the Guadalupe and San Marcos Rivers" (see **Appendix C** for letter dated December 6, 1999). If present in the study corridor, potential impacts to each of these species may include temporary increased siltation and turbidity in surface waters. However, with regard to the Cagle's map turtle, the proposed action would involve spanning both the Guadalupe and San Marcos Rivers, thereby avoiding any major impact to its potential habitat. Other potential impacts are expected to be minimized through the use of sedimentation and erosion control measures.

The Texas garter snake, a federal species of concern that inhabits moist wooded areas of Central Texas, is documented approximately one mile west of the SH 130 corridor near an unnamed tributary of Walnut Creek. It is presumed to occur throughout the Walnut Creek and surrounding basins. The white-faced ibis (federal species of concern and state-threatened) and wood

stork (state-threatened) are inhabitants of wetland areas. Some mortality, displacement, or loss of suitable habitat for these species may occur as a result of the proposed action.

The Texas horned lizard, a federal species of concern and state-threatened species, was historically a common resident of Central Texas, inhabiting xeric grassland habitats. Recently, however, the species has experienced serious declines throughout many portions of the state, including the study corridor. The reason for their decline has been attributed to impacts to their primary prey items (chiefly native formicid insects), the loss of habitat, and the cumulative effects of pesticides in urban and agricultural areas. Although no horned lizards were observed during field investigations, they could occur sporadically throughout the study corridor. The Texas tortoise and timber rattlesnake (both state-threatened) may also occur within the corridor. It is possible that some individuals of each of these species may be killed, and some loss of habitat would be expected as a result of the proposed action.

The loggerhead shrike (federal species of concern) is both a migrant and common year-round resident in the study corridor, and was observed during field reconnaissance in May 1999. This predatory perching bird frequents open fields with scattered trees, open woods, and brushland. The greatest threat to this species would be from clearing and construction that might occur during the nesting season, in which case loss of nests and contents could be expected. The loggerhead shrike is declining throughout its range, possibly due to habitat loss and pesticides.¹⁶²

Two federal plant species of concern, big red sage and bracted twistflower, are recorded from either Guadalupe or Caldwell counties and the twistflower is also recorded from Travis County; however, their potential occurrence along any alternative is unlikely, due to lack of suitable habitat. Therefore, the potential for impacts to these species is considered remote. Sandhill woollywhite and Park's jointweed are special plant species identified by the Texas Parks and Wildlife Department as potentially occurring in post oak woodlands and grasslands over loose, deep, Eocene sands. The range for this species generally occurs south and east of the proposed alternative routes, and impacts to these species are not expected to result from any of the project alternatives.

¹⁶²Ehrlich et al., 1988. "The Birder's Handbook," Simon and Schuster, Inc., New York, New York.

4.12.4 Toll Road Considerations

Additional impacts to protected vegetation and wildlife as a result of the construction and operation of SH 130 as a toll-road are not expected.

4.13 IMPACTS TO HISTORIC PROPERTIES

This section documents potential impacts to archeological and architectural resources by the SH 130 alternatives, and how they will be resolved. NEPA requires agencies of the federal government to consider effects of their actions on “the human environment,” which includes cultural as well as natural aspects of the environment. Cultural resources are defined as any prehistoric or historic district, site, building, structure, or object listed in, or eligible for listing in the National Register of Historic Places (NRHP).

Under the Technical Advisory 771 of the Federal Highway Administration, historic structures/archeological sites determined eligible for listing in NRHP by the State Historic Preservation Officer which will be directly impacted by a FHWA funded project are subject to evaluation under Section 4(f) of the DOT Act 1966 (23 CFR 771.135). Section 4(f) requires that the agency show that all planning to minimize harm to any NRHP property resulting from the proposed action was considered and that all feasible or prudent alternatives to avoid adverse impacts to the NRHP property have been explored.

In addition to Section 4(f) requirements, Section 106 (36 CFR 800) of the 1966 National Historic Preservation Act, as amended, also requires the agency to consult with the State Historic Preservation Officer (SHPO) concerning the potential effects that a proposed project may have on NRHP properties located within the project’s Area of Potential Effects (APE). (See **Section 3.8.1** for a definition of the APE). The law requires that the agency show that project planners and engineers have “taken into account” the effects the project may have on NRHP properties and that a reasonable effort has been made to preserve the resource through avoidance or other means to minimize adverse impacts to the property and/or the historic resource.

The criteria for assessing effect are prescribed in 36 CFR 800.9. The law states: An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.

Examples of adverse effects on historic properties include, but are not limited to,

- physical destruction or damage to all or part of the property;
- change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;
- introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.

All remaining identification, assessment, and treatment of historic properties, whether archeological or architectural in nature, shall be completed in accordance with the PA, public involvement described in the **Executive Summary**, and with the SH 130 protocol that is provided in **Appendix F**. Said protocol resulted from determination of effect as partial mitigation for properties found eligible on the Preferred Alternative. The remainder of this section describes the archeological resources that may be impacted by individual alignments and the historic properties that may be impacted.

4.13.1 Impacts to Archeological Resources

The TxDOT and TTA, in consultation with the THC and under the terms and conditions of the PA and the SH 130 protocol in **Appendix F**, will identify archeological historic property types, determine the elements of their significance, and as necessary, develop research strategies and methodologies that will be used to treat the adverse effects to historic archeological properties.

4.13.1.1 No-Action Alternative

The No-Action Alternative will have no impacts on prehistoric and/or historic archeological sites.

4.13.1.2 Build Alternatives

Prehistoric/Historic Archeological Sites

Alternatives 1 and 3

Alternatives 1 and 3 represent identical impacts to archeological sites (see **Table 4.13-1**). The construction of either alternative will directly impact one prehistoric/historic archeological site

that is listed on the NRHP (41WM465) and five prehistoric and/or historic archeological sites that may be eligible for the NRHP (41WM468, 41TV1742, 41TV454, 41TV455, 41TV1625). This determination is based on archival research and from comparing recorded site locations to the path of the proposed alternatives. The determination of potential NRHP eligibility is based on an evaluation of site records in accordance with Criterion (d) of 36 CFR 60.4 (NRHP criteria for evaluation) and the standards of Chapter 26 of the THC Rules of Practice and Procedure for the Antiquities Code of Texas (TAC). A Section 106 survey is still in the planning stages concurrent with this FEIS and thus the actual boundaries of these sites are currently unknown. This latter aspect is important because three sites (41WM468, 41WM465, 41TV1742) are located at the edges of the proposed alternatives in the northern portion of the study corridor and the exact site boundaries in relation to proposed Alternatives 1 and 3 have not been firmly established. The positions and locations of these sites in relation to the proposed alternatives are discussed below.

Table 4.13-1 Preliminary Assessment of Impacts to Potentially Eligible NRHP Archeological Sites

Alternative	Site Type	Site Number/Name
1, 3	Prehistoric Terrace site	41TV454, 41TV455, 41TV1625, 41WM12, 41WM464, 41WM468
	Prehistoric Lithic Scatter	41TV150- Buddy Pierson site 41WM682, 41WM676, 41TV325
	Historic	41TV1742-Bohls House, 41TV1743, 41WM465
2, 5	Prehistoric Terrace site	41TV454, 41TV455, 41TV1625
	Prehistoric Lithic Scatter	41TV1256, 1257, 1260, 1268, 1269, 1270, and 1276 41TV 150- Buddy Pierson site
	Prehistoric/Historic	41TV1278
	Historic	41TV1112, 41TV1282, 41TV1417
4, 8	Prehistoric Terrace site	41TV454, 41TV455, 41TV1625, 41WM12, 41WM464, 41WM468
	Prehistoric Lithic Scatter	41TV150-Buddy Pierson site, 41WM682, 41WM676, 41TV1256, 1257, 1260, 1268, 1269, 1270, and 1271
	Prehistoric/Historic	41TV1278
	Historic	41TV1742- Bohls House, 41TV1282, 41TV1417, 41TV1112, 41TV1743, 41WM465
6, 7	Prehistoric Terrace site	41TV454, 41TV455, 41TV1625
	Prehistoric Lithic Scatter	41TV 150-Buddy Pierson Site 41TV325

In addition, Alternatives 1 or 3 will directly impact three sites of unknown NRHP eligibility (41WM12, 41WM464, 41TV150) and four sites that may represent no NRHP eligibility, based on archival research (41WM682, 41WM676, 41TV1743, 41TV325). Limited field observation suggests that site 41WM464, a prehistoric/historic site may be destroyed (see below). The recorded boundaries of Sites 41WM12 and 41WM464 overlap only the edges of the proposed rights-of-way of these two alternatives and are not yet firmly established by archeological survey.

Alternatives 2 and 5

Alternatives 2 and 5 will directly impact three prehistoric archeological sites that may be NRHP eligible (41TV454, 41TV455, 41TV1625). Alternatives 2 or 5 will also directly impact 12 archeological sites of unknown NRHP potential, based on site record research (41TV1417, 41TV1256, 41TV1257, 41TV1260, 41TV1268, 41TV1269, 41TV1270, 41TV1276, 41TV1278, 41TV1112, 41TV1282, and 41TV150). Four of these sites are historic in nature, two of which are not recommended for further research by the original surveyors, and the remainder are prehistoric lithic or flake scatters that offer no information potential, based on site record research.

Alternatives 4 and 8

Alternatives 4 and 8 will directly impact six archeological sites, one of which is listed on the NRHP (41WM465), and five of which may be NRHP eligible, based on site record research (41WM468, 41TV1742, 41TV454, 41TV455, 41TV1625). It is important to note that the boundaries of three of these sites are not ground truthed (i.e., verified through field checking) (see above) and appear to overlap only the edge of the proposed right-of-way. In addition, Alternatives 4 and 8 will directly impact 17 sites of unknown NRHP potential (41WM12, 41WM464, 41TV1282, 41TV150, 41WM682, 41WM676, 41TV1417, 41TV1256, 41TV1257, 41TV1260, 41TV1268, 41TV1269, 41TV1270, 41TV1271, 41TV1278, 41TV1112, 41TV1743), based on site record research.

Alternatives 6 and 7

Alternatives 6 and 7 will directly impact four prehistoric archeological sites that may be eligible for the National Register (41TV454, 41TV455, 41TV1625, 41TV325) and one site of unknown NRHP potential (41TV150).

Site Locations

Listed and Potentially Eligible Sites

The western extent of site 41WM465, a prehistoric/historic site, lies within the projected right-of-way of Alternatives 1, 3, 4, and 8 south of US 79. This NRHP listed resource is also called the Kenney Fort Site due to the location of the fort at the extreme eastern limit of the site. The site also contains prehistoric artifacts in the form of both Late Prehistoric and Archaic-age projectile points found in association with flaking debris and burned limestone. Historic artifacts include a variety of earthenwares (some dating to the 1840s and 1850s).

Site 41WM468 is a buried prehistoric terrace occupation site located on the north side of Brushy Creek in the general vicinity of Lake and Brushy Creeks. The site is within the proposed right-of-way of the proposed Alternatives 1, 3, 4, and 8, south of US 79.

Site 41TV1742, or the Bohls House, is a historic homestead which at one time contained several possible mid-19th century buildings. A cistern, foundation, and house are believed to still be present, according to files at the Texas Archeological Research Laboratory (TARL). The site is located adjacent to the proposed right-of-way of Alternatives 1 through 8 immediately adjacent to FM 685 about 0.5 mile north of Pfluger Lane.

Two potentially important prehistoric terrace occupation sites, 41TV454 and 41TV455, are located between the Colorado River and SH 71. Both of these sites appear to be directly in the path of Alternatives 1 through 8.

Site 41TV1625, located south of Onion Creek, primarily east of the proposed right-of-way of Alternatives 1 through 8, and south of SH 71, has been recommended for further testing and for possible nomination as a State Archeological Landmark (SAL). This site may be eligible for the NRHP on the basis of intact subsurface prehistoric deposits. It is currently projected to exist within the proposed right-of-way of Alternatives 1 through 8.

Unknown NRHP Potential

41WM12 is located south of US 79 in the vicinity of Brushy Creek and consists of a long narrow scatter of burned rock and lithic debitage. The site has the potential to contain significant

buried cultural deposits. The westernmost edge of the site, as depicted by site records, overlaps the edge of the right-of-way for Alternatives 1, 3, 4 and 8.

Site 41WM464 was a combination historic/prehistoric site which lies within the proposed right-of-way of Alternatives 1, 3, 4, and 8 (1,640 feet south of US 79). However, evidence from the field visit suggests that the site has been completely destroyed.

Site 41TV1282 is located adjacent to the roadway of FM 969, approximately 2,000 feet east of the juncture of FM 973 and FM 969. This historic site contains a chimney foundation, a storage shed, stables, a corral and a water tank. The remains of a wood frame house lay in decay around the chimney foundations and the extent of associated artifacts is unknown.

The Buddy Pierson site, 41TV150, is a prehistoric site that reportedly contains projectile points, bifacial tools, and debitage, but there is no additional information. As currently mapped, 41TV150 appears to lie directly west of the proposed right-of-way of Alternatives 1 through 8, in the central section of the study corridor, adjacent to Moore road.

Site 41WM682, 1,312 feet east of FM 1460 and 5,700 feet north of US 79, is a prehistoric lithic procurement site, located within the proposed right-of-way of Alternatives 1, 3, 4, and 8. The site is somewhat eroded and was assessed by the original surveyors as having low research potential.

Site 41WM676 (1,550 feet north of US 79) is a prehistoric lithic scatter site located on a bluff above Chandler Branch just northwest of the Palm Valley Lutheran Church. The site's eastern boundary lies within the proposed right-of-way of Alternatives 1, 3, 4, and 8. The site is considered highly disturbed due to plowing.

Approximately 984 feet north of US 290, exist two related historic sites, the remains of houses that were occupied by tenant farmers during the 1880s to about 1930 (41TV1417, 41TV1416). Site 41TV1417 appears to be located within the proposed right-of-way of Alternatives 2, 4, 5, and 8, and thus could be directly impacted. Site 41WM1416 is located further to the west, outside of the APE.

Located on a broad backslope overlooking Wilbarger Creek is site 41TV1743. The site contains early 20th century debris and is considered to be extremely limited in offering any useful

information. The site is located at the edge of the proposed right-of-way of Alternatives 1, 3, 4 and 8.

A group of seven prehistoric sites (41TV1256, 41TV1257, 41TV1260, 41TV1268, 41TV1269, 41TV1270, 41TV1278) is located in the proposed right-of-way for Alternatives 2, 4, 5, and 8, in the northern section of the study corridor generally between FM 973 and FM 969. The sites are mostly lithic scatters or lithic procurement sites that may offer very little in the way of useful and/or important information.

One additional prehistoric site may be directly impacted by the northern alternatives (41TV325). Although the boundaries of this site are not firmly established, site records suggest the possibility that portions of these sites may intersect Alternatives 1, 3, 6, and 7. Site 41TV325 is a reportedly large and relatively undisturbed lithic procurement site.

The remains of a structure that may date to 1886 comprises 41TV1112. Although 40 percent of the house is estimated to be standing, preliminary architectural studies indicate that there have been several subsequent additions to the house, which may have diminished its potential for NRHP eligibility. The site is located within the proposed right-of-way of Alternatives 2, 4, 5, and 8 north of FM 969.

Sites in Close Proximity to Build Alternatives

Site 41TV456 is a multi-component prehistoric occupation site with late 19th century historic house foundations also present. Most of the site is located on the east edge of the proposed right-of-way of Alternatives 1 through 8, south of the Colorado River and north of SH 71. As it stands, it is unclear whether the very western edge of the site will be directly impacted by the construction of Alternatives 1 through 8.

The locations of prehistoric sites 41TV410 and 41TV204 should be noted, given each of these sites' potential eligibility for the NRHP. Site 41TV410 is located approximately 750 feet east of the proposed right-of-way of Alternatives 1 through 8 near their intersection with SH 71. The site is reportedly well preserved and contains fire cracked rock, mussel shell and stone tools. Similarly, 41TV204, located 2,250 feet east of the proposed right-of-way of Alternatives 1 through 8 near their intersection with SH 71, contains remnants of cooking facilities and numerous artifacts.

Site 41TV902 reportedly represents the remains of a late 19th century farmstead, located just south of where the build alternatives cross Pfluger Lane, approximately 328 feet west of the proposed right-of-way of Alternatives 1 through 8. The site reportedly contains a standing frame house and a scatter of historic materials. The original survey of the site recommended further archival research in order to document its potential importance. The survey report also suggests that the site may be potentially eligible for listing on the NRHP.

Site 41TV1396 is the remains of a historic schoolhouse known as the Dry Creek School, which operated from 1908-1950. The site, which has been incorporated by the Del Valle School District, is located approximately 250 feet to the west of Alternatives 1 through 8 in the central section of the study corridor. This site is potentially important and its location should be considered should there be any design change in the location of the alternatives.

Located approximately 33 feet south of an intermittent tributary of Gilleland Creek, site 41TV1324 is described as disturbed, surficial terrace lithic scatter. The site, 250 feet east of Alternatives 1, 3, 6, and 7 along Harris Branch, is located in close proximity to these alternatives. Site 41WM466 is a prehistoric terrace lithic scatter with burned rock located roughly 50-100 feet north of Alternatives 1, 3, 4, and 8 at the confluence of Dry and Dyer Branches and Brushy Creek.

Site 41TV1275 is reportedly a prehistoric lithic scatter that may also have an historic component. The site is located immediately west of Alternatives 2, 4, 5, and 8. Site 41TV1266 is located approximately 300 feet west of the proposed right-of-way of Alternatives 2, 4, 5 and 8, but may be of limited research potential (lithic scatter). Similarly, Site 41TV1267 is located approximately 350 feet west of the proposed right-of-way of Alternatives 2, 4, 5 and 8, 3/4 of a mile north of FM 969, and may also be of limited research potential. Site 41TV1271 is located immediately east of these alternatives and may not represent NRHP potential.

Site 41TV421 is located immediately west of and adjacent to the proposed right-of-way of Alternatives 1 through 8 in the central portion of the study corridor, south of the proposed interchange with SH 71. Site 41CW46, in the southern portion of the study corridor, is another prehistoric lithic scatter located 131 feet west of Alternatives 1 through 8, north of FM 1185.

Other High Probability Areas

In order to determine the potential for unrecorded sites, various unrecorded properties were observed during limited, reconnaissance level investigations and informal field observations conducted in targeted areas along the proposed rights-of-way. Field visits were generally conducted on private land specifically where access was granted.

In compliance with NEPA, the THC recommended that archival research and a reconnaissance survey be conducted. Incorporating these recommended procedures into the development of this FEIS helps to insure that the assessment of build alternatives is informed by well-grounded data that reduces uncertainty about the potential impact to historic and prehistoric properties. High probability areas where cultural resources are most likely to be discovered were developed in consultation with THC (see **Appendix C** for coordination letter dated June 1, 1995). These areas are located on either side of Berry Creek, the San Gabriel River, Brushy Creek, Gilleland Creek, and Wilbarger Creek.

Nearly all of the drainages within the study corridor represent at least moderate probability for the presence of intact prehistoric materials and should be surveyed if potentially affected by the proposed action. Additional high probability areas include adjacent uplands where lithic materials could have been procured and manipulated for purposes of stone tool production. High ridges in advantageous “lookout” spots or adjacent to drainages would also have been favorable locations for temporary occupations or perhaps semi-permanent occupations. Permanent base camps were likely located in favored locations adjacent to the major drainages in this portion of the Blackland Prairie area.

4.13.2 Impacts to Historic Buildings

Impacts to historic buildings may occur as a result of the construction of the proposed action. The impacts, if any, may be direct or indirect, depending on the proximity of the proposed action. Efforts to avoid or otherwise minimize such impacts were undertaken during the alternatives development process. Such efforts included a review of available records at historical agencies, tax assessor offices, libraries, and history centers, as well as oral interviews with property owners and relatives. In addition, a preliminary vehicular inspection of the study corridor was conducted to identify obvious historic architectural constraints. Subsequent efforts included formal Section 106 coordination with the State Historic Preservation Office (SHPO).

A definitive comment on the discussion of effects/impacts to NRHP properties at this time is premature (see TxDOT letter dated January 5, 2001, in **Appendix C**). While it appears that along the Preferred Alternative there are no direct impacts to NRHP listed and eligible properties, the effects of the undertaking on these historic standing properties are considered to be adverse (see THC letter dated January 12, 2001, in **Appendix C**). Mitigation shall consist of the completion of National Register nominations, on those properties determined eligible, that shall be submitted to SHPO for comment and concurrence, as detailed in the SH 130 protocol in **Appendix F**.

Issues of effect to NRHP properties which remain unknown include the finalization of the Preferred Alternative; highway design (i.e., roadway aesthetics, lighting, landscaping, scenic easements, bicycle and pedestrian-related issues which would be the results of the Design Charette); and the specific locations for toll plazas, intersections, exit and entrance ramps and frontage roads.

4.13.2.1 No-Action Alternative

Impacts to historic buildings are not expected as a result of the No-Action Alternative.

4.13.2.2 Build Alternatives

Historic Buildings

To more fully compare and evaluate the SH 130 build alternatives in terms of possible impacts to historic resources (buildings, structures, objects, districts, sites), a vehicular reconnaissance survey of each alternative was conducted by project staff architectural and history specialists. Buildings and sites situated within the APE of the proposed alternatives were recorded photographically and plotted on maps in relation to proposed alternatives. As a result of the reconnaissance survey, 177 properties, including cemeteries with standing monuments, were identified for further consideration, as shown on **Figures 3.8-1a, b and c** in **Section 3.0 Affected Environment**. Of these properties, 34 are considered eligible for listing in the National Register (based on coordination with the SHPO) and one is currently listed (Site No. 45, the Barr Mansion).

Only those properties that were determined historically significant in accordance with Section 106, or those properties which are subject to Texas Antiquities permit coordination are required by federal and state laws to have an impact (direct or indirect) assessments. An impact to a property may be direct or indirect depending on the property's location to the proposed action. A direct impact occurs with the taking of property from and National Register eligible boundary by

the proposed action. An indirect impact occurs when properties situated within the one-quarter-mile APE but outside the proposed right-of-way are impacted visually or by noise or vibrations measured at different levels. Under Section 106, the NRHP eligible properties were evaluated as being Adversely or Non-adversely effected by the proposed action. Typically an adverse effect occurs when a proposed action directly impacts a property. However, it may also occur as the result of an indirect impact, or a constructive use of the property, in which there is no actual taking of the resource but it is substantially impaired by activities, features, or attributes associated with the proposed action. See **Table 4.13-2** for a reference of the impacts and effect determinations for all of the NRHP eligible properties by the SH 130 alternatives.

In the northern portion of the study corridor from I-35 to US 290, one property is currently listed in the NRHP, Site No. 45 known as the Barr Mansion, and eight NRHP eligible properties, site nos. 6, 19, 20, 23a and b, 24a, 25B, 25C, and 40 were identified within the APE of the proposed alternatives. Within the central portion of the study corridor from US 290 to FM 1185, eight properties eligible for listing in the NRHP were identified within the APE for the proposed build alternatives, and include site nos. 49, 50, 55, 56A, 67, 69, 75, and 79. In the southern portion of the study corridor from FM 1185 to I-10, a total of 18 NRHP eligible properties were identified within the APE for the build alternatives: site nos. 89, 96, 97B, 99, 104, 107, 108, 109, 110, 115, 121, 126B, 129, 132, 139, 155, 156B, and 169. See **Table 3.8-1** for the type of NRHP eligible properties being impacted by the proposed action; see **Figures 3.8-1a, b, and c** for the location of the NRHP eligible properties; and see **Table 4.13-3** for the type of impacts to each of the NRHP eligible properties. All effects are considered adverse.

Official State Historical Markers

Four properties with Official State Historical Markers (OSHM) were identified and included in the evaluation of the eight build alternatives. Of the OSHMs identified, Site No. 50e was found to be eligible for the NRHP, and includes three stone Centennial markers on the Hornsby Ranch commemorating the 100 year celebration of the State of Texas. In accordance with Section 106 a Determination of Effect was required in consultation with the SHPO to assess the impacts of the proposed action on the OSHMs. The assessment resulted in an indirect impact and a Non-adverse Effect by Alternatives 1, 3, 6, and 7 (see **Table 4.13-2** for a reference of impacts and effect determinations of this NRHP eligible OSHM by the SH 130 alternatives).

The additional OSHMs identified with in the APE of the study corridor, but determined not eligible for NRHP listing include Site No. 24b commemorating the Anti-Slaveholding Union

Baptist Cemetery along Alternatives 1, 3, 4, and 8; Site No. 84 commemorating Dr. D. Port Smythe situated within the proposed right-of-way of alternatives 1 through 8; and Site No. 127 commemorating Jose Antonio Navarro along alternatives 1, 4, 5, and 6. Research indicated that none of the alternatives will directly cross or affect any type of cultural property associated with the individuals commemorated by the markers. Direct impacts to one OSHM (Site No. 84) may be mitigated through simple relocation of the marker in coordination with the Texas Historical Commission. See the **SH 130 Historic Buildings Report, Volumes A-C** (under separate cover) for a discussion of these properties.

Cemeteries

A total of 12 cemeteries were considered for possible NRHP listing within the APE of the study corridor. Of the cemeteries identified, 11 were determined eligible for National Register listing, and include site nos. 23b, 24a, 40, 50c, 50d, 56A, 79, 89, 107, 115, 155. In accordance with Section 106, a Determination of Effect was required in consultation with the SHPO to assess the impacts of the proposed action to the NRHP eligible cemeteries. The assessment resulted in one direct impact by Alternatives 1, 3, 4, and 8 to Site No. 23b, the Palm Valley Lutheran Cemetery. This impact was determined to have an Adverse Effect on the cemetery requiring a 4(f) evaluation if this alternative is selected for construction. The assessment also resulted in one indirect impact with the possibility of an Adverse Effect to Site No. 107, the Staples Cemetery. Because this cemetery is a component of a National Register eligible historic district, a 4(f) evaluation may be required if the proposed action adversely affects the district as a whole. The remaining NRHP eligible cemeteries were determined to be indirectly and non-adversely affected by the proposed alternatives (see **Table 4.13-2** for a reference of impacts and effect determinations on the NRHP eligible cemeteries by the SH 130 alternatives).

If unrecorded burials are found within the ROW or any ground disturbing activities associated with SH 130, TxDOT will (1) consult SHPO under the terms and conditions of the PA to determine eligibility for the TAC and the National Register and assess effects; (2) implement a treatment plan to address issues of significance, data recovery, and if necessary reburial; and (3) if the cemetery/burials are prehistoric or historic Indian, the provisions of the Native American Graves Protection and Repatriation Act will be followed. These steps shall be undertaken in accordance with the PA and the SH 130 protocol.

4.13.2.3 Impacts to Historic Properties

Table 4.13-2 presents the impacts for each of the National Register listed or eligible properties identified within the APE for Alternatives 1 through 8. For further information about individual resources identified in the table, refer to **Section 3.8.3 Historic Buildings** and the **SH 130 Historic Buildings Report, Volumes A-C** (under separate cover).

Table 4.13-2 Impacts to Historic Properties by the SH 130 Build Alternatives

Site Number	Alternative	Proximity	Type of Impact ^a	Effect	4(f) Issue
6	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
19	2*, 5, 6, 7	APE	Indirect	Adverse	No
20	2*, 5, 6, 7	APE	Indirect	Adverse	No
23a and b	1, 3, 4, 8	ROW	Direct	Adverse	Yes
24a	1, 3, 4 8	APE	Indirect	Adverse	No
25B	2*, 5, 6, 7	APE	Indirect	Adverse	No
25C	2*, 5, 6, 7	APE	Indirect	Adverse	No
40	2, 4, 5, 8	APE	Indirect	Adverse	No
45 (NRHP)	1, 3, 6, 7	APE	Indirect	Adverse	No
49	1, 3, 6, 7	APE	Indirect	Adverse	No
50c, d, and e	1, 3, 6, 7	APE	Indirect	Adverse	No
55	2*, 4, 5, 8	APE	Indirect	Adverse	No
56A	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
67	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
69	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
75	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
79	1, 2*, 3, 4, 5, 6, 7, 8	APE	Indirect	Adverse	No
89	1, 4, 5, 6	APE	Indirect	Adverse	No ^a
96	1, 4, 5, 6	APE	Indirect	Adverse	No
97b	1, 4, 5, 6	APE	Indirect	Adverse	No
99	1, 4, 5, 6	ROW	Direct	Adverse	Yes ^a
104	1, 4, 5, 6	APE	Indirect	Adverse	No

Table 4.13-2 Impacts to Historic Properties by the SH 130 Build Alternatives
- continued -

Site Number	Alternative	Proximity	Type of Impact ^a	Effect	4(f) Issue
107	1, 4, 5, 6	APE	Indirect	Adverse	Yes ^b
108	1, 4, 5, 6	ROW	Direct	Adverse	Yes ^b
109	1, 4, 5, 6	ROW	Direct	Adverse	Yes ^b
110	1, 4, 5, 6	ROW	Direct	Adverse	Yes ^b
115	1, 4, 5, 6	APE	Indirect	Adverse	No
121	1, 4, 5, 6	APE	Indirect	Adverse	No
126B	1, 4, 5, 6	APE	Indirect	Adverse	No
129	1, 4, 5, 6	APE	Indirect	Adverse	No
132	1, 4, 5, 6	APE	Indirect	Adverse	No
139	2*, 3, 7, 8	APE	Indirect	Adverse	No
155	2*, 3, 7, 8	APE	Indirect	Adverse	No
156B	2*, 3, 7, 8	APE	Indirect	Adverse	No
169	2*, 3, 7, 8	APE	Indirect	Adverse	No

**Preferred Alternative*

Notes:

^aResource location was inaccessible for detailed inspection and documentation during the field investigations. Thus, the impact assessment is based on a worst-case assumption that the resource is National Register eligible.

^bThis resource site is a component of a possible National Register historical district. Thus, either type of impact, direct or indirect, may require Section 4(f) evaluation.

As indicated in **Table 4.13-2**, the SH 130 study corridor contains 34 sites that are eligible for listing on the National Register and one site that is already listed. When a site of National Register eligibility is to be directly impacted, a Section 4(f) evaluation must be undertaken in order to determine whether there are any prudent alternatives to the proposed action, and to document plans to minimize harm to the resource. Of the 35 sites noted above, none will be directly impacted by Alternative 2 (the Preferred Alternative) and therefore Section 4(f) evaluations are not required. The eligible properties which are indirectly impacted by the proposed roadway similarly will not require Section 4(f) evaluations. The **SH 130 Historic Buildings Report** (under separate cover) presents more information pertaining to the historical associations and boundaries of the properties that are eligible for the National Register.

4.13.3 Toll Road Considerations

Construction and operation of SH 130 as a toll road is not expected to either increase nor decrease the potential for impacts to historic properties. Toll plazas, depending on their location, could have adverse effects on NRHP properties.

4.13.4 Summary

Potential impacts to historic properties, both architectural and archeological, resulting from the SH 130 alternatives are summarized in **Table 4.13-3**.

Table 4.13-3 Summary of Impacts to Historic Properties by the SH 130 Build Alternatives

Alternative	Number of NRHP Eligible Historic Sites Requiring Section 4(f) Involvement	Number of Eligible NRHP Prehistoric or Historic Archeological Sites Adversely Affected
No-Action	None	None
1	6	6 ^a
2*	0	3
3	1	6 ^a
4	6	6 ^a
5	5	3
6	5	3
7	0	3
8	1	6 ^a

**Preferred Alternative*

Notes:

^a One of these sites, the Kenney Fort, is currently listed in the NRHP.

Of the build alternatives, Alternatives 2 (Preferred Alternative) and 7 would directly affect no Section 4(f) properties. Alternatives 2, 5, 6 and 7 would affect the least number of prehistoric archeological sites with known potential to be eligible for the NRHP. No formal eligibility determinations have yet been made on these sites. All three have been recommended for further archeological investigations based on the original survey. Two additional known sites whose

NRHP eligibility is undetermined will be impacted by Alternative 2. Ten additional sites whose formal NRHP eligibility is undetermined, but which are probably ineligible based on an evaluation of the survey data, will be impacted by Alternative 2. After right-of-way has been acquired for the proposed action, an archeological pedestrian survey with subsurface probing in high potential areas to locate buried, intact archeological sites is recommended for undisturbed areas within the APE. The type and amount of work required will be coordinated by TTA and the TxDOT-Environmental Affairs Division with the SHPO, in compliance with Section 106 of the NHPA and the TAC, and in accordance with the protocol found in **Appendix F**.

4.14 HAZARDOUS MATERIAL SITES

The actual construction of the proposed action poses very little risk of hazardous waste contamination of the environment. Hazardous waste impacts associated with the proposed action will more likely be associated with currently operating sites and facilities or historical sites and facilities that have already impacted the existing environment or have the potential to impact the existing environment. Facilities such as these that are located within the selected right-of-way will be acquired by TTA and secured in accordance with TxDOT policies and applicable state and federal laws to ensure that no contaminants are released to the environment. Prior to right-of-way acquisition it is recommended that a Phase I Environmental Site Assessment (in accordance with the most current ASTM Standards), be conducted for the right-of-way of the Preferred Alternative, once selected, or at a minimum for each site and/or facility that has known or potential occurrences of hazardous materials. Based on the results of the Phase I Environmental Site Assessment, sampling and analysis activities and, possibly, remedial activities may be warranted at certain sites or facilities.

The majority of the identified hazardous material sites discussed previously in **Section 3.9** are registered underground storage tank sites, of which one facility is listed as the location of a leaking underground storage tanks. In addition, several of the identified hazardous material sites are above ground storage tank sites and one facility is listed as a transporter of hazardous waste.

4.14.1 No-Action Alternative

The No-Action Alternative will have no impact on hazardous material sites.

4.14.2 Build Alternatives

A total of eleven hazardous material sites were identified along the right-of-way of the build alternatives. Underground storage tanks (USTs) are located at nine of these sites. One of the UST sites is also the location of a leaking underground storage tank (LUST). Aboveground storage tanks are located at two sites, and one site is listed as a facility of a transporter of hazardous waste. Each of the eight build alternatives would impact either seven or eight hazardous material sites (see **Table 4.14-1**).

Table 4.14-1 Estimated Number of Hazardous Material Sites Impacted by the SH 130 Build Alternatives

Facility Type	Build Alternatives							
	1	2*	3	4	5	6	7	8
USTs	5	5	5	5	5	5	5	5
USTs and ASTs	1	0	0	1	1	1	0	0
USTs and LUST	1	1	1	1	1	1	1	1
ASTs	0	1	1	0	0	0	1	1
Hazardous Waste Transporter	0	1	0	1	1	0	0	1
Total	7	8	7	8	8	7	7	8

*Preferred Alternative

Note: UST=underground storage tank; AST=above ground storage tank; LUST=leaking underground storage tank.

4.14.2.1 Hazardous Material Sites Overview

The hazardous material sites identified along the right-of-way include facilities with underground storage tanks, aboveground storage tanks, and a facility involved in the transport of hazardous waste. Each of these facilities may be acquired for right-of-way purposes. All USTs identified within the acquired right-of-way will need to be removed from the ground prior to construction activities. These closure activities should be in accordance with regulations established by TxDOT and the Texas Natural Resource Conservation Commission (TNRCC).

The facility listed as the site of a leaking underground storage tank is reported to have impacted soil at the site and is currently under investigation by the TNRCC. It is recommended that the TNRCC be informed of the proposed action to expedite the site investigation and any remediation that may be necessary at the site.

The aboveground storage tanks located within the right-of-way should be dismantled or otherwise removed from the site. If the tanks are to be removed from service the tank material should be disposed or recycled at an authorized facility.

The facility involved in the transport of hazardous waste does present a slight risk to the project owner. Activities performed at the facility, including the temporary storage of hazardous waste, may have impacted the soil and/or ground water beneath the site. It is recommended that each of the hazardous material sites be investigated prior to right-of-way acquisition to assess the impact to the existing environment.

4.14.2.2 Well Sites

A total of 104 well sites have been drilled within the study corridor. The operators, as identified by Railroad Commission of Texas (RCT) records, are responsible for the plugging of any abandoned wells and/or the remediation of polluted well sites associated with their exploration activities. However, if these wells and/or unrecorded wells that were not discovered are damaged during construction activities of the proposed action, then the project owner would be responsible for correcting the damage and cleaning any pollution as a result of the damage.

4.14.3 Toll Road Considerations

Construction and operation of SH 130 as a toll facility is not expected to have any unique impacts on hazardous material sites.

4.15 IMPACTS TO VISUAL AND AESTHETIC QUALITY

4.15.1 No-Action Alternative

The No-Action Alternative will not result in a visual impact nor will it affect the overall aesthetic quality of the landscape of the SH 130 corridor.

4.15.2 Build Alternatives

Each of the eight build alternatives will result in the introduction of major highway into a part urban and part rural area that will alter the local landscape, and due to the length and width of SH 130, the proposed roadway will have some effect on the aesthetic quality of the surrounding area. However, the project will be designed to be aesthetically pleasing so as to minimize any perceived denigration of the visual landscape.

Visual impacts may be most obvious in the more rural areas of the SH 130 corridor, and residents in these areas may be most affected. Previously unobstructed views of rolling hills, farmland, or stream or river riparian zones will be replaced in some cases by the proposed six lane highway facility. The impact of such an intrusion is subjective, however, and entirely dependent on each resident's perception of aesthetic quality. Residents in more developed areas may also be similarly affected by the introduction of the proposed facility into their area.

In order to enhance the operational efficiency and visual appeal of the proposed facility, the Texas Turnpike Authority intends to sponsor a SH 130 design charrette (described in the **Executive Summary**). The charrette, which is not an element of the traditional project development process, will serve as a forum for involving key members of the community, staff of THC, and the public in the decision making process to minimize harm with regard to such design details as roadway aesthetics, landscaping, scenic easements and bicycle and pedestrian-related issues. The charrette will be held during the design phase of project development, after the environmental process is complete and the route has been established. The goal of the charrette will be to mold SH 130, through active public participation, into a functional, aesthetically pleasing roadway that will enhance the regional roadway network as well as the communities it serves.

4.15.3 Toll Road Considerations

The designation of SH 130 as a toll road would not add to the visual impacts created by the highway itself. The opportunity exists to design the toll plazas in an aesthetically pleasing manner so as to minimize any perceived denigration of the visual landscape. To the extent feasible and without compromising safety, toll plaza lighting will be designed to be non-intrusive, thereby minimizing impacts to night visuals.

4.16 ENERGY REQUIREMENTS

4.16.1 No-Action Alternative vs. Build Alternatives

A detailed energy analysis has not been conducted for this study. However, certain generalizations can be applied to the study corridor to estimate the effect of the proposed action with respect to energy expenditures. Transportation related energy is usually separated into two main categories: direct energy, which is the fuel consumed by vehicles traveling on the road; and indirect energy, which is the energy associated with the operation, construction, and maintenance of the road itself. The No-Action Alternative would not require the use of these energy resources, whereas these and other energy resources, such as petroleum fuel, lubricants, and paving products, would be used for the construction of any of the eight build alternatives. In contrast, the energy required by the No-Action Alternative would come in the form of increased consumption due to congestion and deterioration of the existing transportation network. In addition, under heavy traffic conditions automobiles use up to three times more energy to travel a given distance when compared to normal conditions.¹⁶³ Therefore, the overall amount of energy resources saved by the proposed action over its design life, due to improved traffic flow on other area roadways, is expected to at least compensate for the energy resources required for its construction and maintenance.

4.16.2 Mineral and Energy Resource Impacts

4.16.2.1 No-Action Alternative

No impacts to mineral or energy resources are expected with the No-Action Alternative. No gravel or other type of mineral mining operations would be interrupted, nor would any oil or gas wells be displaced.

4.16.2.2 Build Alternatives

No impacts to mineral or energy resources are expected as a result of the proposed action. No gravel or other type of mineral mining operations would be interrupted, nor would any oil or gas wells be displaced.

¹⁶³Texas Department of Transportation – Lubbock District, 1993.

4.16.3 Toll Road Considerations

The designation of SH 130 as a toll road may require additional consumption of energy resources, due to the stop-and-go nature of toll plazas, but overall, this is not expected to result in an adverse impact to energy resources. The toll designation will allow the roadway to be built much sooner than with traditional funding; thus, network congestion relief will occur sooner. This relief will result in energy consumption reductions which may offset that described here.

4.17 CONSTRUCTION PHASE IMPACTS

4.17.1 No-Action Alternative

Construction-related impacts would not occur with the No-Action Alternative.

4.17.2 Build Alternatives

4.17.2.1 Air Quality Effects From Construction

Construction phase air emissions will primarily take the form of fugitive dust from earth-moving operations and diesel emissions from heavy construction equipment. Fugitive dust from construction activities are essentially identical to naturally occurring windblown fugitive dust. Emissions are temporary at any single location, are typically widely distributed over the construction site, and are composed of relatively large-sized particles. Dust levels can be constrained by limiting soil disturbance to those areas absolutely necessary for construction, sprinkling with water, temporary seeding of construction areas, and prompt permanent revegetation after construction activities have ceased. On a short-term basis, if fugitive dust becomes a nuisance, for example on dry, windy days with high construction activity, the construction sites can be watered as necessary to reduce the dust to an acceptable level.

Diesel emissions from heavy equipment are expected to have an insubstantial impact due to the low number of sources and their wide distribution over the site. Hydrocarbons and other components of diesel emissions are toxic at sufficiently high concentrations, but the concentrations of diesel exhaust at the proposed roadway construction sites are expected to be very low, and will pose negligible risk to public health. These risks can be further minimized by ensuring that

contractors comply with requirements for proper maintenance of engines, mufflers, and other pollution control equipment.

4.17.2.2 Noise Effects From Construction

Construction activities for the proposed roadway can be categorized into two basic activities: site preparation and roadway construction. It is difficult to accurately predict levels of construction noise at a particular receiver or group of receivers. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. The duration of daily construction normally occurs during the daylight hours when occasional loud sounds are more tolerable. Since the exposure period imposed on any one receiver is relatively short, extended disruption of normal activities is not considered likely.

Provisions will be provided in the project plans to require the contractor to make reasonable efforts to minimize construction noise through abatement measures, such as work hour controls and maintenance of equipment muffler systems.

4.17.2.3 Water Quality Effects From Construction

With respect to potential surface water contamination due to erosion and sedimentation, the critical time period occurs between the removal of existing vegetation to begin site work and the completion of construction and revegetation. There are numerous activities associated with construction that accelerate the rate of erosion. Virtually all of these activities involve the removal of vegetation and/or the movement of soil to provide a construction site.

Without appropriate Best Management Practices in place, waterways adjacent to and downstream from construction sites can be adversely impacted by erosion and sedimentation. The most obvious damage is physical, where the effect can be seen as gullies or rills cutting across the affected area. Sediment loss resulting from erosion can provide a medium for unwanted vegetative growth in the waterway, resulting in slowing of the natural flow of water and deposition of more sediment. Subsequent to this physical change, the ecological relationships in the water and the substrate are disrupted or destroyed.

Protection of the water quality, veneer alluvial aquifer recharge flood control, ecological, and other functions of the natural drainages adjacent to SH 130 should be a high priority in the detailed engineering design phase for the proposed action. The most effective method to protect water quality during construction is to limit the extent of the natural vegetation that is disturbed, significantly reducing the volume of material eroded from the site. Planning the necessary locations of disturbance and restricting construction traffic to those locations will significantly reduce overall damage to native vegetation and reduce erosion. Promptly revegetating any disturbed area at the end of the construction sequence will also reduce erosion. Construction activity should be planned to progress as rapidly and completely as possible to reduce the amount of time during which there is a high potential for erosion.

During construction process itself the use of erosion and sedimentation control strategies is critical in substantially reducing the effects of erosion. Particular attention should be given to sensitive areas, including crossings of water courses and wetlands. Common mitigative measures include the use of temporary holding ponds, silt fences, diversion dikes, rock berms, sediment containment basins, and revegetation. The effectiveness of these measures is dependent upon proper utilization of the technology. The use of crushed stone access drives at specific points of ingress to the construction area will further reduce the amount of sediment transported offsite. Temporary slope stabilization practices, such as application or installation of straw mulch, mulch netting, or synthetic matting will reduce sediment transport in sloped areas. As construction is completed for specific segments of the highway, revegetation should be performed to reduce the amount of time required to reestablish natural vegetative cover. Texas Department of Transportation construction phase specifications will provide contractors and supervising engineers with detailed guidance for the implementation of protective measures. These specifications include Items 162 (Sodding for Erosion Control), 164 (Seeding for Erosion Control), 169 (Soil Retention Blanket), 190 (Roadside Planting), and 506 (Temporary Erosion, Sediment, and Water Pollution Control).

TTA will comply with the EPA National Pollutant Discharge Elimination System General Permit for Industrial Activity. This will be accomplished by filing a Notice of Intent to be covered under the General Permit, and the formulation and implementation of a Storm Water Pollution Prevention Plan before construction operations begin. Additionally, a Water Pollution Abatement Plan (WPAP) will be implemented consistent with TNRCC standards for construction within the Edwards Aquifer Recharge Zone and 30 TAC § 213.5.

4.17.2.4 Construction Impacts on Vegetation

Vegetation communities within the proposed action's right-of-way will be directly impacted by heavy machinery such as bulldozers. Clearing will be minimized to the extent practical. Areas within the right-of-way, but outside the area needed for construction, will not be disturbed. The areal extent of vegetation communities potentially impacted by the alternatives ranges from about 4,500 to 4,800 acres. In addition to direct machinery impacts, adjacent vegetation can be affected by dust, erosion and/or sedimentation. Impacts to vegetation communities adjacent to the proposed action will be minimized through an efficient construction schedule and the implementation of Best Management Practices throughout the period of peak disturbance prior to revegetation.

4.17.2.5 Pedestrian and Vehicular Safety

Construction activities may pose increased risks to pedestrians, particularly children, in areas which pass in close proximity to residential areas. The introduction of a construction site to a rural or suburban area could pose safety risks associated with construction vehicles, excavation hazards, flammable liquids, and unfamiliar traffic patterns arising from road closures or detours. To insure pedestrian safety, ample width for construction activities will be provided, properly equipped machinery will be employed, temporary or permanent fencing will be erected, and guidelines for equipment operators and supervisors will be enforced. Steps will be taken to control access to construction zones by pedestrians, especially children.

With respect to vehicular safety, the use of flag persons, signs, barricades, and the restriction of construction activities to daylight hours when feasible will substantially reduce the risk of vehicular accidents during the construction period.

4.17.2.6 Construction Equipment Impacts

The impacts from hazardous material use and handling during construction activities associated with the proposed action pose a minimal risk of impacts to the environment. Temporary ASTs and equipment, vehicles, and machinery that contain oil and use diesel fuel are typically utilized during major construction projects. Typical impacts would include leaking valves, hoses, or small spills that may occur during refueling activities associated with ASTs or small leaks that may occur from equipment, vehicles, and/or machinery. However, these impacts would be minimal and typically do not pose a significant risk to the environment.

4.17.2.7 Construction Impacts on Soils

To some extent construction of the roadway will result in the compaction of soils and clearing of vegetation, which can increase the amount of erosion and sedimentation. Slope, soil texture, and precipitation during the construction phase will determine the ultimate soil loss. Erosion and sediment control measures will be implemented to minimize soil loss and transport during the construction phase. To the maximum extent possible, material excavated for roadway cuts will be used as fill material in others areas where required. If suitable soils are not found within the right-of-way, they will be obtained from other sites within a reasonable haul distance from the project. Detailed investigations of soils suitable for highway construction will be conducted during the final design phase for the proposed action.

4.17.3 **Toll Road Considerations**

Construction phase effects would be similar under the toll scenario and a toll-free scenario. The timing of construction impacts could vary, since construction of an ultimate, non-toll facility may occur after the toll revenue bonds were repaid, in the event SH 130 is constructed as a toll facility.

4.18 **SECONDARY AND CUMULATIVE IMPACTS**

Construction of the proposed highway will create some secondary impacts that result indirectly from the existence and operation of the new highway. They are not a direct result of construction or operation, but can be expected to occur due to reasonably foreseeable related activities. Potential secondary impacts include:

- As access to study area land becomes more convenient, more areas will become practical and economically feasible for development and land use changes will occur.
- Runoff increases due to changes in land use and increased development on land surrounding the proposed facility.
- Increased sedimentation of wetlands and streams and decreased water quality due to future development of land adjacent to the new facility.

- Loss of wildlife habitat and decreased habitat value in areas of increased residential and commercial development.
- Impact to cultural resource sites from development projects on private property that do not require cultural resource investigation because public funds or permits are not required.
- Increased use of parks due to more convenient access.
- Continuing changes in the pastoral aesthetic quality of rural areas as future development takes place.
- Stimulation of the local economy from an increased work force due to highway construction and development stemming from the new facility.
- Increases in population in the smaller communities of Caldwell and Guadalupe counties may create more demand for local services.
- Changes in land use and conversion of farmland and forests to other uses as more areas near the highway become easily accessible and more attractive for residential or commercial development.
- Need for additional utilities as population increases and land uses change.
- Loss of unregulated native prairie remnants.

4.18.1 Secondary Impacts

4.18.1.1 Land Use

As discussed in **Section 4.1.2.2**, construction of SH 130 may indirectly affect land use within the corridor by helping to enhance land development opportunities. However, SH 130 is only one factor in creating favorable land development conditions; other prerequisites for growth within the corridor include demand for new development, favorable local and regional economic conditions, adequate utilities, and supportive local land development regulations and policies.

Nevertheless, the SH 130 build alternatives may contribute to secondary social, economic and environmental impacts. These impacts have already resulted from development activity that has and continues to occur within the corridor, especially in the northern portion. Development impacts – both beneficial and adverse – will continue to be felt within the corridor regardless of whether or when SH 130 is built. Efforts to enhance beneficial aspects and minimize adverse effects of development are subject to the existing land use and development controls of the local jurisdictions throughout the corridor. **Table 4.18-1** summarizes the various land use controls in place within the SH 130 study corridor.

Table 4.18-1 Land Use Guidelines and Controls by Jurisdiction in the SH 130 Corridor

Jurisdiction	Comprehensive Plan*	Zoning	Subdivision Regulations	Site Plan Permitting**	Building Permitting
Williamson County	N	N	Y	N	N
Georgetown Incorporated Area	Y	Y	Y	Y	Y
Georgetown ETJ	Y	N	Y	N	N
Round Rock Incorporated Area	Y	Y	Y	Y	Y
Round Rock ETJ	Y	N	Y	N	N
Travis County	N	N	Y	Y	Y
Pflugerville Incorporated Area	Y	Y	Y	Y	Y
Pflugerville ETJ	Y	N	Y	Y	N
Austin Incorporated Area	Y	Y	Y	Y	Y
Austin ETJ	Y	N	Y	Y	N
Austin Limited Purpose Annexation Areas	Y	Y	Y	N	Y
Mustang Ridge Incorporated Area	N	Y	Y	Y	Y
Mustang Ridge ETJ	N	N	Y	Y	N
Caldwell County	N	N	Y	N	N
Lockhart Incorporated Area	Y	Y	Y	Y	Y

Table 4.18-1 Land Use Guidelines and Controls by Jurisdiction in the SH 130 Corridor

Jurisdiction	Comprehensive Plan*	Zoning	Subdivision Regulations	Site Plan Permitting**	Building Permitting
Lockhart ETJ	Y	N	Y	Y	N
Guadalupe County	N	N	Y	N	N
Seguin Incorporated Area	Y	Y	Y	Y	Y
Seguin ETJ	Y	N	Y	Y	N

* The comprehensive plan is not necessarily an enforceable document. Often, it is an enabling policy document.

** Some jurisdictions have stormwater detention requirements or water pollution abatement plans. For areas within the Edwards Aquifer region, water quality protection measures are in place and enforced by the state environmental regulatory agency, TNRCC.

Sources: Gray, 1998; Hauch, 1998; Heiligenstein, 1998; Meadows, 1998; Simon, 1998; Hill Country Foundation 1995; Koenig, 1998.

4.18.1.2 Water Quality

Some long-term water quality impacts of the SH 130 build alternatives have nothing to do with the construction, operation, or maintenance of the road per se. Instead, impacts may be generated indirectly by the development facilitated by the location of the road. Highway interchanges near metropolitan areas become nodes for commercial development. Residential development, in turn, is more viable within a certain radius of these interchanges/nodes. As this commercial and residential development occurs, new chains of activities and impacts are begun – all of which are in varying degrees stimulated by the presence of the highway, which provides a transportation artery to centers of work and of commerce. Examples of secondary impacts include the effects on surface water and groundwater quality as an area is developed. Water quality may be impacted by low-quality runoff from paved areas and by wastewater discharged into the environment with various levels of treatment. Likewise, the quantity of available groundwater may be impacted where development occurs beyond areas served by water-supply utilities.

4.18.1.3 Ecology

Secondary impacts to ecological systems could result from the operation and maintenance of SH 130, and from the secondary land development which will accompany it. As discussed in **Section 4.10 Water Body Modification; Vegetation and Wildlife Impacts**, vegetation communities would be impacted on a landscape scale by fragmentation (in areas where

no roadways currently exist) and loss of habitat continuity. These types of impacts could easily affect the processes and functioning of communities including seed dispersal, reproductive activities and the cycling and transfer of nutrients. Additional losses of vegetation will also be incurred if secondary land development takes place.

4.18.2 Cumulative Impacts

The Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) define cumulative effects as

...the impact on the environment which results 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.¹⁶⁴

There are a number of actions that have been (or are likely to be) undertaken by federal and non-federal agencies and persons that, when combined with proposed SH 130, will have cumulative impacts on the environment. For example, the federal government's North American Free Trade Agreement (NAFTA) trade policies, and the commercial and trucking interests that are acting in response to those policies, have substantially contributed to increased congestion on I-35 in recent years and will generally benefit from the I-35 congestion relief provided by SH 130. This will result in positive economic effects as congestion levels on I-35, an international trade corridor, are reduced. SH 130 will combine with other substantial public and private investments, such as the development of Austin-Bergstrom International Airport and the potential redevelopment of Kelly Air Force Base, to cumulatively affect the Austin-San Antonio corridor economy.

Another type of cumulative effect involves improvements to the regional transportation system. For example, TTA and FHWA are now constructing SH 45, an approximately 15 mile controlled access east-west highway through the rapidly urbanizing area of northern Travis/southern Williamson counties in the north Austin area. State Highway 45 – a candidate toll road – extends from Anderson Mill Road just west of US 183 in Williamson County to FM 685 east of I-35 in

¹⁶⁴40 CFR§1058.7, Council on Environmental Quality, 1997. Past projects, or those implemented on or built before 1999, can be considered to be part of the existing condition environmental baseline. Included within the concept of past projects are all land developments, roadways, utilities, and other actions that occurred before work began on the SH 130 DEIS.

Travis County. Near its eastern terminus, SH 45 would interchange with all SH 130 build alternatives. Combined, the two potential toll roads would connect to other planned toll facilities in northern Travis County and southern Williamson County, such as US 183-A and an extension of Loop 1, both west of I-35. Cumulative effects of this network of new toll facilities in Travis and Williamson counties would include improvements to local and regional travel conditions as well as increased mobility and access within the Travis/Williamson County region. The construction of these four proposed transportation facilities – SH 130, SH 45, US 183-A, and Loop 1 – will also result in the cumulative loss directly of important farmland (an estimated 4,532 acres), and a cumulative number of residential relocations (a total of 186 residences). Adequate farmland and sufficient housing is available within Williamson and Travis Counties. Other potential transportation improvements within the region – roadways, public transportation, TSM/TDM measures, commuter rail, and light rail – will cumulatively improve local and regional travel conditions within the Austin-San Antonio corridor, which in turn will help to sustain growth in the region.

Development associated with non-governmental entities is planned throughout the SH 130 corridor. In particular, Dell Computer Corporation has plans to add additional capacity at their campus located along Louis Henna Boulevard (which SH 45 would replace). Numerous platted subdivisions are proposed for the corridor, as noted previously.

Planned and future development could substantially impact several resource categories within the SH 130 corridor over the life of the facility. Relevant categories which must be evaluated include impacts to social/community groups, water quality, ecological resources and air quality, as discussed below.

4.18.2.1 Social/Community Issues

As previously discussed, portions of the SH 130 corridor are expected to see continued urbanization as the communities of Georgetown, Round Rock, Pflugerville, Austin, Lockhart and Seguin grow, guided by their respective comprehensive plans. The cumulative impacts of continuing development within the corridor will be both beneficial and adverse. Beneficial effects include new economic opportunities, housing alternatives, employment, services, and recreational resources. As development occurs, the need for additional infrastructure and services (transportation, utilities, fire, police, emergency medical services, etc.) will increase. Potentially adverse cumulative effects include loss of habitat, water quality impacts, and the conversion of agricultural land associated with the continued urbanization within the SH 130 corridor .

4.18.2.2 Water Quality Issues

Cumulative impacts on water quality will be minimized by adherence to water quality protection regulations during construction. These include the NPDES requirements for completion and implementation of a Storm Water Pollution Prevention Plan (SW3P) to minimize construction related impacts and preparation of a Water Pollution Abatement Plan (WPAP) for projects over the Edwards Aquifer Recharge Zone. Adherence to these rules is designed to offset any adverse effects associated with on-going development within the corridor.

4.18.2.3 Ecological Resource Issues

Past development in the corridor has resulted in loss of natural habitats through residential and commercial development; habitat fragmentation from infrastructure construction or changes in land use; and disruption of fish and wildlife populations. The cumulative impacts of future developments will involve a continuation of this longstanding situation.

Impacts to wetlands and threatened/endangered species within the corridor would be avoided or minimized by compliance with existing federal statutes which apply to private as well as public developments. The U.S. Army Corps of Engineers (under the Clean Water Act) and the U.S. Fish and Wildlife Service (under the Endangered Species Act) have legislative mandates to reduce or avoid significant, adverse impacts to protected resources on an individual as well as a cumulative project basis. No significant, adverse effects on protected ecological resources are anticipated as a cumulative consequence of continuing historic development patterns.

4.18.2.4 Air Quality Issues

As previously discussed, planned transportation improvements in the SH 130 corridor are intended to cumulatively reduce congestion on a regional scale, with a resultant decrease in air pollution. Private developments in the area are generally non-industrial generators which would not produce air emissions. Thus, the proposed actions may have a cumulatively beneficial impact on air quality.

4.18.3 Toll Road Considerations

Because the time frame for constructing SH 130 is likely to be accelerated as a result of toll revenue financing, the secondary impacts triggered by construction of SH 130 may also be accelerated. Operation of the facility as a toll road, however, will neither increase nor decrease the probability of secondary social, economic and environmental impacts. A cumulative economic effect could be felt by commuters and other motorists who utilize the system of toll roads under development by TTA in Travis and Williamson Counties. Travel patterns that include the combined use of SH 130 with SH 45, Loop 1 or US 183-A will face multiple toll charges.

4.19 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

4.19.1 No-Action Alternative

The short-term impacts associated with the No-Action Alternative are inconsistent with the maintenance and enhancement of long-term local, state and national productivity. Short-term impacts include increasing levels of traffic congestion on I-35 and other major transportation facilities, a continuation of poor mobility, and a continuation of limited accessibility for important public facilities within the Austin-San Antonio corridor. These impacts are not consistent with national trade policy (NAFTA) objectives, they hinder the growth patterns and policies of local jurisdictions, and they limit the functionality of major public facilities such as Austin-Bergstrom International Airport and Kelly Air Force Base. Because approximately 3,400 to 4,100 acres of farmland would not be converted to transportation uses, the No-Action Alternative will also maintain a certain amount of farming and ranching productivity.

4.19.2 Build Alternatives

Implementation of the proposed action will have a number of short-term effects for all eight build alternatives. The operation of construction machinery and equipment will cause short-term effects on surrounding populations, including elevated noise levels, traffic interruption and safety risks, dust and hydrocarbon emissions, and potential pollution of surface waters due to sedimentation in runoff from exposed construction sites. Lands adjacent to the proposed roadway

will be affected by construction access and staging of equipment. These impacts are localized, subject to mitigation, and are not expected to last beyond the construction phase.

Longer term effects on the productivity of resources within the SH 130 corridor include the removal of taxable property from the tax rolls of local governmental entities and local school districts. This loss of taxable property is expected to be offset over the long term by the increased value of land near the new roadway. Additionally, construction of SH 130 is expected to directly support roughly 63,000 to 66,000 person-years of employment statewide and approximately \$1 billion in total income and \$4.35 to \$4.51 billion in total output over the construction term.

The proposed action will require the conversion of approximately 5,300 to 5,700 acres of land from its current use to SH 130 right-of-way, effectively removing this land from possible development for the indefinite future. This effect, while not inconsequential, does not amount to a major adverse impact to the resource productivity of the region. Moreover, given the rapid suburban growth in the area, it is likely that much of this acreage will be subject to conversions whether or not the proposed SH 130 is constructed.

In general terms, any of the build alternatives will involve short-term impacts, such as residential relocation, due to construction of the project. However, traffic growth, congestion delays, and increasing accident rates along existing transportation routes in the SH 130 corridor make these improvements an urgent matter. The build alternatives are consistent with state and local plans, programs, and policies to improve overall access to the area over the long term. Thus, the short-term impacts associated with the SH 130 build alternatives are consistent with the maintenance and enhancement of long-term productivity for the state and local area.

4.19.3 Toll Road Considerations

Development and operation of SH 130 as a toll facility is not expected to differ appreciably from that of a toll-free facility in terms of the relationship between local short-term use of man's environment and the maintenance and enhancement of long-term productivity.

4.20 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

4.20.1 No-Action Alternative

The No-Action Alternative would not require the commitment of any resources associated with the construction of the proposed action.

4.20.2 Build Alternatives

Constructing any of the build alternatives involves the commitment of a range of natural, human, physical, and fiscal resources. The 5,300 to 5,700 acres of land required for construction of the facility represents an irreversible commitment during the time the land is used for transportation purposes. However, this land can be converted to another use later if it becomes necessary or desirable.

Major amounts of fuel, labor, steel, cement, and rock aggregate are expended for the type of facility proposed. These materials are not generally retrievable. These materials are not in short supply and their use is not expected to adversely affect their continued availability.

These commitments of resources are made based upon the belief that citizens of the State, and especially the Central Texas region will benefit from an improved transportation system. These benefits include congestion relief, improved mobility and access and increased safety. These benefits outweigh the cost required to implement the facility.

4.20.3 Toll Road Considerations

If SH 130 is operated as a toll facility, state and federal funds expended for construction will be retrieved and repaid through the collection of tolls. For any portion of the roadway constructed by TxDOT as part of the non-toll highway system, repayment may not be necessary.

4.21 PREFERRED ALTERNATIVE

This section of the SH 130 FEIS has described social, economic, and environmental impacts of the proposed alternatives, including the No-Action Alternative. A comparison of the alternatives follows, including an analysis of how well each alternative meets the stated purpose and need for the proposed action and addresses the other transportation goals and objectives presented

in the first two sections of this document. This section concludes with the rationale for identifying a Preferred Alternative.

4.21.1 Comparison of Alternatives

The preceding discussion of social, economic and environmental impacts of the SH 130 alternatives included several categories where the impacts were similar for the various build alternatives. In these cases, a general discussion of the impacts was presented. In other cases, specific impacts were reported for each alternative, allowing for a greater degree of differentiation between alternatives. The following table compares the alternatives against important factors and impact categories that permit distinctions to be made about each alternative.

Table 4.21-1 Comparison of Alternatives

Comparison Factors	Unit of Measure	SH 130 Alternatives								
		No Action	1	2*	3	4	5	6	7	8
Total Length	Miles	0	92.64	90.88	92.44	91.41	91.08	92.31	92.11	91.21
Total Land Converted to SH 130 Right-of-Way	Acres	0	5,687	5,314	5,626	5,602	5,375	5,460	5,399	5,541
Important Farmlands Converted	Acres	0	3,917	3,842	3,781	3,922	3,978	3,984	3,848	3,786
Total Cost (Construction + Right-of-Way)	2000 Dollars (Billions)	0	1.498	1.451	1.513	1.438	1.436	1.496	1.511	1.452
Toll Traffic Utilization	2025 Daily Vehicle Miles of Travel (Millions)	0	5.791	5.764	6.453	6.230	5.296	5.756	5.847	6.115
Cost/VMT	Dollars	0	259	252	234	231	271	260	258	237
Neighborhood Impacts	High/Med/Low	Low	High	Med	High	Med	Med	Med	Med	Med
Residential Relocations	Number	0	162	168	161	156	169	175	174	155
Commercial Displacements	Number	0	23	22	16	23	29	29	22	16
Community/Public Facility Displacements	Number	0	3	0	2	2	1	2	1	1
Noise Receivers Impacted	Number	0	350	176	337	316	174	200	207	319

Table 4.21-1 Comparison of Alternatives
- continued -

Comparison Factors	Unit of Measure	SH 130 Alternatives								
		No Action	1	2*	3	4	5	6	7	8
Consistent with Environmental Justice Order	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hazardous Material Sites Impacted	Number	0	7	8	7	8	8	7	7	8
Impacts to High-Quality Wildlife Habitat	Acres	0	123.1	93.9	111.0	110.9	105.9	118.2	106.1	98.8
Endangered, Threatened, or Proposed Species Adversely Affected	Number	0	0	0	0	0	0	0	0	0
Section 4(f) Properties Involved- Parks	Number	0	2	0	2	0	0	2	2	0
Section 4(f) Properties Involved- Historic Sites	Number	0	6	0	1	6	5	5	0	1

**Preferred Alternative*

Total Length

The average length of the build alternatives is approximately 91.76 miles, with Alternative 2 being the shortest (90.88 miles) and Alternative 1 the longest (92.64 miles).

Total Land Converted to SH 130 Right-of-Way

The average amount of land converted to SH 130 right-of-way by the build alternatives is approximately 5,500 acres, with Alternative 2 being the least (5,314 acres) and Alternative 1 the most (5,687 acres).

Important Farmlands Converted

The average amount of farmlands converted to SH 130 right-of-way under the build alternatives is approximately 3,882 acres, with Alternative 3 being the least (3,781 acres) and Alternative 6 being the most (3,984 acres).

Total Cost (Construction + Right-of-Way)

Alternative 3 is the most expensive alternative at \$1.513 billion. Alternative 5 is the least expensive at \$1.436 billion. The average cost of the build alternatives is about \$1.474 billion.

Traffic Utilization

The build alternatives will experience an average of 5.9 million daily vehicle miles of travel in the year 2025 (under a non-toll scenario). The highest amount of VMT will be on Alternative 3 (6.453 million). The least amount will be on Alternative 5 (5.296 million).

Cost/VMT

Cost per VMT is one measure of cost effectiveness, with the lower the cost per VMT, the more cost-effective the alternative. The average cost per VMT among the build alternatives is \$250. The most cost-effective is Alternative 4 (\$231), and the least cost-effective is Alternative 5 (\$271).

Neighborhood Impacts

Based on **Table 4.3-1**, this is a relative, composite measure of impacts previously presented (including residential relocations, commercial and community facility displacements, proximity effects, noise impacts, visual intrusion, and increased traffic expected on local streets). Alternatives 1 and 3 are expected to have the highest relative degree of neighborhood impacts due to their proximity to urbanizing areas of the corridor. All other build alternatives would have a similar but slightly lower degree of neighborhood impacts, owing to their relative location in less developed areas.

Residential Relocations

On average, the build alternatives are estimated to result in the relocation of 165 residences. Alternatives 4 and 8 would have the least amount of estimated relocations (156 and 155, respectively) and Alternatives 6 and 7 would have the most (175 and 174, respectively).

Commercial Displacements

The build alternatives will displace an estimated average of 23 commercial properties. The fewest estimated displacements are associated with Alternatives 3 and 8, with the most estimated displacements on Alternatives 5 and 6.

Community Facility Displacements

As previously noted, Alternatives 1, 3, 6 and 7 will result in the displacement of the Mercy of God Prayer Center, while Alternatives 1, 3, 4, and 8 will displace two public water storage facilities.

Noise Receivers Impacted

An average of 259 receivers would experience noise impacts as a result of the proposed action. The highest number of impacted receivers – 350 – would be along Alternative 1 and the fewest number along Alternative 5 (174).

Consistency with Environmental Justice Order

All build alternatives are consistent with E.O. 12898, Environmental Justice. The build alternatives do not create any disproportionately high and adverse effects on minority and/or low income populations that cannot be mitigated. The proposed action is similarly consistent with Title VI of the Civil Rights Act of 1964 in that there is no evident discriminatory intent or effect.

Hazardous Material Sites Impacted

Alternatives 1, 3, 6, and 7 will impact seven hazardous material sites. Alternatives 2, 4, 5, and 8 will impact eight hazardous material sites.

Endangered, Threatened, or Proposed Species Adversely Affected

No impacts on endangered, threatened or proposed species are expected by any of the proposed SH 130 alternatives.

Impacts to High-Quality Wildlife Habitat

The amount of high-quality wildlife habitat potentially affected by the proposed action ranges from 93.9 acres (Alternative 2) to 123.1 acres (Alternative 1).

Section 4(f) Properties Involved – Parks

Alternatives 1, 3, 6 and 7 will require property from two public parks. Alternatives 2, 4, 5 and 8 will not require any public park lands.

Section 4(f) Properties Involved – Historic Sites

Alternatives 1, 4, 5 and 6 directly and adversely affect 5 to 6 historic building sites that are eligible for the NRHP. Alternatives 2 and 7 would not directly affect any NRHP eligible sites.

4.21.2 Performance of Alternatives

In identifying a Preferred Alternative, consideration should again be given to the purpose and need for the proposed action (see **Section 1.0 Purpose and Need**). The Preferred Alternative will be that which is best able to

- relieve congestion on I-35 and other major transportation facilities within the Austin-San Antonio corridor;
- improve mobility within the Austin-San Antonio corridor; and
- increase accessibility to important public facilities within the Austin-San Antonio corridor.

As previously discussed, other transportation goals and objectives have been identified for SH 130 that have a bearing on the Preferred Alternative. The Preferred Alternative should

- be a multimodal and intermodal facility;
- have limited access points;
- have a realistic and comprehensive design and financial plan;
- minimize adverse impacts to existing neighborhoods, residences and businesses;
- preserve unique ecological resources; and

- limit the ability of the proposed action to encourage land development in unincorporated areas (i.e., avoid promoting “urban sprawl”).

The following table summarizes how well each alternative performs in achieving the purpose and need for the proposed action, and in addressing the other transportation goals and objectives. This is followed by a brief explanation of how the ratings were derived.

Table 4.21-2 Performance Ratings for SH 130 Alternatives

Performance Categories	SH 130 Alternatives								
	No Action	1	2*	3	4	5	6	7	8
Purpose & Need									
Relieve Congestion	Worst	Worse than Average	Best	Better than Average	Worse than Average	Better than Average	Better than Average	Better than Average	Worse than Average
Improve Mobility	Worst	Worse than Average	Worse than Average	Best	Better than Average	Worse than Average	Worse than Average	Average	Better than Average
Increase Accessibility	Worst	Best	Worse than Average	Best	Average	Worse than Average	Average	Average	Average
Other Goals & Objectives									
Be multimodal and intermodal	Worst	Equivalent							
Feature limited access points	Worst	Equivalent							
Have realistic and comprehensive design and financial plan	Worst	Equivalent							
Minimize impacts to neighborhoods, residences and businesses	Best	Worse than Average	Average	Worse than Average	Average	Average	Average	Average	Average
Preserve ecological resources	Best	Equivalent							
Avoid promoting urban sprawl	Equivalent								

*Preferred Alternative

Relieve Congestion

As discussed in **Section 4.3.4 Impacts to Traffic and Public Safety**, the degree to which SH 130 will relieve future traffic congestion on I-35 and other major transportation facilities depends on which alternative is selected. As shown in **Table 4.3-5**, SH 130 build alternatives will result in lower total average volume per mile for I-35, US 183, and Loop 1 compared to the No-Action Alternative (although some build alternatives actually result in higher volume per mile on Loop 1). The best alternative – the one under which year 2025 average volume per mile for I-35, US 183 and Loop 1 combined would be lowest – is Alternative 2. Relative to all alternatives, Alternatives 3, 5, 6 and 7 perform better than average in relieving congestion; Alternatives 1, 4 and 8 are worse than average.

Improve Mobility

From the discussion in **Section 4.3.5 Impacts to Travel Patterns and Accessibility**, all SH 130 build alternatives appear to improve mobility within the corridor. The highest amount of total average volume per mile in the year 2025 would be carried by Alternative 3. The next highest volumes appear on Alternatives 4 and 8. Alternatives 1, 2, 5 and 6 would carry the least amount of traffic of all the build alternatives.

Increase Accessibility

Access to established trip-generating activities (i.e., residential, retail, commercial, and industrial areas) is best achieved by Alternatives 1 and 3, which are located nearest to the corridor's urban areas and major employers such as Samsung Austin Semiconductor and Dell Computer Corporation. The easternmost alternatives – Alternatives 2 and 5 – are further away from most of these activity centers. All build alternatives would improve access to Austin-Bergstrom International Airport and Kelly Air Force Base. Most of the build alternatives provide improved access to the Round Rock Express baseball stadium (Dell Diamond) and to the Travis County Exposition and Heritage Center, although Alternatives 2 and 5 do so to a lesser degree due to their eastern locations.

Be Multimodal and Intermodal

All build alternatives feature the same cross-section and design standards, providing a median width capable of accommodating future transportation needs. The median can provide

adequate space for a HOV lane, a light rail transit line, or both. It can also accommodate a freight rail line, but this would preclude the other options. Pedestrian and bicycle facilities can be accommodated on all build alternatives. Linkages between the various modes of transportation – automobile, truck, bus, passenger rail, freight rail, pedestrian and bicycle – can be provided for all SH 130 build alternatives at such time as the additional modes are developed.

Feature Limited Access Points

All build alternatives provide roughly the same amount of access points, located at intersections with major east-west arterial roadways and highways. For all build alternatives, frontage roads are provided primarily to restore property access.

Have Realistic and Comprehensive Design and Financial Plan

All build alternatives are candidate toll roads and are judged equally capable of having a realistic and comprehensive design and financial plan. It is possible that the alternatives with the highest forecasted traffic (i.e., Alternatives 3, 4 and 8) will be easier and more economical to finance than those alternatives with lower traffic. However, until an investment-grade study of toll feasibility is prepared, such a conclusion may not be fully supportable.

Minimize Impacts to Neighborhoods, Residences and Businesses

Many of the comparison factors in **Table 4.21-1** address impacts to neighborhoods, residences and businesses. The proposed action – a 91-mile new location highway, portions of which are located within rapidly developing areas – by its very nature will involve residential relocations, commercial displacements and other forms of neighborhood impacts. Compensatory and other mitigation measures are therefore applied in an effort to minimize such impacts to individual residents, business owners, and neighborhoods. All of the proposed build alternatives have roughly the same degree of impact on residences and businesses, and all of the build alternative impacts involve the same mitigation measures.

Alternatives 1 and 3 have a relatively higher amount of neighborhood impacts (which are generally defined as relocations, proximity effects, noise impacts, visual intrusion, or perceived increased traffic on residential streets). Their locations are in close proximity to developing areas in the SH 130 corridor, and thus will affect existing neighborhoods. However, other build alternatives would have more estimated residential relocations or commercial displacements.

Preserve Ecological Resources

Differences in ecological resource impacts are also negligible among the build alternatives. The conversion of important farmlands is considered insignificant according to the U.S. Department of Agriculture's NRCS with the exception of Alternatives 1, 4, 5, and 6 in Guadalupe County. While some high quality wildlife habitat will be affected by all alternatives, there are no adverse impacts to protected species.

Avoid Promoting Urban Sprawl

The development-inducing effects of new location highways have been previously discussed along with the potential for SH 130 to trigger secondary and cumulative impacts. However, this potential effect of the build alternatives should be understood within the context of other corridor characteristics that have also previously been mentioned: 1) development is already occurring within the SH 130 corridor, at a particularly brisk pace especially in the more urban, northern reaches of the corridor; 2) local government ordinances and regulations within the corridor – and in some cases state regulations – are available to mitigate adverse impacts of land development; 3) much of the corridor falls within the corporate limits and ETJs of the corridor cities; 4) cities and counties that desire to employ the use of scenic easements as a growth management tool will be able to acquire these easements during the right-of-way acquisition phase of project development, and 5) some local governments within the corridor have adopted pro-growth strategies for areas east of I-35, and many have comprehensive development and/or transportation plans which anticipate and even endorse the construction of SH 130. Given this context, it is difficult to conclude that SH 130 would become the agent of unintended and unmanageable growth at the edges of cities within the corridor. The characteristics of the corridor combined with the locally adopted plans and growth management tools make it possible for all build alternatives to avoid encouraging undesirable growth patterns. For these same reasons, the No-Action Alternative is expected to neither advance nor contain growth on the urban fringes within the corridor.

4.21.3 Conclusion

Subsequent to the Draft EIS and Public Hearing for SH 130, TTA prepared new traffic forecasts based on CAMPO's updated 2025 Transportation Plan. In response to issues raised through the public involvement process, TTA also adjusted the alignments of each of the eight build

alternatives. In addition, land use changes within the rapidly developing SH 130 corridor, including recently approved development projects, were mapped so that the Final EIS would be able to document the effects of SH 130 on an up-to-date landscape. Section 106 coordination with the State Historic Preservation Officer (SHPO) also progressed, and more information became available about the status of historic properties throughout the corridor and the potential effect that SH 130 would have on them. All of this information helped guide the selection of a Preferred Alternative for the Final EIS.

The Final EIS identifies Alternative 2 as the Preferred Alternative. Alternative 2 is characterized as the easternmost route in the Round Rock area, the “East Lake” route in the Lake Walter E. Long area, and east in the southern portion of the project corridor. The Draft EIS had identified Alternative 3 as preferred, which features alignments closer to Round Rock and west of the lake. Following are the primary reasons for identifying Alternative 2 as the Preferred Alternative in the Final EIS:

- New travel demand forecasts developed by TTA and based on updated long range transportation plans by the Capital Area Metropolitan Planning Organization (CAMPO) and the San Antonio MPO show that both Alternative 2 and Alternative 3 meet the project’s purpose and need in terms of relieving I-35 traffic congestion.
- Alternative 3 (preferred in the Draft EIS) takes land from two public parks, which under federal regulations requires a finding that there is no reasonable alternative. The Draft EIS stated that the park impacts associated with Alternative 3 were justified because the eastern alternative (Alternative 2) carried substantially less traffic and was therefore considered to be less effective in meeting the project's purpose and need. The new traffic data, which show only a minor difference in 2025 I-35 traffic levels between these two SH 130 alternatives, make it more difficult to conclude that there is no reasonable alternative to taking public park land.
- Alternative 2 has overwhelming public citizen support. It is supported by the City of Austin, City of Round Rock, Travis County, CAMPO Policy Advisory Committee, and other elected officials.

- The social, economic and environmental impacts of the build alternatives remain roughly equivalent. The recent alignment adjustments have improved all alternatives with respect to neighborhood impacts. With the exception of Section 4(f) issues, there is still little variation between the build alternatives with respect to adverse effects.
- Alternative 2, the Preferred Alternative, avoids direct effects on historic properties that are eligible for the National Register of Historic Places. Alternative 3 would have directly affected an NRHP eligible property.

The comparison and relative performance of alternatives discussed above supports identifying Alternative 2 as the Preferred Alternative. Alternative 2 relieves congestion on I-35 and other major transportation facilities. While Alternative 2 is not as good as other alternatives in improving mobility and increasing accessibility to important public facilities, it is as good or better in satisfying other stated goals and objectives. The Preferred Alternative does not require any land from public parks nor involve any taking of properties on or eligible for the National Register of Historic Places. The Preferred Alternative is consistent with the adopted plans, policies or resolutions of Travis County, the City of Austin, City of Round Rock, City of Lockhart, City of Seguin, and CAMPO. While it is not consistent with resolutions adopted in January 1998 by the City of Georgetown, Williamson County, and City of Pflugerville regarding alignment preferences, these entities have not expressed any opposition to the Preferred Alternative.

The Preferred Alternative will have noise impacts, impacts to neighborhoods, require residential relocations, and result in commercial displacements. The Preferred Alternative will also affect vegetation, wildlife, farmland and water quality. Recommendations to minimize or mitigate these and other potential impacts were previously mentioned in this section; additional information about mitigation measures is presented in **Section 5.0 Mitigation Recommendations**.

5.0 MITIGATION RECOMMENDATIONS

The mitigation recommendations presented herein were determined to be appropriate for SH 130 based on experience developing other transportation improvement projects and on general recommendations made by various State and Federal agencies in response to correspondence concerning the proposed action.

Mitigation measures for the Selected Alternative will be considered for both the toll-free and toll road impacts. Current law states that when the debt is retired on the toll road, it is to be converted to a toll-free facility; therefore, if or when this happens, there will be a reevaluation of all environmental impacts attributable to conversion.

5.1 SOCIAL ENVIRONMENT

5.1.1 Pedestrian And Vehicular Safety

To insure pedestrian safety, ample width for construction activities will be provided, properly equipped machinery will be employed, temporary or permanent fencing will be erected, and guidelines for equipment operators and supervisors will be enforced. Steps should be taken to control access to construction zones by pedestrians, especially children. Particular consideration should be given to areas likely to have the greatest pedestrian activity. In addition, the use of flag persons, signs, barricades, and the restriction of construction activities to daylight hours when feasible will substantially reduce the risk of vehicular accidents during the construction period.

After construction, permanent safety measures will be enhanced through efforts of the Texas Traffic Safety Program under the auspices of the Traffic Safety Section of TxDOT. This statewide effort is designed to reduce traffic accidents and increase the safety of the state's roadway system. The Traffic Safety Section, working in conjunction with the National Highway Traffic Safety Administration, is responsible for coordinating programs in numerous areas including: police traffic services and speed control, alcohol and other drug countermeasures/youth alcohol, emergency medical services, occupant protection, traffic records, roadway safety, motorcycle safety, community/corridor and college traffic safety programs and safe communities, public information and education, school bus and commercial truck safety, and pedestrian/bicycle safety. Other safety regulations as proscribed by law will serve to protect both motorists and non-motorists within the state's right-of-way.

5.1.2 Compliance With Uniform Relocation Assistance And Real Property Acquisition Policies Act of 1970, And Other Applicable Standards

It is the policy of TxDOT that no person will be displaced due to right-of-way acquisition until decent, safe, and sanitary replacement housing is available. The available housing must also be open to persons regardless of race, color, religion, or national origin. All relocation efforts will be consistent with the requirements of the Civil Rights Act of 1964 and 1968, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and the Housing and Urban Development Act of 1974. Adequate replacement housing must be within the financial means of displaced families or individuals.

Residential displacees will be provided a decent, safe, and sanitary replacement dwelling that is functionally equivalent to their present dwelling. Although replacement dwellings may not be necessarily identical to their present dwellings, the replacements will have comparable attributes, including a similar number of rooms and living space and adequate size to accommodate the occupants. All replacement housing will meet the minimum requirements established by the State and conform to applicable housing and occupancy codes. If a comparable decent, safe, and sanitary dwelling is not available for all affected persons, housing of Last Resort will be provided.

The TxDOT relocation office will assist each displaced person in securing comparable replacement housing. The TxDOT relocation office will also provide assistance to displaced businesses and nonprofit organizations to aid in their satisfactory relocation with a minimum of delay of services or loss of earnings. Through its relocation offices, TxDOT will maintain contact and exchange information with other agencies rendering services useful to persons and organizations that must relocate. Such agencies include social welfare agencies, redevelopment authorities, public housing authorities, the Small Business Administration, and the Federal Housing and Veterans Administration.

Contact will be maintained with local sources of information on private replacement housing, including real estate brokers, real estate boards, property managers, apartment owners and operators, and home building contractors. The occupants of business establishments and nonprofit organizations are entitled to receive moving costs and related expenses incurred in relocating their personal property. These related expenses include loss of tangible property and expenses involved in searching for a replacement site.

To assure that the public has adequate knowledge of the relocation program, the services and benefits available were discussed at the SH 130 public hearings held on February 10, 2000 in Round Rock, Austin and Seguin. Information was presented in a brochure available in both English and Spanish.

Qualified displacees will be provided with Relocation Assistance Program benefits that are intended to assist the displacee in purchasing or renting comparable replacement housing. They will also receive either an actual moving cost payment or payment of a fixed moving cost based on an eligible room count. Other payments to which they may be entitled are the costs which are incidental to selling property to the State, costs incidental to purchasing a replacement dwelling, and an increased interest differential payment.

5.1.3 Measures to Minimize Impacts to Neighborhoods

TTA will consider the following measures to minimize the impacts of the proposed action on neighborhoods. With respect to visual intrusion and increased noise levels, noise walls and berms will be considered where reasonable and feasible, to minimize the impacts upon local residents. Texas Turnpike Authority will also consider spanning existing streets to minimize the amount of additional traffic on residential collector streets and local arterial roadways. The construction of sidewalks along portions of neighborhoods will be considered to improve pedestrian access in and around the areas. Frontage roads will be provided for any areas affected by the discontinuation of an existing street, or where property access must be restored.

In order to enhance the operational efficiency and visual appeal of the proposed facility, the Texas Turnpike Authority intends to sponsor a SH 130 design charrette. The charrette, which is not an element of the traditional project development process, will serve as a forum for involving key members of the community and the public in the decision making process with regard to such design details as roadway aesthetics, landscaping, scenic easements and bicycle and pedestrian-related issues. The charrette will be held during the design phase of project development, after the environmental process is complete and the route has been established. The goal of the charrette will be to mold SH 130, through active public participation, into a functional, aesthetically pleasing roadway that will enhance the regional roadway network as well as the communities it serves.

5.2 MEASURES TO CONTROL SOIL EROSION AND SEDIMENTATION

Soil erosion and sedimentation will be minimized by the use, where practicable and feasible, of a combination of any of the following generally recommended methods:¹⁶⁵

- 1) Limit the surface area of unprotected, erodible soil exposed to erosion at any one time during construction activities. Stage clearing of vegetation as needed to keep pace with construction, rather than clearing far in advance.
- 2) Upgrade unstable ground underlying the proposed action by means of various engineering activities: the addition of extra sub-base materials to buffer the paved roadway from effects of shrinking and swelling ground, lime-stabilization, and avoidance of cut or fill slopes greater than ten degrees. Where such slopes are unavoidable, they may require protection by geotechnical fabrics, by reduction of top-slope loads, and/or by shoring up the toe of the slopes.
- 3) Coordinate temporary and permanent erosion control measures to ensure the best possible control during the construction and post-construction period. Install permanent erosion control features at the earliest practicable time.
- 4) Revegetate disturbed areas as soon as possible using nature's seasonal cycles to an advantage.
- 5) Use native plant species, particularly long-lived, rapid growing species requiring a minimum of maintenance. An excellent grass mixture consists of little bluestem, hairy grama, sideoats grama, and various annual wildflowers. Weedy species, such as King Ranch bluestem, should not be used as they become invasive to natural areas outside the right-of-way.
- 6) Limit duration of exposure of soils to erosion to the shortest possible time.
- 7) Stage mulching and seeding to closely follow the progression of construction operations, particularly on high cuts and fills.

¹⁶⁵Highway Research Board, 1978, Federal Highway Administration; Texas State Department of Highways and Public Transportation, 1982.

- 8) Protect native vegetative cover where active construction is not required, from equipment traffic and personnel parking. Natural vegetative areas not destined for active construction should be clearly marked as equipment-free areas and all construction personnel clearly instructed in the identification and restricted use of equipment-free areas.
- 9) Reduce the volume and velocity of construction runoff.
- 10) Utilize temporary measures such as berms, dikes, dams, sediment basins, and slope drains to control surface drainage.
- 11) Construct earth or brush berms along the top and/or bottom edges of embankments to intercept runoff during construction.
- 12) Utilize temporary slope drains to carry runoff from cuts and embankments to the bottom of slopes.
- 13) Complete permanent drains and slope protection at the earliest practical time.
- 14) Stabilize permanent soil berms by placing rock rubble on the downslope side, further reducing loss of soil moisture.
- 15) Mulch and/or chipped vegetation may be used to reduce soil erosion on slopes, newly constructed embankments, and revegetated areas.

5.3 MEASURES TO MINIMIZE CONSTRUCTION NOISE IMPACTS

Construction noise levels will be controlled by the use of one or a combination of the following general methods:

- 1) Where noise barriers are determined to be both feasible and reasonable, such noise barriers may be constructed prior to other project-related construction. Other noise barriers will be constructed at the earliest feasible time.
- 2) Locate stationary equipment as far away from nearby noise sensitive properties as possible.

- 3) Install noise reduction devices on equipment.
- 4) Shut off idling equipment.
- 5) In populated areas, enforce sun-up to sun-down operating time control.
- 6) If feasible, reschedule construction operations to avoid periods of noise annoyance identified in any complaints.
- 7) Notify residences whenever extremely noisy work will be occurring.
- 8) If feasible, use shielding or screening devices on or around equipment.

Noise reduction devices consist of mufflers, intake silencers, and dampening materials. Mufflers and intake silencers can significantly reduce the noise produced by all engine-powered equipment. When the sound source is due to the interaction of the equipment's components with itself or with the material upon which it acts, the use of dampening material such as spray coatings or mats can provide some noise reduction. Proper equipment maintenance is of the utmost importance in controlling excess equipment noise.

For the loudest pieces of construction equipment, operating limitations can be employed, thereby reducing the exposure time and lessening the impact. Operating limitations can be particularly effective when the construction site is near such sensitive receivers as schools or churches where a quiet environment is essential during certain hours of the day.

The use of alternative, quieter construction equipment is one of the best ways to reduce the impact of construction noise. However, because of such factors as economics, lack of research and development, and lack of applicable noise standards, alternate, quieter equipment is not readily available for present or near future use. The development and use of quieter construction equipment is more practical and probable on a long-term basis.

Shielding or screening methods using acoustic enclosures are effective for stationary equipment, impact equipment, and pneumatic tools. Noise reduction from such sources as pile drivers, concrete vibrators, detonating hammers, compressors, and pneumatic tools can be achieved by the use of sound-shielding skins, muffling aprons, engine casings and other enclosures made of sound absorptive materials.

These construction noise reduction measures are not always feasible. Factors such as space limitation, equipment efficiency, and other particular construction problems may limit the use of any of these methods.

5.4 MEASURES TO MINIMIZE IMPACTS TO AIR QUALITY

All construction would be carried out in accordance with state regulations pertaining to the minimization of impacts on air quality. The most common dust control techniques involve watering, chemical stabilization, or vehicle speed reduction. Watering is the most common control method because of its low cost, but it provides only temporary control. Chemicals provide longer control but are costly and may adversely affect nearby vegetation and wildlife. Reduction of operating speeds at the site from 35 miles per hour to 20 miles per hour can reduce the dust emissions by as much as 60 percent. The best method for dust control would be a combination of these techniques.

5.5 MEASURES TO CONTROL WATER POLLUTION

Prior to construction, TTA will prepare and submit a Water Pollution Abatement Plan (WPAP) for portions of the proposed action occurring within the recharge zone, as required by the Edwards Aquifer Rules, to the TNRCC for its review and approval under 30 TAC § 213.5. The WPAP controls will be tailored to address site specific conditions so as to maximize effectiveness. TTA will also apply for permit coverage under the EPA Nationwide Pollutant Discharge Elimination System (NPDES) for construction activities.

To mitigate the effect of the proposed construction and operation of the roadway on water resources such as surface water, flood plains, and ground water, the following mitigation measures may be implemented where feasible and appropriate:

- 1) Restrict use of heavy equipment in streambeds.
- 2) Utilize wood timber mats at any location where haul roads come in contact with exposed rock in creekbeds and/or rock ledges.
- 3) Limit the maximum area allowed for movement of bridge pier construction equipment.

- 4) Utilize baled hay or rock filter dams and filter fabric fencing during bridge pier construction.
- 5) Restrict the placement of bridge footings, as practical, in the streambed.
- 6) Perform drilling and concrete pouring operations for bridge columns below the water surface of flowing streams within water-tight casings.
- 7) Sludge and core material from drilling will be removed daily and disposed at a site, away from the stream, which has been approved by the Project Engineer.
- 8) Cover stream bank areas susceptible to erosion with revet mattresses.
- 9) Restrict fording of streams during construction activities.
- 10) Maintain waste areas and construction roads a sufficient distance from streams to minimize impacts to the streams.
- 11) Where work areas must be located immediately adjacent to a stream, utilize dikes or other barriers to minimize impacts to the stream.
- 12) Prohibit parking of vehicles near sensitive streams and collect litter on a regular basis in these areas.
- 13) Prohibit dumping of waste material from construction activities into streams or drainage channels.
- 14) Limit use of herbicides to areas within the right-of-way where mowing is not possible.
- 15) Where sufficient area is not available for overland flow, utilize temporary sediment traps or filtration basins with adequate storage volume to trap or filter out sediment before it leaves the construction area.
- 16) Maintain temporary sediment traps as needed.

- 17) In areas where overland flow (with soil and vegetation present) is less than 200 feet and the paved roadway surface to watershed area is greater than 1 percent, detention/retention basins may be used to minimize water quality impacts from highway runoff.
- 18) Properly plug any water well crossed by the proposed action. The project should follow guidelines in the TNRCC Source Water Protection Program for avoiding contamination of a public or private water well.

5.6 MEASURES TO MINIMIZE IMPACTS TO WILDLIFE AND VEGETATION RESOURCES

Generally Recommended Measures

Impacts to wildlife and vegetation resources can be minimized through the use of a combination of any of the following generally recommended methods:

- 1) Minimize the crossing of flowing streams and utilize bridge spans to the greatest extent (as opposed to fill) to minimize impacts on riparian and aquatic communities.
- 2) Have the right-of-way surveyed to identify significant wildlife corridors, high quality vegetation and sensitive features such as caves, springs, and colonial nesting areas.
- 3) Avoid disturbances of caves, sinkholes, and springs.
- 4) The size of contributing drainage areas to caves and sinkholes will be maintained to the greatest extent possible. No drainage from the highway or from construction of the highway will be permitted to enter caves.
- 5) Reseal (but not fill) caverns opened during construction to preserve the natural temperature, humidity, and air flow regime important to maintenance of cavern ecosystems.

- 6) Particularly dangerous wildlife crossings (i.e., where culverts, bridge spans, etc., are not practicable) can be fenced to divert wildlife through wooded areas along the right-of-way to culverts or bridge spans where crossings can be more safely made.
- 7) Limit the use of herbicides and other chemicals for right-of-way maintenance.
- 8) Schedule mowing for right-of-way maintenance to facilitate the natural reseeding of indigenous spring and autumnal herbaceous communities.
- 9) Thoroughly clear areas identified as harboring oak wilt infestation and properly dispose of all plant material. All working surfaces (blades, buckets, etc.) of equipment used in clearing and grading such areas should be cleaned with a strong bleach or chlorine (hypochlorite) solution prior to use in other areas.
- 10) Minimize the construction of haul work roads and minimize construction traffic impact areas. Work road areas will be restored following construction to as good as or better than conditions that existed prior to construction.
- 11) Because of safety requirements, no trees can be left within 30 feet of the roadway without roadside protection. Trees outside this safety zone, which are not affected by construction, will be preserved.
- 12) If nesting or wintering Mountain Plovers, Loggerhead Shrikes, or rookeries are identified on or along the route, deferring especially loud or noisy activities in the adjacent areas until after the birds have left the area will reduce negative impacts to these species.
- 13) Due to the large number of bridges and culverts that will be required, use of bat-friendly bridge and culvert designs will help to minimize impacts to these species.

5.7 MEASURES TO MINIMIZE IMPACTS TO WETLANDS

The initial mitigation measure used in the planning of the proposed action was to avoid wetlands and aquatic habitats through route selection and alternatives analysis. Beyond that,

activities designed to minimize the impacts to wetlands and aquatic habitats from highway construction will be applied. These may include among others:

- 1) Minimizing clearing in the construction area wherever safety allows;
- 2) Decreasing the amount of fill placement through the use of retaining walls;
- 3) Implementation of Best Management Practices, including an erosion and sedimentation control plan.
- 4) The use of bridge crossings instead of culverts;
- 5) The use of retention basins and revegetated swales to minimize runoff, sedimentation, turbidity, leaching of soil nutrients, and leaching of chemicals from petroleum products, pavement, and waste material;
- 6) Alleviating flow alterations due to structures which may change established wetland drainage or flooding patterns.
- 7) Replacement in the form of tree plantings, emergent wetland creation and/or stock ponds.

5.8 MEASURES TO MINIMIZE IMPACTS TO HISTORIC PROPERTIES

Archeology

Upon selection and approval of the Preferred Alternative, TxDOT and the TTA will carry out the stipulations of the PA, the MOU, and the SH 130 protocol to identify, evaluate historic properties, assess the effects of the project on those properties, and mitigate the effects. These requirements shall be coordinated with the SHPO and may include archeological research strategies and methodologies to address the potential of alluvial terraces along the major and minor streams for containing buried archeological materials. These activities shall be carried out in accord with the SH 130 protocol contained in **Appendix F**.

Historic Properties

Per the SH 130 protocol (**Appendix F, IV.11.a**), the TTA agrees, either directly or through a contractor at an appropriate time, to produce nominations to the NRHP for all 16 properties on the preferred Alternative, determined eligible in consultation with the SHPO. This commitment will serve as partial mitigation for adverse effects on each property by a) documenting its condition before SH 130 construction, b) providing the principal repository for historic research, drawings, photos, and mapping on the property, and c) formalizing the initial determination of eligibility, in consultation with the SHPO, with the necessary documents to achieve actual listing of the property in the NRHP. Consultation will continue with the THC to minimize harm of actual construction designs such as toll plazas (see TxDOT letter of January 5, 2001, in **Appendix C**).

Official State Historical Markers

Upon selection and approval of the Preferred Alternative, TxDOT and the TTA will carry out the stipulations of the PA, the MOU, and the SH 130 protocol to identify OSHMs, evaluate their historical significance, assess the effects of the project on the markers, and mitigate the effects. For each OSHM that is to be relocated due to direct impacts, consultation with the County Historical Commissions and the THC has been completed. If additional OSHMs are identified within the right-of-way after the start of construction, the TTA and the TxDOT will initiate mitigation measures to relocate the marker in consultation with the SHPO. The mitigation will be carried out in accord with the SH 130 protocol contained in **Appendix F**.

Cemeteries

Upon selection and approval of the Preferred Alternative, TxDOT and the TTA will carry out the stipulations of the PA, the MOU, and the SH 130 protocol to identify historic cemeteries, evaluate their historical significance, assess the effects of the project on the cemeteries, and mitigate the effects. For each adversely affected cemetery avoidance and/or relocation will be exercised to mitigate loss or minimize harm. If unrecorded burials are found within the right-of-way or any ground disturbing activities associated with SH 130, TxDOT will (1) consult SHPO under the terms and conditions of the PA to determine eligibility for the TAC and the National Register and assess effects; (2) implement a treatment plan to address issues of significance, data recovery, and if necessary reburial; and (3) if the cemetery/burials are prehistoric or historic Indian, the provisions of the Native American Graves Protection and Repatriation Act will be followed. These steps shall be undertaken in accordance with the PA and the SH 130 protocol.

6.0 LIST OF PREPARERS

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**7.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS
TO WHOM COPIES OF THE STATEMENT ARE SENT**

Following is a list of all entities that submitted comments on the Draft EIS, and those receiving a copy of this Final EIS.

U.S. Fish and Wildlife Service

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

Federal Emergency Management Agency

U.S. Department of Housing and Urban Development

U.S. Department of Agricultural, Natural Resources Conservation Service

U.S. Department of the Interior

Prairie Band Potawatomi Nation

Texas Parks and Wildlife Department

Texas Historical Commission

Texas Natural Resource Conservation Commission

Governor's Office of Budget and Planning

Bureau of Economic Geology

Texas Water Development Board

List of Agencies, Organizations, and Persons to Whom Copies of the Statement Are Sent

Capital Area Planning Council

Capital Area Metropolitan Planning Organization

San Antonio - Bexar County Metropolitan Planning Organization

Capital Metropolitan Transportation Authority

Austin-San Antonio Corridor Council

City of Georgetown

City of Round Rock

City of Pflugerville

City of Austin

City of Mustang Ridge

City of Lockhart

City of Seguin

City of San Antonio

Williamson County

Travis County

Caldwell County

Guadalupe County

The Sierra Club

8.0 COMMENTS AND COORDINATION

This section of the SH 130 FEIS summarizes the early coordination process, public involvement activities, and key issues and pertinent information received from the public and government agencies. Copies of pertinent correspondence with government agencies and the public are included in **Appendix C Correspondence**.

8.1 EARLY COORDINATION

As described in **Section 1.0 Purpose and Need**, the effort to resolve traffic congestion and mobility constraints in the Austin-San Antonio corridor has been underway since the early 1980s. An environmental assessment prepared by the MoKan Transportation Corporation was approved for further processing by FHWA on April 25, 1988. Public meetings were held in Georgetown on May 17, 1988, and in Austin on May 24, 1988. Key issues included the concern over potentially adverse impacts to East Austin neighborhoods and the protection of sensitive ecological resources.

TxDOT conducted a pre-scoping meeting for SH 130 on March 31, 1994 to inform government agencies about the proposed action and EIS process. The meeting was attended by representatives from FHWA, the Federal Transit Administration (FTA), CAMPO, Capital Metro, City of Austin, Travis County, and several project consulting firms.

A public scoping meeting was held on June 22, 1994 in Austin by TxDOT in cooperation with CAMPO. Over one hundred individuals were sent written invitations to the meeting, including local, state and federal government elected and appointed officials, representatives of chambers of commerce, labor unions, freight carriers, community development agencies, bicycle and pedestrian advocacy groups, neighborhood associations, civic organizations, real estate organizations and environmental groups. The meeting was also publicly advertized. The scoping meeting addressed the history and description of SH 130, major investment analysis issues, and provided an opportunity for comments from agency representatives and citizens. Over 180 people registered their attendance at the meeting. Pertinent issues and concerns raised at the public scoping meeting included impacts on agricultural land, ecology, and East Austin neighborhoods. Concern over issues regarding environmental justice, urban sprawl, access for bicyclists and pedestrians, air and noise pollution, the need for improvements to I-35, and access to Austin-Bergstrom International Airport were also expressed. There was general support for making SH 130 a multimodal corridor able to accommodate transit, HOV lanes, freight and passenger rail, hike-and-bike trails, and toll collection.

Letters supporting construction of SH 130 were received from the City of Georgetown, the City of Lockhart, and Guadalupe County. Letters of opposition to SH 130 were received from environmental groups and some individual landowners.

Other early coordination efforts included a government agency meeting conducted by TxDOT on September 13, 1994 (attended by representatives of city, county, and state government, CAMPO, and FHWA), and a series of “open house” public forums in the spring of 1995.

CAMPO conducted a public hearing regarding the SH 130 MIS on June 9, 1997. Thirty individuals provided verbal comments at the hearing, with 15 indicating support for SH 130 and 15 indicating opposition. Those in favor of SH 130 cited congestion relief, mobility and access benefits. Those opposed to SH 130 cited cost effectiveness, adverse impacts on East Austin, impacts of specific alignments, the need to study more alternatives, and the need to develop additional information about social, economic and environmental impacts. Following the MIS public hearing, CAMPO received 39 written comments. Thirty-five of the written comments expressed support for SH 130, mostly from citizens who opposed alternatives which would be located east of Lake Walter E. Long. Four written comments opposed construction of SH 130. These comments questioned the need for SH 130, the need to address other alternatives (such as rail), and the need to more thoroughly address land use and other social, economic and environmental impacts.

8.2 PUBLIC MEETINGS

This subsection documents the SH 130 public meetings held as part of the NEPA process during 1994, 1996, 1997 and 1998 and provides a summary of comments received. During this time period, SH 130 was being developed as three separate Environmental Impact Statements, known as SH 130 Segment A, B, and C. The focus of the meetings was primarily segment specific, although all of the public meetings addressed the entire proposed action, from Georgetown to Seguin.

As described in **Section 2.0 Alternatives**, the alternatives refinement process resulted in reducing the number of SH 130 build alternatives to eight, which are referred to in this FEIS as Alternatives 1 through 8. However, because the SH 130 public meetings were conducted prior to the combination of Segments A, B, and C into a single FEIS, the names used to identify build alternatives for each segment are different from those that are used in this FEIS. The following summaries of the SH 130 public meetings therefore contain references to the previous nomenclature used to identify preliminary alternatives. In order to minimize confusion and ensure an accurate account of the comments received at the public meetings, the previous nomenclature will be used

in summarizing the comments. **Table 8.2-1** shows which preliminary alternatives comprise the current Alternatives 1 through 8. For more information about the preliminary alternatives, see **Section 2.1.2 Preliminary Alternatives Developed by the Project Engineers and through Public Involvement**. For more information about the relationship of the preliminary alternatives to the Build Alternatives, see **Section 2.4.2 Description of the Build Alternatives**.

Table 8.2-1 Conversion of Preliminary Alternatives

Current Build Alternatives	Preliminary Alternatives					
	Segment A		Segment B			Segment C
	W-1 – W-6	T-1 – T-4	NI – NIV	CI – CIII	SI – SII	A – I
1	W-2	T-3	NII	CI	SII	A
2	W-5	T-4	NI	CI	SII	H
3	W-2	T-3	NII	CI	SII	H
4	W-2	T-4	NI	CI	SII	A
5	W-5	T-4	NI	CI	SII	A
6	W-5	T-3	NII	CI	SII	A
7	W-5	T-3	NII	CI	SII	H
8	W-2	T-4	NI	CI	SII	H

In November, 1999, the TTA Division circulated a “State Highway 130 Update” via its newsletter and advertisements purchased in several newspapers. The update included information about recent developments (such as the decision to prepare a single environmental impact statement, primary route alternatives, etc.), and included a map showing the location of the eight build alternatives. A copy of the update and a list of newspapers which carried the paid advertisement are included in **Appendix C** of this DEIS.

8.2.1 Segment A (SH 195 to US 290)

Six public meetings were held for Segment A of SH 130. Additionally, meetings were held with neighborhood associations and with various individual landowners, as requested. At the February 1998 public meeting, Segment A alternatives were known as W-1 through W-6, and T-1 through T-4.

8.2.1.1 October 25 & 27, 1994

Public information workshops were held on Tuesday, October 25, 1994 in the Williams Middle School Auditorium in Georgetown, Texas and on Thursday, October 27, 1994 in the Manor High School Cafeteria in Manor, Texas. Each workshop was from 4:00 p.m. to 7:00 p.m. and each followed the “reception” format wherein no formal presentations concerning SH 130 were made, but all questions were answered. The purpose of the workshops was to provide information on the proposed action, to allow interested citizens the opportunity to present information or comment on the proposed action and to develop a record of public views and participation.

Each person attending the workshops was requested to register their name and address on a sign-in sheet and each was given an information package containing the following:

- A welcoming letter explaining the format of the workshop.
- An overview of SH 130.
- A map showing alternate corridor routes.
- A brief explanation of Right-of-Way Acquisition and Relocation Assistance.
- A citizen comment form.

Displays at the Workshops consisted of three identical aerial photographs (scale 1” = 1000') with the proposed alternate corridors shown. One of the displays also showed environmental features. Other displays included the Project Schedule and the Typical Sections. A recording station was set up to allow verbal comments to be recorded for those who preferred this method over submitting written comments.

One hundred ninety-two (192) people registered their attendance at the October 25, 1994 Workshop and fifty-three (53) people registered at the October 27, 1994 Workshop.

A total of seventy-one (71) comment forms, six (6) letters and one (1) post card, were received after the workshops. One person used the recording station at the workshops to leave verbal comments for the record. The citizens comment form contained six questions concerning the proposed action. The following is a restatement of each question and a summary of the replies thereto.

1. Do you see the proposed project providing beneficial effects for your community? Identify your community and indicate to which alternate route location your comments refer.

Of those responding to this question, twenty-nine (29) indicated that the proposed project would provide beneficial effects for their community and twenty-seven (27) indicated that the proposed project would provide no beneficial effects. Several of those stating no beneficial effects are residents of the Katymead subdivision east of Pflugerville and are concerned that an alternative in that area will have detrimental effects on their neighborhood.

2. Do you see the proposed project having special or unusual impacts on your community (economic, environmental, social or other)? Please explain and indicate to which alternate route location your comments refer.

Eight (8) responses to this question indicated that the proposed project would have no special or unusual impact on their community. Thirty-eight (38) responses indicated that the proposed project would impact their community in a negative way.

3. Do you know of any archeological or historic sites or family cemeteries in the project area? Please discuss with TxDOT personnel or consultant personnel or provide an address or telephone number for future correspondence.

Forty (40) responses indicated no knowledge of archeological or historic sites or family cemeteries in the project area. Two (2) responses indicated cemeteries in the area but did not give a specific location. The environmental study of the alternate corridors will reveal all archaeological and historic sites and all cemeteries in the corridors. One response mentioned the Immanuel Lutheran Church and one mentioned the Palm Valley Lutheran Church, cemetery and oak grove.

4. Do you know of any factors such as caves, springs, unique biological communities environmentally sensitive areas or endangered species within the project area?

Five (5) responses mentioned the native prairie or grassland located near Gattis School Road, east of Round Rock. Other responses mentioned Gilleland Creek, a water tank

located at the intersection of Brushy Creek and the proposed project, a spring along Railroad Street, the San Gabriel River , Berry Creek and the aquifer recharge zone.

5. Is there any alternate route location that you particularly like or dislike? Why?

Responses to this question indicated a broad range of opinion concerning favorable or unfavorable route locations. No overall favorite route was discernible; however, many people indicated a dislike for an alternative east of Pflugerville, near the Katymead subdivision.

6. In your opinion, what are significant issues that should be addressed in the Draft Environmental Impact Statement?

The predominant issues mentioned are those such as noise, air quality, pollution, etc., which will be addressed in the Environmental Impact Statement.

The citizen comment form also requested additional comments and thirty-six (36) responses were received. These responses are summarized as follows:

Mr. William Anderson expressed approval of the project.

Mr. William T. Burgess, Jr. said the project was needed but he did not like the alternative near the Katymead subdivision.

Michael and Beverly Canales did not like the alternatives near Pflugerville. They consider an alternative further to the east to be the best.

Mr. & Mrs. Bryan Chenault suggested building the High Speed Rail (HSR) in lieu of SH 130.

Mr. John Czap requested an opportunity to review the route selection prior to the final decision to evaluate the reasons for selection.

Dr. D.L. Davis does not want a major highway near elementary and middle schools.

R.C. Decker prefers an alternative east of Pflugerville.

Mr. Charles Dumas requested a relocation of the alternative in the area of US 79 by moving the corridor east approximately 2,000 ft. to straighten the curve. He stated several reasons why this relocation would be more economical. He also stated advantages to Palm Valley Lutheran Church.

Dorothy Gross has lived in Ohio for over 50 years and has no use for her property. She hopes all of her property will be used for a highway and roadside park.

Mr. Tim Harris requested completion of the project as soon as possible.

Mr. Vernon Hodde suggested using the abandoned M-K-T railroad right-of-way for the route.

Mr. James Isbell suggested that the project be built fast.

Mr. Ray Krzesniak said that the alternative closest to Pflugerville should not be considered because of the recent residential development in Pflugerville.

Janet Lee suggested routes that would minimize impacts.

Merlin and Nelda Lester requested consideration of the route that will disrupt family residences the least.

Mr. Carl Lidell suggested an alternate route and said the project was needed as soon as possible.

Mr. Richard Lieffort suggested building another interior access to Austin and thereby reducing the need for a bypass for through traffic.

Mr. Mark J. Molnar suggested construction of some form of mass transit to alleviate traffic congestion on I-35.

Mr. William J. Ott, Jr. said the need for the project is urgent.

Mr. James Perkins believes the project is worthwhile, needed road improvement.

Agnes Plutino wants an opportunity to do plant rescues prior to construction.

Mr. Bob Schrawger said an alternate route to I-35 is welcome news and must be accomplished at the earliest.

Mr. David Schwegmann suggested a toll road or funding by special interests. He said the public deserves an honest answer to what happened to the Transportation Corporation and the amount of tax money spent on the project.

Jannel D. Senn is concerned about a highway near the Katymead subdivision east of Pflugerville.

Mr. Scott Sheffield thinks some alternatives are too close to Pflugerville. He preferred an alternative that would be far enough from the downtown historical area to minimize the negative impact on the community.

Mary Ellen Sircy believes there is no good choice for the highway when it displaces people. She would join or form opposition to the project.

Mr. Dennis Spangler suggested that consideration be given to widening I-35 to 10 lanes from San Antonio to north of Hillsboro and requested that the SH 130 project be reconsidered.

Curtis and Elenora Stabeno have expended considerable effort to fix their property and are concerned that their home will be taken.

Kathryn Stallard requested consideration of an alternate route to utilize an existing highway such as SH 95 through Taylor.

Adriane Stewart wants SH 130 to be a parkway since I-35 already provides access to various communities.

Mr. Mark Stout said SH 130 was originally proposed as a freight corridor and should not be planned as a commuter highway.

Mr. John P. Thomas said the interchange at SH 79 should accommodate the needs of members of Palm Valley Lutheran Church for access to the church site.

Don and Kelly Tompkins asked that the project be stopped and stated that they would attempt to prevent construction.

Mr. Robert C. Wagner requested use of more recent aerial photography due to residential construction since the photography shown at the workshops.

Wilbert and Alice Witte said the Pflugerville area needs a better route than I-35 and it is needed as soon as possible.

One unsigned comment form requested that a road be built using the existing abandoned railroad right-of-way and power easements.

Six letters were received and are summarized as follows:

Mr. Henry B. Chamberlin owns farmland that will be affected by certain alternatives. He is concerned about the value of this property as a working cattle farm and the environmental impact on a spring-fed lake on his property.

Maryanne Hayes expressed opposition to an alternative due to its close proximity to the Katymead subdivision and requested selection of an alternative further to the east.

Cathleen A. Miller also expressed opposition to an alternative close to Pflugerville and suggested that further east would be least invasive to established neighborhoods.

Mr. William J. Renfro, Chairman and Mr. Glenn E. West, President and C.E.O. of the Greater Austin Chamber of Commerce, sent a letter to reiterate support for SH 130. They stated that the Chamber had no preference at this time in regard to alignment, but said the design should accommodate high speed truck traffic, should accommodate alternate modes of transportation, and should include cost/benefit studies to balance negative impacts with the cost of mitigating those impacts.

Mayor Leo Wood of Georgetown sent a letter in support of the project and offered cooperation to insure that preliminary work is completed without delay. Attached to the letter was a copy of a Georgetown City Council resolution dated June 14, 1994, which expressed their preferences for alignment and design.

Msgr. Louis J. Wozniak of Saint Helen Church sent a letter expressing concern that the serenity of the church site would be disturbed. The congregation finalized the location for the church site in the 1970s and have spent a considerable amount of money to create a fine place of worship. He suggested that a location further east would cause much less disruption and traffic noise.

One postcard was received from Lauro Reveles stating opposition to the project.

Mr. William B. Sneed utilized the recording station to record verbal comments. He spoke in behalf of the project and believes it should be built as soon as possible. He believes SH 130 is the most cost effective way to add capacity to I-35 without disrupting traffic flow on I-35. The exact alignment is not important to him and he believes the project should be put under construction as soon as possible.

8.2.1.2 April 9, 1996

A public meeting was held on Tuesday, April 9, 1996, in the Bluebonnet Trail Elementary School Cafeteria at 11316 Farmhaven Street in Manor, Texas. The reason for holding the meeting was to display and discuss a new alternative route for SH 130, between Pflugerville Road and US 290, east of Austin, that had been developed since the original alternative routes from north of Georgetown to east of Austin were displayed at Public Information Workshops in October, 1994. The new alternative route was necessary to connect one of the original alternative routes with an alternative route south of US 290 and east of Walter E. Long Lake.

The meeting began at 6:00 P.m. with participants viewing the displays and asking questions or obtaining project information from TxDOT staff and the project engineers. At 7:00 P.m. a formal presentation was given and was followed by a question and answer period.

The purpose of the meeting was to provide information on the proposed project, to provide interested citizens with an opportunity to present information, ask questions or comment on the proposed alternative route and to develop a record of public views and participation.

Each person attending the meeting was requested to register their name and address on a sign-in sheet and indicate if they owned property in the vicinity of the new alternative route, if they were interested in the project and if they supported, did not support or were undecided on their support of the project. The sign-in sheet had space for public officials to indicate the group or

organization they represented and a space to indicate the attendee's desire to make a statement at the meeting.

Each person in attendance was given an information package containing the following:

- The Public Meeting agenda
- A welcoming letter explaining the format of the meeting.
- An overview of the project
- A map showing alternate corridor routes
- A project schedule
- A brief explanation of right-of-way acquisition and relocation assistance
- A citizen comment form

Displays at the public meeting consisted of the following:

- Aerial photography (scale 1"=1000') showing alternate corridors
- Aerial photography (scale 1"=1000') showing environmental constraints
- Typical sections
- Project schedule

Two hundred six (206) people registered their attendance at the public meeting. A total of twenty-seven (27) citizen comment forms and five (5) letters were received after the public meeting.

The citizen comment form contained six questions concerning the project. The following is a restatement of each question and a summary of the replies thereto.

1. Do you see the proposed project providing beneficial effects to the traveling public?

Twenty-two (22) respondents replied "yes" or made a positive statement regarding beneficial effects. One (1) respondent saw no beneficial effects.

2. Do you see the proposed project having special or unusual impacts (economic, environmental, social or other)? Please explain.

Nine (9) respondents responded “no”. Fourteen (14) respondents made statements regarding impacts of the proposed project. Of these, ten (10) statements were related to negative impacts, such as too close to neighborhoods and schools, added pollution and noise, and reduction of farm land. Four (4) statements gave positive responses such as congestion relief on I-35 and positive economic impact for eastern Williamson and Travis counties.

3. Do you know of any archeological or historic sites or family cemeteries in the project area?

All responses were negative.

4. Do you know if any factors such as caves, springs, unique biological communities, environmentally sensitive areas or endangered species that may be within the project area?

One respondent mentioned Walnut Creek. All other responses were negative.

5. Is there any alternate route location that you particularly like or dislike (see **Figure 8.2-1**):

Response was as follows:

<u>Route</u>	<u>Like</u>	<u>Dislike</u>
A (westernmost)	1	8
B	1	3
C	5	0
D	0	4
East Lake (EL, easternmost)	7	3
High Speed Rail (HSR)	3	1

6. In your opinion, what are significant issues that should be addressed in the Draft Environmental Impact Statement?

The seven (7) responses received are paraphrased and summarized as follows:

Preserve human habitats rather than obscure birds and insects
The negative impact of route EL on development of Harris Branch
Proper highway drainage
Noise. Safety for pedestrian
The location of the route in relation to neighborhoods and schools
Funding
Providing for growth around the new airport

The citizen comment form also requested additional comments and ten (10) responses were received. These responses are paraphrased and summarized as follows:

The new route is badly needed
Strong objection to making the route a toll road
Route EL is a political solution and not a logical or realistic approach
SH 130 offers protection against a catastrophe occurring in downtown Austin
Option C provides a viable transportation route with minimal disruption to the community
Route selection should consider social factors
There are safety concerns with routes A and D being close to Parkcrest Middle School
The sooner the project can get started, the better
A must project to relieve traffic on I-35
One respondent did not want the project to take any of his property.

Five (5) letters were received and are summarized as follows:

Mr. William F. Burrow, Jr., President of Sage Land Company wrote on behalf of Austin-Jourdan Crossing Partners to express support for alignment of SH 130 along the old M-K-T railroad right-of-way.

Mr. K.W. Kim, Corporate Director of Samsung Austin Semi-conductor wrote to express support for the alignment of SH 130 which extends south of Parmer Lane along the railroad right-of-way currently owned by the State of Texas. He pointed out that Samsung chose their plant site in large part due to projections that SH 130 would be adjacent to the site.

Mr. Wendel G. Voight wrote to express support for alternate route HSR. He stated that alternate routes A and B are too close to Pflugerville.

Mr. Scott B. Atha wrote to express concern with regard to the potential for a railway in the chosen corridor. He stated that this information has not been adequately relayed to the public. He requested an additional study of a route farther east if the corridor is to accommodate a railway. He also requested that a public hearing be held for Pflugerville residents. Mr. Atha stated that making SH 130 a toll road is not feasible.

Mr. James Hartwell Vance, P.E. wrote in response to public meetings for Segments A and B and to the August, 1993 Overview Environmental Assessment. Mr. Vance expressed concern with the 1000 foot width depicting the alternate corridors on the aerial photography displays. He also mentioned the handout available at the public meeting and compared it with the handout at the Segment B public meeting. Mr. Vance said that determination of specific cross-sections should have been integrated with the initial phases of project study.

8.2.1.3 July 15, 1997

A public meeting was held on Tuesday, July 15, 1997, at the Park Crest Middle School in Pflugerville, Texas. The reason for holding the meeting was to display and discuss the Technically Preferred Alternative for Segment A of SH 130 and to receive comments on this alternative.

The meeting began at 5:00 P.m. with participants viewing the displays and asking questions or obtaining project information from TxDOT staff and project engineers. At approximately 7:00 P.m. a formal presentation was given followed by a public comment period. According to the sign-in sheets, 325 people were in attendance.

The formal presentation began with a project introduction and status report of the Major Investment Study for SH 130 by Sharon Barta, P.E., Advanced Project Development Engineer for the Austin District of TxDOT. Henry Pearson, P.E., Project Engineer, then continued the presentation. Mr. Pearson's presentation covered the project history, the highway development process, the alternatives under consideration, the evaluation of those alternatives, the selection of the Technically Preferred Alternative, the differences in projected traffic among alternatives, and the project schedule.

Following Mr. Pearson's presentation, at approximately 8:00 p.m., the public comment period began. Thirty-one people presented their views on the project and the Technically Preferred Alternative. The vast majority of the speakers support the concept of SH 130, although only two speakers favored the Technically Preferred Alternative as presented.

Several people from the Pflugerville area spoke in favor of moving the alignment to the east of where it is currently proposed. City officials and residents of the Gatlinburg subdivision favored the HSR alternative. Also speakers from the Bohls Place and Saxony subdivisions favored a route farther away from their homes.

Several residents of the Walnut Place subdivision, located north of US 290, expressed their opposition to the Technically Preferred Alternative and their support for the East Lake route. However, a representative of home owners along the East Lake route presented a petition with 61 signatures, all in opposition to the route.

Three (3) speakers from the Indian Creek subdivision east of Georgetown expressed their concern over the proximity of the roadway to their homes. They all suggested moving the alignment a few hundred feet to the east to alleviate the impact to their neighborhood.

All of those who spoke in opposition to the location of the Technically Preferred Alternative expressed concerns over similar issues. The common concerns included public safety, noise, effects on property values, visual intrusion, and increased traffic on local streets. Others were concerned about the introduction of crime into their neighborhoods and that the proposed route is too close to existing development to accommodate future growth.

Attendees at the Public Meeting were also given the opportunity to submit written comments regarding the project. Some written comments were submitted at the Meeting, while others were mailed or e-mailed to TxDOT. A total of 213 comments were received.

Six (6) comment letters were received in support of SH 130 and the Technically Preferred Alternative as presented at the Public Meeting.

Nine (9) comment letters were received in support of the Technically Preferred Alternative, with suggestions for design modifications in the Pflugerville and US 290 areas.

One hundred ninety-five (195) responses were received in favor of the project, but not in support of the Technically Preferred Alternative. These responses were a combination of letters, comment response forms, and cards. Included in the 195 responses was one group, supporting the Positive Power Kennels on Crystal Bend Drive, who submitted 87 cards and a petition with 63 signatures. The majority of those in favor of another route wanted to see the proposed roadway moved as far to the east as possible. Similar to the oral comments, the primary objections to the Technically Preferred Alternative were impacts to public safety, noise, property values, and local traffic.

The City of Pflugerville submitted a resolution stating support for a route combining the HSR Alternative with Alternative B.

Two letters questioned the need for the project.

8.2.1.4 July 17, 1997

A Public Meeting was held on Thursday, July 17, 1997, at the Hopewell Middle School in Round Rock, Texas. The reason for holding the meeting was to display and discuss the Technically Preferred Alternative for Segment A of SH 130 and to receive comments on this alternative.

The meeting began at 5:00 P.m. with participants viewing displays and asking questions or obtaining project information from TxDOT staff and project engineers. At 7:00 p.m. a formal presentation was given followed by a question and answer period. According to the sign-in sheets, 335 people were in attendance.

The formal presentation began with a project introduction and a status report of the Major Investment Study for SH 130 by Sharon Barta, P.E., Advanced Project Development Engineer for the Austin District of TxDOT. Henry Pearson, P.E., Project Engineer, then continued the presentation. Mr. Pearson's presentation covered the project history, the highway development process, the alternatives under consideration, the evaluation of those alternatives, the selection of the Technically Preferred Alternative, the differences in projected traffic among alternatives, and the project schedule.

Following Mr. Pearson's presentation, at approximately 8:00 p.m., the public comment period began. 34 people presented their views on the project and the Technically Preferred

Alternative. The vast majority of the speakers support the concept of SH 130, although only one speaker favored the Technically Preferred Alternative as presented.

Of the 34 verbal comments, 17 speakers voiced opposition to the Technically Preferred Alternative and would like to see new alignments studied. Opposition was heard from six speakers regarding the Indian Creek subdivision east of Georgetown. Residents from that area would like to see the Technically Preferred Alternative moved a few hundred feet to the east to lessen noise, visual, and safety impact to their neighborhood.

The major opposition to the Technically Preferred Alternative came from the eleven speakers who reside along the proposed route in the Round Rock area. Two areas in particular, Round Rock Ranch and Rolling Ridge, were well represented. The primary concerns involved public safety, noise, effects on property values, and visual intrusion. Many of the speakers mentioned that the proposed route may have been prudent and feasible 10 years ago, but not today. Several residents of the Round Rock Ranch and Rolling Ridge subdivisions indicated that they were not informed or misinformed by realtors and homebuilders about the development of the roadway.

Several speakers suggested the elimination of the interchange at Gattis School Road and the elimination of the frontage roads from Gattis School Road to the proposed SH 45.

One speaker suggested that the wide proposed median be eliminated through the Round Rock area to lessen the impact to surrounding neighborhoods. He suggested that the roadway be constructed with no frontage roads and a concrete median barrier. He mentioned that the rail or other improvements proposed for the median could utilize the remainder of the right-of-way at a later time.

One speaker expressed a desire for TxDOT to beautify the right-of-way with trees and other vegetation following construction.

One speaker who lives near the proposed route and relies on a private water well expressed concern over the run-off from the facility.

One speaker doubted the need for the project and requested that TxDOT look at other alternatives such as rail or improvements to I-35.

Attendees at the Public Meeting were also given the opportunity to submit written comments regarding the project. Some written comments were received at the Meeting, while others were mailed or e-mailed to TxDOT. Two petitions were also submitted. A total of 1,199 comments, including the signatures on the petitions, were received. However, it should be noted that many of the people who signed the petitions also sent in separate comments. It can not be assumed that 1199 people responded to the request for comments. There were 927 signatures on the two petitions and 272 individuals comments.

The petition representing the residents of the Round Rock Ranch, Rolling Ridge, and Southcreek areas contained 719 signatures. The petition read as follows, *“We the undersigned concerned citizens of Round Rock appeal to the Texas Department of Transportation (TxDOT) to identify and adopt an alternate route to the ‘Technically Preferred Alternative’ of SH 130 (MoKan Freeway) currently proposed through the residential neighborhoods of Round Rock. We feel that this project, if constructed as planned, will not only endanger the lives of our children and families but will also have an undesirable impact on our environment, our schools, and our community.”*

The petition representing the Indian Creek and Churchill Farms areas of Georgetown contained 208 signatures. The petition read as follows, *“We the homeowners of the Indian Creek (Churchill Farms) subdivision hereby petition the City Council members of the City of Georgetown and the County Commissioners of Williamson County to inform the Texas Department of Transportation that the current proposal for the Technically Preferred route for State Highway 130 (MoKan) be moved approximately one mile east of County Road 102, and additionally, that County Road 102 be closed off from State Highway 29 and incorporated into the Indian Creek subdivision.”*

Sixteen (16) comments were received stating general support of SH 130. Twenty-two (22) commentors stated support for the construction of SH 130 along the alignment of the Technically Preferred Alternative. Six (6) commentors supported the idea of a toll road. Two (2) commentors voiced opposition to SH 130 as a project, and two (2) commentors suggested widening I-35 only. The six (6) comments which were classified as other primarily were asking questions regarding the timing of the proposed project and not stating a preference for or against the project or the Technically Preferred Alternative.

Two hundred-eighteen (218) individual comments were received which stated opposition to the Technically Preferred Alternative. However, approximately two-thirds of those opposing the Technically Preferred Alternative did mention that SH 130 is needed. The majority of the opposition comments were from residents in Round Rock between Gattis School Road and Bowman

Road. Also, a significant amount of letters were received from the Indian Creek subdivision east of Georgetown.

There were several common reasons stated for opposing the Technically Preferred Alternative. Most in opposition are concerned about the noise, visual, local traffic, property value, and public safety effects that they perceive will result from the presence of the roadway. Additional concerns were for the potential for the route to be designated as a hazardous materials route, light pollution (bright freeway lights), and the impacts to local air quality. Many residents believe that the roadway will introduce new crime to the area. A few residents expressed concern that the project would have impacts to area flood plains, wetlands, and trees. Many residents were also bothered by the possibility of a rail line in the median of the roadway.

Another common thread in many of the letters opposed to the Technically Preferred Alternative in the Round Rock area was the lack of alternative routes under study. Most would like to see additional routes to the east, including FM 685, studied. There was also a great deal of concern over why the City of Round Rock allowed single family residential development in an area that was proposed for freeway uses. Also, many residents were angry that they were uninformed or misinformed by realtors and homebuilders regarding the development of SH 130.

The City of Round Rock submitted a letter requesting that TxDOT review new alternatives for SH 130. It also stated that a hazardous material route not be allowed to travel close to existing neighborhoods.

8.2.1.5 February 3, 1998

A Public Meeting was held on Tuesday, February 3, 1998, at the Hopewell Middle School in Round Rock, Texas. The reason for holding the meeting was to display and discuss the Technically Preferred Alternative (T-3/W-2) for Segment A of SH 130 and to receive comments on this alternative, as well as other alternatives.

The meeting began at 5:00 P.m. with participants viewing displays and asking questions or obtaining project information from TxDOT staff and project engineers. At 7:00 P.m. a formal presentation was given followed by a public comment period. According to the sign-in sheets, 821 people were in attendance.

The formal presentation began with a project status report by Henry Pearson, P.E., Project Engineer. Mr. Pearson's presentation covered the project history, the highway development process, the alternatives under consideration, the evaluation of those alternatives, the selection of the Technically Preferred Alternative, the differences in projected traffic among alternatives, and the project schedule. The development of SH 130 as a toll road was also discussed.

Sharon Barta, P.E., Advanced Project Development Engineer for the Austin District of TxDOT concluded the presentation by recognizing the public officials in attendance and reviewing the changes that had been made to the project since the July 1997 Public Meeting. She also briefly discussed the assumptions in the traffic model, the resolutions that had been made by the local governmental entities, and the various options for public comment.

Following the presentation, at approximately 8:00 p.m., the public comment period began. Fifty-six (56) people presented their views on the project and the Technically Preferred Alternative. All but three of the commentators spoke in reference to the alternatives north of Pfluger Lane ("W" alternatives). Fifty-three (53) of the speakers supported the concept of SH 130, but there was no consensus on where roadway should be located.

Of the 56 verbal comments, 29 speakers voiced opposition to the Technically Preferred Alternative (W-2). Of those 29, thirteen (13) mentioned a specific route preference, with Alternative W-5 getting the most support (6). The majority of the opposition was heard from speakers who live in the Rolling Ridge, Round Rock Ranch, South Creek, Apache Oaks, and Chandler Creek subdivisions, all of which are adjacent or near the Technically Preferred Alternative. The primary concerns involved public safety, noise, air quality, effects on property values, and visual intrusion. Many of the speakers mentioned that the proposed route may have been prudent and feasible 10 years ago, but not today. Several residents of the Round Rock Ranch and Rolling Ridge subdivisions indicated that they were not informed or were misinformed by realtors and homebuilders about the development of the roadway.

Many of those in opposition to the Technically Preferred Alternative also questioned the data and assumptions in the evaluation matrix. It was emphasized in the presentation and the handout, which was distributed at the Public Meeting, that the results of the evaluation matrix were inconclusive and other factors led to the selection of the Technically Preferred Alternative.

Twenty-two (22) speakers voiced support for the Technically Preferred Alternative. The majority of those in support lived in areas affected by the other alternatives. The reasons for

supporting the Technically Preferred Alternative included that Alternative W-2 would be the most effective in relieving traffic congestion from I-35, portions of the proposed right-of-way are already owned by TxDOT, home buying and other financial decisions have been completed based on the assumption that SH 130 would be along the old M-K-T right-of-way, and that Alternative W-2 has been on planning documents and other public information for over ten years.

Three (3) speakers doubted the need for the project. Two (2) of those three requested that TxDOT look at other alternatives such as rail or improvements to I-35.

Two (2) other speakers stated general comments regarding the project.

Attendees at the Public Meeting were also given the opportunity to submit written comments regarding the project. Some written comments were received at the Meeting, while others were mailed or e-mailed to TxDOT. Five petitions were also submitted. A total of 2,146 comments, including the signatures on the petitions, were received. However, it should be noted that many of the people who signed the petitions also sent in separate comments. It can not be assumed that 2,146 people responded to the request for comments. There were 1,711 signatures on the three petitions and 435 individual comments.

The petition representing the residents of the Forest Creek, Forest Ridge, High Country, Morningside Meadows, Oak Bluff Estates, Red Bud Acres, and The Reserve at Oak Bluff areas contained 725 signatures. The petition reads as follows, *“The communities along County Road 122 between Route 79 and just south of Gattis School Road have united to oppose any changes in Williamson County to the Preferred Technical Route of State Highway 130. Furthermore, we want alternatives W-3 and W-4 immediately removed from consideration, as their mere possibility is affecting home sales in the area. We are vehemently opposed to any changes to the Technical Preferred Route for the following reasons:*

The Technical Preferred Route has appeared on planning documents for the City of Round Rock since 1986, also appearing in the Austin Transportation Plan and on commercially produced maps.

As homeowners, parents and taxpayers, we made a conscientious and informed decision to purchase property in this part of Round Rock, partly based on the location of the Technical Preferred Route. It would be wrong to change that route now. It is our assertion that alternatives W-3 and W-4

especially will lower property values and create health and security risks for our families.

As taxpayers, we do not wish to fund alternative routes, when most of the right-of-way has already been purchased along the Technical Preferred Route, and some alternatives require more expensive engineering solutions.

The Technical Preferred Route through east Round Rock was designed to be below grade, whereas the W-3 alternative designed to be above grade near Gattis School Road. The resulting difference in noise pollution is unacceptable

Enclosed you will find signatures from 702 (725 were counted) homeowners in this area demonstrating our resolve to keep this highway from being re-routed into our neighborhoods. We appreciate your support in our efforts.” A separate petition with similar language was submitted by the Forest Creek Estates subdivision with 22 signatures.

Another petition was submitted containing 688 signatures. It read as follows, “The individuals that have signed this document Do Not Support W1 or W2 as a preferred route for SH 130 as it passes through central Round Rock.”

The fourth petition submitted contained 166 signatures and read as follows, “We the undersigned people, hereby declare our support for the Texas Department of Transportation’s ‘Technically Preferred Alternative’ route for SH 130 (MoKan - Segment A) that follows the old M-K-T Railroad right-of-way. Be it known that it is our understanding that the purpose for SH 130 (MoKan) is to relieve traffic congestion on I-35. Also, it is our understanding that according to the project traffic volumes the ‘Technically Preferred Alternative’ route will be the most effective route in relieving traffic congestion from I-35. Furthermore, it is our understanding that the citizens of Texas bought and paid for the right-of-way for the ‘Technically Preferred Alternative’ route from the M-K-T railroad for much of this transportation corridor location in the 1980s and, that if that route is NOT selected, the new right-of-way that will need to be bought for the selected route will be paid for by the taxpayers of Williamson County. Therefore, be it known the We The Undersigned People of Williamson County, do hereby petition the Texas Department of Transportation to keep the ‘Technically Preferred Alternative’ route for SH 130 (MoKan) that follows the old M-K-T Railroad right-of-way as the FINAL route for SH 130 (MoKan).”

The fifth petition was submitted by the Crystal Knoll Homeowners Association. It contained 110 signatures and read as follows, *“The undersigned support the northern most inception point for the proposed State Highway 130 and moving the highway further to the east of the Crystal Knoll subdivision. The signatures below indicate that there is support for a meeting between Sharon Barta of TxDOT, Jim Sommerfield of Project engineers, and David Hays County Commissioner of Williamson County Precinct 3, and the membership of the Crystal Knoll Homeowners Association.”* In addition to the petition, residents of the Crystal Knoll subdivision sent 53 letters detailing their concerns.

As a result of the petition, a meeting was held with the Crystal Knoll Homeowners Association on February 26, 1998. The meeting resulted in a clarification of their concerns. They are concerned that Alternative W-2 is located approximately 800 feet to the east of their subdivision while I-35 is approximately 0.6 miles to the west. Air pollution, noise, public safety, and property values were also among the concerns. They requested that Alternative W-6 north of FM 971 and Alternative W-2 south of FM 971 be used for the alignment of SH 130. They would also like for the roadway to be depressed and noise barriers included.

Two hundred twenty-eight (228) individual commentors stated support for the construction of SH 130 along the alignment of the Technically Preferred Alternative. The majority of the letters in support of the proposed route were from residents in the areas affected by Alternatives W-3, W-4, W-5, and W-6 east of Round Rock. The primary reason for support of the Technically Preferred Alternative (W-2) is that the route on alignment W-2 has appeared on planning documents and has been common public knowledge for many years in the Round Rock area. They have planned and made their home buying decisions accordingly.

One hundred twenty (120) individual comments were received which stated opposition to the Technically Preferred Alternative through the Round Rock-Georgetown area. However, approximately two-thirds of those opposing the Technically Preferred Alternative did mention that SH 130 is needed. The majority of the opposition comments were from residents in Round Rock between Gattis School Road and Bowman Road. Of those in opposition, approximately 40 percent mentioned that the road should be aligned farther to the east, but they did not mention a specific route alternative. Of the specific alternatives mentioned by those opposed to the Technically Preferred Alternative (W-2), Alternative W-3 received support from 13 commentors and Alternative W-6 received the support of 12 commentors. Alternatives W-1, W-4 and W-5 received support from 5, 7, and 5 commentors respectively.

There were several common reasons stated for opposing the Technically Preferred Alternative. Most in opposition are concerned about the noise, visual, local traffic, property value, and public safety effects that they perceive will result from the presence of the roadway. They also feel that a roadway further to the east would be more effective in accommodating the future growth of Williamson County. Additional concerns were for the potential for the route to be designated as a hazardous materials route, light pollution (bright freeway lights), and the impacts to local air quality. Many residents believe that the roadway will introduce new crime to the area. A few residents expressed concern that the project would have impacts to area flood plains, wetlands, trees, and a remnant prairie. There was also a great deal of concern over why the City of Round Rock allowed single family residential development in an area that was proposed for freeway uses. Also, many residents were angry that they were uninformed or misinformed by realtors and homebuilders regarding the development of SH 130.

Seven (7) commentors expressed opposition to the Technically Preferred Alternative in the Pflugerville-Austin area. All seven supported Alternative T-4.

Six (6) commentors supported the idea of a toll road. Five (5) commentors support the idea of terminating SH 130 at the proposed SH 45. Four (4) commentors voiced opposition to SH 130 as a project, and two (2) commentors suggested widening I-35 only. Seven (7) commentors asked for or suggested design modifications for the Technically Preferred Alternative. Six (6) other comments were received which asked questions regarding the project development process and did not state a preference for or against the project or the Technically Preferred Alternative. It should be noted that many people were against the idea of a toll road.

Resolutions were received from Travis County supporting Alternative T-4, the City of Pflugerville supporting Alternative T-3, Williamson County supporting Alternative W-2, the City of Georgetown supporting Alternative W-2, and North America's Superhighway Coalition supporting Alternative T-3 and W-2.

After hearing testimony at the public meeting and subsequent City Council sessions, the Round Rock City Council passed a resolution with the following recommendations:

"1. It is recommended that, starting from the Williamson and Travis County line and moving north, the preferred route should be Alternative W-1 and W-2 until SH 130 intersects with the proposed State Highway 45 (SH 45). At that point, it is recommended that SH 45 be constructed to full freeway status from its intersection

with SH 130, west to its intersection with I-35, thereby providing a direct main lane to main lane freeway connection between I-35 and SH 130.

- 2. It is recommended that the right-of-way for SH 130 north of its intersection with SH 45 be reserved, but that the construction of a freeway section north of SH 45 be postponed until such freeway becomes necessary to alleviate traffic congestion on I-35 between Round Rock and Georgetown. It is further recommended that concurrent with the first phase of construction of SH 130, that an arterial be constructed from the intersection of SH 130 and SH 45 to US 79.*
- 3. It is recommended that the first phase of SH 130 be constructed from SH 45 to at least as far south as US (SH) Hwy 71 at the new Austin Bergstrom Airport.*
- 4. It is recommended that alternatives W-3, W-4, W-5, and W-6 be eliminated from further consideration.”*

8.2.2 Segment B (US 290 to FM 1185)

Five public meetings were conducted for SH 130 Segment B during 1996, 1997 and 1998. These public meetings addressed the entirety of the proposed action, concentrating on the Segment B alternatives referred to as N-I through N-IV, C-I through C-III, and S-I and S-II (see **Figure 8.2-2** and refer to **Table 8.2-1**). Public meetings were held on April 15, 1996 at Del Valle High School in Austin; April 16, 1996 at the Barbara Jordan Elementary School in Austin; June 11, 1996 at the Plum Creek Elementary School in Lockhart; June 26, 1997 at the Barbara Jordan Elementary School; and November 5, 1998 at Barbara Jordan Elementary School. Because of the large number of specific comments recorded at the public meetings and through additional correspondence, the comments for Segment B are presented as **Table 8.2-2**, and summarized in the following subsection.

Comments Received

Although few commentors stated strong support for or opposition to the project as a whole during the first three public meetings, opinions expressed during the fourth and fifth meetings were more strongly held. Of those who expressed a favorable opinion of the project (without advocating any particular alignment) at any of the five meetings or in writing, the reasons given for their support included: relief of traffic congestion and improved public safety on I-35; added

incentive for development towards east Austin; and the promotion of regional economic development. Project opponents cited reasons which included: an insufficiently defined need for the project; negative impacts to east Austin neighborhoods; an insufficient level of traffic relief to I-35; concerns that SH 130 will attract more traffic and congestion which will result in greater environmental impacts; a lack of diversity between the location and types of project alternatives; and a general sense that project funds could be better spent on public transportation improvements or other projects.

Other individuals provided comments in support of or in opposition to particular alternatives, and/or relating to certain types of impacts. The greatest support was voiced for alternative segment N-II, supporters argued that there was: more suitable terrain along the alternative segment N-II corridor; fewer environmental impacts; the perceived economic benefits to portions of east Austin; the greater ability to relieve congestion on I-35; and the lower construction expense and shorter completion date for this alternative. Arguments against alternative segment N-II included: impacts to specific neighborhoods; the creation of high traffic volumes in east Austin; and the exacerbation of existing segregation problems in east Austin. Support for alternative segment N-I generally was based upon the avoidance of the above perceived problems associated with the N-II alternative segment, and a sense that choosing the most easternly alignment would allow urban development to expand eastward. The greatest number of comments were made in opposition to alternative segment N-I for reasons that included: fostering urban sprawl; a high number of residential, farm, and ranch impacts; unsuitable terrain; greater expense; greater environmental impacts; and insufficient traffic relief to I-35. Alternative segment N-IV was generally opposed due to the potential expense and environmental impacts of three bridge crossings of the Colorado River.

Overall, fewer comments have been received specific to the central portion of the corridor than to the northern portion. Remarks made in support of alternative segment C-II included the perception of fewer impacts to farmland and ease of access to I-35. Comments made in support of alternative segment C-I mentioned fewer impacts to existing residences and to Onion Creek, as well as the ease of access to I-35. Those who opposed alternative segment C-I cited greater impacts to farmland. Alternative segment C-III was favored by some based upon its perceived convenient proximity to other area roadways and the airport, as well as minimal impacts to area residences and other property, and to the environment.

Other comments were made both in support of and in opposition to the center rail line concept, and the toll road option. Several individuals requested that still other alternatives be

examined, including new alignments to the east or west of those currently proposed; construction of two roads, one to serve local needs and the other to relieve through traffic; and greater utilization of public land to minimize costs. Many commentors voiced general concerns about various impacts to the natural and human environment from the project, and that project maps were out-of-date and inaccurate at depicting existing conditions within the project area. Finally, several individuals stated neither support for nor opposition to specific alternatives, but requested that the state purchase their property at a fair price if the final highway alignment requires right-of-way acquisition.

Table 8.2-2 Summary of Public Meeting Comments

A = comments received in writing

B = comments made during public meeting of April 15, 1996 at Del Valle High School in Austin

C = comments made during public meeting held on April 16, 1996 at Barbara Jordan Elementary in Austin

D = comments made during public meeting held on June 11, 1996 at Plum Creek Elementary School in Lockhart

E = comments made during public meeting held on June 26, 1997 at Barbara Jordan Elementary School in Austin

F = comments made during public meeting held on November 5, 1998 at Barbara Jordan Elementary School in Austin

Issue/Remark	Number of Comments					
	A	B	C	D	E	F
Opposed to alternative segment N-I (because of residential, ecological, or economic impacts)	144	3			8	6
General concerns about noise, air quality, wildlife, aquatic habitat, other environmental impacts	41	2			7	
Alternative segment N-II is the better alternative because the terrain and soils are more suitable for highway construction than they are along alternative segment N-I	37				4	
Maps and other schematics used by the project team are out-of-date and inaccurate	36					
General support for the technically preferred alternative	139					2
Choice of the technically preferred alternative needs to be made and project needs to be built as soon as possible	10	1			16	2
Alternative segment N-II will be built more quickly	12					
Intermodal use potential and alternative forms of transportation have not been adequately considered	2				9	4
Alternative segment N-II would be cheaper to build than N-I	7				3	
Opposed to SH 130: funds could be better spent on improved mass transit, education, social programs, etc.	7				6	3
Alternative segment N-II would be better than N-I at relieving congestion along I-35 and other area roadways	6				3	
Construction of SH 130 will only attract more traffic and lead to greater congestion, or be obsolete by the time it is completed	4				5	
Alternative segment C-II is best, and C-I is worst, based upon factors such as impacts to farmland and convenient I-35 access	2	2			2	
Avoid the Hornsby Cemetery, and other area cemeteries and family burial plots; road should go east of FM 973	3	1			3	

Table 8.2-2 Summary of Public Meeting Comments
- continued -

Issue/Remark	Number of Comments					
	A	B	C	D	E	F
General support for the toll road option, especially if it accelerates the project	5				1	1
General opposition to alternative segment N-II	9					1
SH 130 should be designed to allow easy access by local residents	1	2		2		
A more eastern alignment would allow more room for Austin to expand eastward	1	1			3	
General opposition to the toll road concept	2	1		2	1	1
Proposed alignments need to incorporate room for HOV lanes and/or mass transit	3				2	
Alternative segment C-I is best because it creates fewer impacts to residences and Onion Creek; more favorable proximity to the airport	5					1
Additional alternatives should be considered	3				2	
General support for alternative segment N-I (due to less impact on development and less traffic in east Austin, less expensive than N II)	11					6
Expense and environmental impacts associated with three Colorado River crossings (alternative segment N-IV) seem excessive	2	1			1	
There has been an insufficient level of communication between the project team and residents	1	3				
Feasibility of the toll road option is questionable, especially with freely accessible frontage roads and “free” I-35; might discourage truck traffic from using SH 130	2				2	
Suggest a route away from FM 973 that would utilize farmland, the City of Austin’s former landfill, and other government property, and lessen the impacts to residential areas	1	1	1		1	
When considering impacts, should give greater weight to existing residences and businesses along the west corridor over proposed development along the east corridor	1				3	
Construction of a western alignment will exacerbate the existing segregation problem for east Austin	2				2	
Alternative segment N-II and other western alternatives would negatively impact the Windsor Park Neighborhood					3	1
Belief that SH 130 is not so much for NAFTA traffic as it is for facilitating commuter traffic flow to the Williamson County suburbs					3	
The possibility that disproportionate impacts to minorities may occur should be more thoroughly explored than in the MIS					3	
Increased traffic associated with SH 130 will contribute to the decline in Austin’s air quality					3	
Concerns about impacts to Del Valle ISD schools and other area schools	1	1	1			
Desire effective noise abatement measures	1	1			1	
I-35 traffic is dangerous; TxDOT needs to do something about this in the intermediate term, such as construction of “truck only” lanes	1	1			1	

Table 8.2-2 Summary of Public Meeting Comments
- continued -

Issue/Remark	Number of Comments					
	A	B	C	D	E	F
Concerns about hazardous substances, such as the ability of transport trucks to handle proposed curves, and whether plans have been considered for response to spills	1		1		1	
The influence of politicians in the decision-making process should be limited	3					
Alternative segment N-I will not adequately relieve traffic on I-35	3					
East Austin is always saddled with projects that west Austin doesn't want	3					
SH 130, and alternative segment N-I in particular, may negatively impact regional development patterns and encourage urban sprawl	1				1	
Concerns about rapid access to SH 130 by emergency vehicles	1			1		
Concerns about the source and availability of funds	1			1		
SH 130 should be designed with future expandability in mind	1		1			
Alternative segment N-II would better relieve traffic through east Austin, especially truck traffic; alternative segment N-I would bring greater traffic through east Austin					2	
The western alternatives are too close to the city and would bring too much traffic into east Austin					2	
Doubts about whether the center rail line is feasible or is being seriously considered					2	1
Need to seriously consider the center rail line option					2	1
Project justification is flawed, based upon out-dated and inaccurate data	2					
There appears to be a paucity of west-to-east connections to SH 130 (especially from west Austin)	1		1			
Concerns over an increase in property taxes to finance highway construction and maintenance	1			1		
Additional traffic from Bergstrom Airport should be considered	1				1	
Alternative segment N-II will isolate and diminish the quality of certain grazing tracts; live stock "tunnels" should be incorporated into the design, where needed	2					
SH 130 should be built far from high density residential areas	2					
SH 130 will increase traffic and damage streets in east Austin	2					
Use of US 183 for the south segment of SH 130-B may substantially decrease the value of adjacent property	2					
Alternative segment C-I would negatively impact home/ranch/farm	2					
It appears that the alignment for alternative segments C-I and C-II have been modified since the 1996 public meetings	2					
Choices for the SH 130 (entire project) northern and southern terminus are questionable	1					

Table 8.2-2 Summary of Public Meeting Comments
- continued -

Issue/Remark	Number of Comments					
	A	B	C	D	E	F
Impacts to regional and local water usage should be fully considered; coordinate with the Texas Water Development Board	1					
Alternative segment C-III is the most feasible route when considering relationship of SH 130 to existing and proposed area roadways, airport access, residential impacts, property acquisition, environmental impacts	1					1
Willing to donate 22 ac along FM 973 if C-III is chosen	1	1				
Would like the chosen alignment to go east of the Garden Valley neighborhood		1				
Would like to see incorporation of tunnels beneath the completed highway to allow for future installation of utility lines		1				
Consider an alternative for Segment B that utilizes the existing US 183 all the way from US 290 southward		1				
Design safe entry and exit ramps from/to frontage roads		1				
There is an inequity in the percentage of the shared costs by different counties/municipalities			1			
Curious about the rationale for designing all of the alternative segments to the east rather than west of I-35				1		
Prefer alternative segment N-II because it will bring much-needed business and services to east Austin.					1	
Opposition to the subsidizing of rail lines					1	
SH 130 should be constructed with frontage roads					1	
Prefer a parkway design rather than a freeway	1					
Feeder roads to alternative segment N-I are inadequate in number and size	1					
Alternative segment N-I will negatively impact a City of Manor municipal drinking water tank	1					
Alternative segment N-I will negatively impact a home/ranch/farm	1					
Alternative segment N-I will negatively impact cultural resources along its alignment	1					
Item-by-item cost comparison would probably show alternative segment N-I to be most expensive and alternative segment N-II to be least expensive	1					
Alternative segment S I is preferable because it is straighter	1					
Bicycle lanes along a highway are impractical	1					
TxDOT should consider building two roadways: SH 130 east of Lake Long as a truck by-pass; and "Mo Kan" along the rail right-of-way to ease local traffic on I-35	1					
Traffic relief on I-35 is too low to justify alternative segment N-I	1					1

Table 8.2-2 Summary of Public Meeting Comments
- continued -

Issue/Remark	Number of Comments					
	A	B	C	D	E	F
Construction of a spur between Georgetown and US 183 might be more appropriate than the currently proposed SH 130	1					
SH 130 should primarily serve as a by-pass for truck traffic	1					
Alternative segment C-I would result in greater fuel costs and impacts to the Del Valle School	1					
Neither alternative segment C-I nor C-II fully utilize existing road or utility right-of-way	1					
Eliminate N-I interchange with FM 973 and FM 969 to minimize residential displacements						1
Alternative segments N-II, N-III and N-IV would have adverse impacts to east Austin						2
Alternative segments N-II, N-III and N-IV would create a barrier between Austin and Decker Lake. These alternatives are too close to LBJ High School and Jordan Elementary School						1
The Sierra Club opposes this highway						1
If the roadway has to be built, build it on the TxDOT preferred route	2					1
SH 130 is being designed to serve suburban sprawl. Bypass routes don't work. SH 130 is a developer bail-out. Concern over taxpayers having to pay for SH 130 when toll revenues don't pan out						1
General support for C-I	1					1
Opposed to SH 130 because of the loss of farmland.						1
Colony Park (N-II alignment) is a dump site for nuclear waste from Bergstrom AFB						1
SH 130 should be built with frontage roads, and the alignment should be straight.						1
Better notification of people who will be displaced	1					
General support for C-II	2					
Opposed to residential displacement along US 183	1					
Opposed to N-IV	4					
Support for C-I and N-I	1					
Favors whichever route will carry the most traffic. Ignore the NIMBY argument	1					
Southeast Baptist Church prefers C-III (which would displace their church)	1					
TxDOT's project development process is flawed because it inadequately addresses the large-scale, long-term environmental and social impacts attributable to land use conversion.	1					

8.2.3 Segment C (FM 1185 to I-10)

A total of six public meetings were held for SH 130 Segment C. All meetings addressed the proposed action from Georgetown to Seguin, focusing on alternatives within the Segment C portion, known as alternatives A through I (see **Figure 8.2-3** and refer also to **Table 8.2-1**).

8.2.3.1 June 17, 1997

The purpose of this public meeting, held at Plum Creek Elementary School Cafeteria in Lockhart, Texas, was to gather public input on proposed locations for SH 130 to assist in the development of possible alignments. TxDOT staff were assisted at the meeting by the project engineers, including the Project Manager, John C. Kight, P.E. One hundred twenty-five (125) people attended the meeting, with twenty-one (21) people speaking on the record. In addition, twenty-four (24) comment sheets (provided with the agenda) were received by mail.

The public meeting began at 6:00 p.m. with an open house. Participants were able to examine the public meeting documents and exhibits and informally discuss the project with TxDOT and project engineers. The exhibits included:

- 1.1.5 Typical Sections
- 1.1.6 Austin/San Antonio Corridor map (From Georgetown to San Antonio)
- 1.1.7 County Roadway Map with Alignments
- 1.1.8 Digital Orthophotography Constraints Map with Alternative Alignments
- 1.1.9 Topographical Slope Analysis Map

At 7:00 p.m., John Kight, P.E. began the public meeting with an introduction of TxDOT staff and project engineers. Joseph Carrizales, P.E. with TxDOT followed with an explanation of the current status of SH 130, Segment C and the purpose of the public meeting. Mr. Kight reviewed the history of this project which began in the 1980's and of the 1991 ISTEA which provided funds to TxDOT to study and develop the proposed alignment for SH 130. Mr. Kight then discussed and explained the public meeting exhibits and discussed the procedure for developing alternative alignments for SH 130. He noted that this public meeting was to obtain public input which would be used to develop several alternate alignments and be presented at the second public meeting in September. This was then followed by a comment period for all wishing to speak.

Caldwell County Judge Rebecca Hawener, Lockhart Mayor John Allred, Caldwell County Commissioner Ronnie Duesterheft all endorsed the SH 130 Task Force preferred alignment. The SH 130 Task Force is an advisory committee organized by both the City of Lockhart and Caldwell County. The Task Force includes private citizens, city and county officials. Judge Hawener, Commissioner Duesterheft, and Mayor Allred all noted that Caldwell County could not afford the 50 percent right-of-way cost as agreed by the County and TxDOT in 1989. This agreement between TxDOT and Caldwell County was tendered with a Minute Order. Judge Hawener said she would ask the Texas Transportation Commission to reduce the County's obligation for right-of-way cost from 50 percent to 10 percent as currently allowed by TxDOT.

A concern raised at this meeting was the use and placement of frontage roads. Speakers did not want to be cut off or be routed far distances to cross the highway. In addition, the local farmers felt that the slow moving or hauling of farm equipment would be unsafe on a high-speed highway. Other comments included the following:

- Five (5) speakers spoke in favor of SH 130, Segment C and want the state highway to be built.
- Nine (9) speakers spoke against the completion of SH 130, Segment C at any location.
- Two (2) speakers requested the study limits be revised or modified to include US 83 from Lockhart to Luling.
- Two (2) speakers spoke to request frontage roads be provided to allow access to adjacent property.
- The remaining speakers asked questions about acquisition of right-of-way, the future of toll roads, and TxDOT's authority to build or not to build a highway.

Twenty-four (24) written comments were received from the first public meeting. The written comments are summarized as follows:

- Two (2) people wrote in favor of SH 130, Segment C and want the state highway to be built.

- Fourteen (14) people wrote against the completion of SH 130, Segment C at any location.
- Eleven (11) people wrote in favor of the proposed alignment of be west of Lockhart.
- Two (2) people wrote in favor of the proposed alignment to be east of Lockhart.
- Three (3) people wrote to request the study limits be revised or modified to include US 183 from Lockhart to Luling. A second proposal was to follow SH 21 from US 183 west to San Marcos and then south along SH 123 to Seguin.
- Several landowners along FM 20 wrote against the completion of SH 130. Their concerns are the possible development that may occur along SH 130 and their proximity to a highway.

8.2.3.2 June 12, 1997

This public meeting, held in the Seguin Coliseum, was the first public meeting for SH 130 in Seguin. The purpose of this public meeting was to gather public input on the proposed location of SH 130. The public meeting was advertised for thirty (30) days in the Seguin Gazette and TxDOT issued press releases to the local media including the Austin American-Statesman. The attendance at the meeting was ninety (90) people with fourteen (14) people speaking on the record. In addition, twenty-eight (28) comment sheets (provided with the agenda) were received by mail.

The meeting began at 6:00 p.m. with an open house. Participants were able to examine the public meeting documents and exhibits and informally discuss the project with staff from TxDOT and the consultants. These exhibits included:

- Typical Sections
- Austin/San Antonio Corridor Map (From Georgetown to San Antonio)
- County Roadway Map with Study Limit
- Digital Orthophotography Constraints Map with Study Limit
- Topographical Slope Analysis Map

At 7:00 p.m., John Kight, P.E. began the public meeting with an introduction of TxDOT and consultant representatives followed by an explanation of the current status of SH 130, Segment

C and the purpose of the public meeting. Mr. Kight reviewed the history of this project and discussed and explained the public meeting exhibits and the procedure in developing alternate alignments. He noted that this public meeting was to obtain public input which would be used to develop several alternate alignments and be presented at the second public meeting in September. This was then followed by a comment period for all wishing to speak.

Guadalupe County Judge Jim Sagebiel, Seguin Mayor Mark Stautzenberger, and Sydnor Bauer, Chairman of the Transportation Committee of the Seguin Chamber of Commerce, all endorsed the need for the completion of SH 130 with the terminus at the intersection of I-10 and US 90A, east of Seguin. Following the endorsement by city officials to provide the SH 130 terminus at US 90A, five (5) speakers spoke against this recommendation. Two alternate terminus locations at I-10 were proposed by these speakers at SH 123 and SH 46.

One speaker noted that future rail services using the SH 130 corridor would not go through town (Seguin) for service to San Antonio if the terminus were at SH 46, west of town.

The remaining speakers were either in favor or against completion of SH 130. Those against the completion of SH 130 commented that the alignment should be along US 183 from Lockhart to Luling and not from Lockhart to Seguin. Four (4) speakers spoke in favor of SH 130 and want the state highway to be built. One (1) speaker spoke against the completion of SH 130 at any location. One (1) speaker, a property owner adjacent to FM 20, did not want the alignment along FM 20. Two (2) speakers wanted frontage roads to provide access to adjacent property. One (1) speaker requested the study limits be revised or modified to include US 183 from Lockhart to Luling.

Six (6) people wrote in favor of SH 130 and want the state highway to be built. Four (4) people wrote against the completion of SH 130 at any location. Five (5) people wrote concerning the study limits. These people want to revise or modify the study limits to include US 183 from Lockhart to Luling. A second proposal was to follow SH 21 from US 183 west to San Marcos and then south along SH 123 to Seguin. Ten (10) peoples wrote to request that the terminus of SH 130 be at SH 46 and I-10. Nine (9) people wrote to request that the terminus of SH 130 be at US 90A and I-10. One (1) person wrote to request that the terminus of SH 130 be at SH 123. Seven (7) property owners who live near or along FM20 wrote against the alignment of SH 130 along FM 20. Their concerns are the possible development that may occur along SH 130 and their near proximity to a highway.

8.2.3.3 September 30, 1997

The second SH 130 public meeting held in Lockhart was at Plum Creek Elementary School. The purpose of this public meeting was to obtain public input on the proposed Alternative Alignments for SH 130, Segment C. The input from this public meeting will be used to develop the Technically Preferred Alignment. This alignment will be presented at the next public meeting. The public meeting was advertised for thirty (30) days in the Lockhart Post Register and TxDOT issued a press release to the local media including the Austin American Statesman. The attendance at the meeting was 202 people with thirty (30) people speaking on the record. Forty-six (46) comment sheets (provided with the agenda) or written statements were received by mail. In addition to the written comments two (2) resolutions were received and one (1) petition. The resolutions were from the City of Lockhart and the Lockhart Chamber of Commerce. The petition containing forty (40) signatures is for a voter referendum.

The public meeting began at 6:00 p.m. with an open house. Participants were able to examine the public meeting documents and exhibits and informally discuss the project with staff from TxDOT and the consultants. These exhibits included:

- Typical Sections
- Austin/San Antonio Corridor map (From Georgetown to San Antonio)
- County Roadway Map with Alignments
- Digital Orthophotography Constraints Map with Alternative Alignments
- Topographical Slope Analysis Map

At 7:00 p.m., John Kight, P.E. began the public meeting with an introduction of TxDOT and consultant representatives. Joseph Carrizales, P.E. with TxDOT followed with an explanation of the current status of SH 130 and the purpose of the public meeting. Mr. Carrizales also addressed several questions raised at the first public meeting. Mr. Kight then discussed and explained the public meeting exhibits and detailed the procedure in developing alternative alignments for SH 130, Segment C. Mr. Kight noted that the purpose of this public meeting was to obtain public input to be used to select the Technically Preferred Alignment to be presented at the third public meeting at the beginning of 1998. This was then followed by a comment period for all wishing to speak.

The first speaker was City of Lockhart Mayor John Allred. Mayor Allred spoke in favor of SH 130, Segment C and presented Resolution 97-19 endorsing SH 130 and Alternative Alignment

B. Additional elected and civic leaders also spoke in favor of SH 130, Segment C and Alternative Alignment B. From the City of Lockhart City Councilman Ray Sanders spoke in favor of SH 130. From the county, Commissioners Ronnie Duesterheft and Morris Alexander spoke in favor of SH 130. The superintendent of Lockhart Independent School District, Tony Jones, spoke in favor of SH 130. Civic leaders John Clary, Economic Director for the City of Lockhart, and Mark Hinnenkamp, Chairman of the Lockhart Chamber of Commerce also spoke in favor of SH 130. Two representatives of the SH 130 Task Force, Cindy Johnson and Jim Stephens spoke in favor of SH 130 and Alternative Alignment B. From the Austin-San Antonio Corridor Council, Mr. David Robinson spoke concerning the regional nine (9) county benefit of SH 130 and encouraged support from the citizens.

In summary, the remaining speakers spoke both in favor and against SH 130. Thirteen (13) speakers spoke in favor of SH 130 and five (5) speakers spoke against SH 130. Two (2) speakers spoke against Alternative Alignment B. The speakers comments are outlined as follows:

Seven (7) speakers spoke in favor of SH 130, Segment C and want the State Highway to be built.

Five (5) speakers spoke against the completion of SH 130, Segment C at any location. These speakers felt the highway would result in too much traffic. They did suggest modifying the study limits to include US 183 from Lockhart to Luling.

Two (2) speakers spoke in favor of Alternative Alignment A.

Four (4) speakers spoke in favor of Alternative Alignment B.

Two (2) speakers spoke against Alternative Alignment B. They felt the alignment was too close to Lockhart and would result in too much traffic.

In general, the speakers against SH 130 felt the highway would cause an increase in traffic, increase in development, would be too expensive, or would like to see a different study limit.

Of the written comments received, fourteen (14) people wrote in favor of Alternative Alignment A and seventeen (17) people wrote in favor of Alternative B. Three (3) people wrote against the proposed Alternative B. Four (4) people wrote in favor of the completion of SH 130, Segment C. Eight (8) people wrote against the completion of SH 130, Segment C at any location.

They do not want the highway to be built. Included in the received written comments were five (5) people requesting the study limits be revised or modified to include US 183 from Lockhart to Luling. A second proposal was to follow SH 21 from US 183 west to San Marcos and then south along SH 123 to Seguin.

The City of Lockhart passed Resolution 97-19 in favor of Alternative Alignment B. The Lockhart Chamber of Commerce also passed a resolution in favor of Alternative Alignment B. One petition was received with forty (40) signatures requesting a public vote.

8.2.3.4 September 25, 1997

The second SH 130, Segment C public meeting held in Seguin was also at the Seguin Coliseum. The purpose of this public meeting was to obtain public input on the proposed Alternative Alignments for SH 130, Segment C. The input from this public meeting will be used to develop the Technically Preferred Alignment. This alignment will be presented at the next public meeting.

The public meeting was advertised for thirty (30) days in the Seguin Gazette and TxDOT issued a press release to the local media including the Austin American-Statesman. The attendance at the meeting was 120 people with fifteen (15) people speaking on the record. 194 comment sheets (provided with the agenda) or written statements were received by mail. In addition to the written comments, seven (7) resolutions and three (3) petitions with a total of 146 signatures were received.

The public meeting began at 6:00 p.m. with an open house. Participants were able to examine the public meeting documents and exhibits and informally discuss the project with staff from the consultants and TxDOT. These exhibits included:

- Typical Sections
- Austin/San Antonio Corridor Map (From Georgetown to San Antonio)
- County Roadway Map with Alternative Alignments
- Digital Orthophotography Constraints Map with Alternative Alignments
- Topographical Slope Analysis Map

At 7:00 p.m., John Kight, P.E. began the public meeting with an introduction of TxDOT and consultant representatives. Joseph Carrizales, P.E. with TxDOT followed with an explanation of the current status of SH 130, Segment C and the purpose of the public meeting. Mr. Carrizales

also addressed several questions raised at the first public meeting. Upon completion, Mr. Kight discussed and explained the public meeting exhibits and procedure in developing alternative alignments for SH 130, Segment C. Mr. Kight noted that the purpose of this public meeting was to obtain public input to be used to select the Technically Preferred Alignment to be presented at the third public meeting at the beginning of 1998. This was then followed by a comment period for all wishing to speak.

The first several speakers were elected officials and civic leaders presenting resolutions that endorsed SH 130, Segment C and called for the terminus to be east of Seguin at or near the intersection of I-10 and US 90. City of Seguin Mayor Mark Stautzenberger presented two resolutions from the City of Seguin and the Seguin Independent School District. Guadalupe County Judge Jim Sagebiel presented a resolution from Guadalupe County. Mr. Robert Roach, City of Seguin Director of Planning and Development and Mr. Steve Flipowicz, City of Seguin Economic Director, both presented resolutions from their respective city departments. The last resolution presented was from Sydney Bauer, Chairman of the Seguin Chamber of Commerce. An additional resolution from the Seguin Board of Realtors was also received. Commissioner Guadarrama did present an additional alternative alignment. This alignment followed alignment B in Caldwell County but changed directions in Guadalupe County. In Guadalupe County the alignment paralleled alignments A and B and was approximately centered between alignments A and B.

Remaining speakers spoke both for and against SH 130. Three (3) speakers spoke for the completion of SH 130, Segment C but did not recommend a specific alignment. Two (2) speakers spoke for the terminus of SH 130 to be at the intersection of I-10 and SH 123 or west of SH 123. Three (3) speakers spoke against Alternative Alignment B along FM 20. These speakers felt that the highway would cause major disturbance and disruption within the county. One (1) speaker spoke against SH 130 in its present study limits. The speaker requested the study limits be revised or modified to include US 183 from Lockhart to Luling.

Of the written comments, nine (9) people wrote in favor of SH 130, Segment C and want the state highway to be built (no specific alignment was recommended). Nine (9) people wrote against the completion of SH 130, Segment C. Four (4) people wrote concerning the study limits. These people want to revise or modify the study limits to include US 183 from Lockhart to Luling. A second proposal was to follow SH 21 from US 183 west to San Marcos and then south along SH 123 to Seguin. Four (4) people wrote in favor of Alternative Alignment A. Four (4) people wrote in favor of Alternative Alignment B. Five (5) people wrote against Alternative Alignment B. One

hundred and fifty-one (151) people wrote in favor of Alternative Alignment C. One (1) person wrote in favor of Alternative Alignment E.

Resolutions were received from the Seguin Board of Realtors, City of Seguin Planning Commission, City of Seguin Economic Development, Seguin Independent School District, City of Seguin, Guadalupe County, and the Seguin Chamber of Commerce.

A petition with ten (10) signatures was received in favor of Alternative Alignment A. A petition with twenty-four (24) signatures was received against Alternative Alignments C and E. A petition with 112 signatures was received against Alternative Alignments C and E. The majority of the petitioners live in Prairie Lea and Kingsbury.

8.2.3.5 December 2, 1998

General/Background

On Wednesday, December 2, 1998, a public meeting was held for Segment C of proposed SH 130. The limits of Segment C extend from US 183 at FM 1185 north of Lockhart, Texas, to I-10 near Seguin, Texas. The meeting was held in the Seguin Coliseum at 810 South Guadalupe Street in Seguin, Texas. Public notice of the meeting was published in the Seguin Gazette and the Lockhart Post-Register.

The purpose of the public meeting was to disseminate information to the public and to obtain additional public input concerning the purpose and need for the proposed action and possible alignment alternatives. The meeting also served as a forum to officially notify the public that the proposed action is now being developed as a toll road candidate.

Each attendee was asked to sign-in by supplying their name, address and telephone number. Each attendee was offered an information packet that contained the following information:

- an introduction welcoming the public to the meeting and explaining the meeting format;
- a meeting agenda;
- a brief project overview;
- a map identifying alignment alternatives being studied;
- a diagram displaying proposed typical sections; and

- a citizen's comment sheet.

Speaker registration forms were provided at the sign-in table and made available to each attendee who desired to speak during the public comment portion of the meeting.

Exhibits available for viewing included the following:

- aerial photography displaying alignment alternatives and environmental constraints; and
- proposed typical roadway sections.

The meeting began at 6:00 p.m. with an open house period to provide participants an opportunity to examine the proposed project's exhibits and ask questions of the Texas Turnpike Authority (TTA) and consultant team personnel in attendance for that purpose.

The open house period was followed by a formal presentation, which began at 7:00 p.m. The formal presentation, which included a comprehensive overview of the project, was made with the use of visual aids. At the conclusion of the formal presentation, a brief intermission was observed to allow the public another opportunity to view exhibits and ask questions. The intermission was followed by a public comment period.

Approximately 130 people signed in for attendance at the public meeting.

Introductions And Presentation

Mr. David Kopp, TTA's SH 130 Project Manager, initiated the formal presentation.

Mr. Kopp began by welcoming the audience to the public meeting and thanking them for their participation. He proceeded to explain the proposed project limits, meeting format and opportunities for public comment. He then recognized and introduced local officials and TTA staff members in the audience.

Following the introductions, Mr. Kopp discussed the major investment study (MIS) and environmental impact statement (EIS) processes.

He explained that in accordance with provisions of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), a MIS was conducted to determine the transportation mode type most appropriate for the SH 130 corridor.

He explained that the MIS concluded that SH 130 should be developed as a controlled access freeway/parkway and that consideration should be given to the placement of high-occupancy vehicles lanes, bicycle and pedestrian facilities, and freight, light and/or commuter rail within the corridor. He went on to explain that the Capital Area Metropolitan Planning Organization (CAMPO, formerly the Austin Transportation Study, the metropolitan planning organization for the Austin area) conditionally endorsed the SH 130 MIS in July of 1997.

Next, Mr. Kopp explained that the proposed action is being developed in accordance with the National Environmental Policy Act of 1969 (NEPA). He explained that a draft EIS is being developed that provides for the evaluation of alternatives (including the No-Action Alternative).

He indicated that a public hearing on the proposed action would be held at the appropriate time to present the Preferred Alternative and to allow for additional public comment.

Mr. Kopp explained that, at this point, the project is being developed as a toll road candidate. He explained that toll financing is an innovative financing tool and that through the use of tolls and bond financing, it is estimated that SH 130 could be open to traffic much earlier than with traditional funding sources.

Mr. Kopp concluded his portion of the presentation by stating that, at this point in project development, everything is tentative and nothing is definite.

He also explained that TTA, as a newly created division of the Texas Department of Transportation (TxDOT), is developing policies to govern right-of-way acquisition and relocation and that those policies will be finalized and in place prior to the public hearing.

Mr. Kopp then introduced Mr. John Kight, SH 130 Project Manager for Dannenbaum Engineering Corporation.

Mr. Kight briefly reviewed the need for the project, its past history and the anticipated schedule for further development. He then introduced additional Dannenbaum staff members and subconsultants.

Mr. Kight explained that the field of preliminary alignment alternatives, many of which had been presented at prior public meetings, had been narrowed down to five. He identified those five alternatives as Alignments A, B, C, H, and I. He explained that an evaluation matrix was used to assist the project team in evaluating the preliminary alternatives and briefly discussed the results of the matrix process.

After presenting the overall length and estimated cost of the five alternatives, Mr. Kight used exhibits of the alignment alternatives (with an aerial photography background) to present each alternative in detail. In addition, while presenting the various alignment alternatives, he drew particular attention to crossings of existing roadways and other land use features.

During his presentation, Mr. Kight noted the location of proposed grade separations and interchanges.

He announced that Alignment H is considered the “technically preferred alternative” and explained the basis for that recommendation.

Before concluding his presentation, Mr. Kight explained that all five of the alternatives presented during the meeting along with the No-Action Alternative would be evaluated further through the Draft EIS process.

He then reminded the audience to make use of speaker registration cards and/or take advantage of project team members who would be available to answer questions during the break. An intermission was observed at this point.

Verbal Public Comments

Mr. Kopp initiated the public comment portion of the meeting. In the interest of time, speakers were asked to limit their comments to three minutes.

Seventeen individuals registered to speak. However, four individuals either left before speaking or declined when their name was called. Thirteen individuals presented verbal comments.

An individual, who identified himself as a representative of Citizens for an Alternative Route (CAR), stated that as a group CAR had endorsed Alternate H. He submitted a petition, signed by approximately 500 individuals, supporting Alternate H (see **Written Public Comments**).

Three individuals (representing the City of Seguin, the Seguin Chamber of Commerce, and the Seguin Economic Development Corporation) expressed support for SH 130. Two of the three spoke favorably of Alternative H. And two of these three expressed opinions supporting the toll feasibility study as a means of expediting development of the project.

One individual indicated that proposed SH 130 “is inevitable” and expressed “reluctant” support for Alternative H.

Another individual, who did not express support or opposition to the proposed action as a whole, expressed opposition to Alternative H due to the impact it would have on his property. The speaker requested that Alternative H be modified to follow his property line.

Three individuals expressed opposition to SH 130. One of these individuals identified himself as a landowner and the owner of a trucking company. He stated that it is their opinion that truckers would not utilize a toll road.

Another individual, who did not specifically express support or opposition to the proposed action, expressed environmental concerns and the need to improve existing roadways.

An individual, who identified himself as a representative of Commuter Choices Coalition, stated that the project funding should be used to provide more mode choice options and that only if the expanded options don't work, should SH 130 be constructed.

A representative of the Austin Regional Group of the Sierra Club stated that their organization opposes the construction of SH 130. This individual questioned the cost benefit of the proposed action and indicated that the project would be even less beneficial as a toll road. The speaker also expressed environmental concerns.

An individual who identified himself as a transportation reform activist questioned the need for the proposed roadway. The individual stated it is in their opinion that SH 130 is not being developed as a multimodal facility and indicated that more information is necessary in order for the public to make an informed decision.

Meeting Adjournment

There being no additional speakers, Mr. Kopp officially adjourned the public meeting at 8:15 p.m.

Written Public Comments

The public was given the opportunity to submit written comments to be included in the official record of the public meeting. Written comments were accepted at the meeting and for 10 days subsequent to the meeting. A total of 14 written comments were received (including a petition with approximately 500 signatures).

Six of the comments expressed general opposition to SH 130, citing reasons such as environmental concerns, impacts to individual properties and inefficient use of tax revenue.

One individual expressed support for Alternative H. Another individual expressed an opinion opposed to Alternative B.

Two individual comments concerned a commercial aviary and the need for a noise barrier adjacent to the property in order to protect the “natural and quiet environmental” required by the birds.

Another individual's written comments expressed support for the “concept and need for the project.” This individual expressed frustration over the length of the project development process and indicated support for the toll concept as a means of expediting construction.

Another individual questioned the purpose and need for SH 130. This same individual expressed specific concerns regarding the project development process; the adequacy of the MIS and other planning activities; and farmland impacts.

The executive director of the Capital Area Transportation Coalition submitted a statement indicating that the Coalition “strongly supports the accelerated implementation of all three segments of SH 130 as a freeway or a toll road.”

In addition to the comments addressed above, a petition was received. Approximately 500 individuals signed the petition. By signing the petition, the individuals expressed support for Alternative H, while specifically opposing Alternatives A, B, C, D, F and I.

8.2.3.6 December 8, 1998

General/Background

On Tuesday, December 8, 1998, a public meeting was held for Segment C of proposed SH 130. The limits of Segment C extend from US 183 at FM 1185 north of Lockhart, Texas, to I-10 near Seguin, Texas. The meeting was held in the cafeteria of the Plum Creek Elementary School at 710 Flores Street in Lockhart, Texas. Public notice of the meeting was published in the Seguin Gazette and the Lockhart Post-Register newspapers.

The purpose of the public meeting was to disseminate information to the public and to obtain additional public input concerning the purpose and need for the proposed action and possible alignment alternatives. The meeting also served as a forum to officially notify the public that the proposed action is now being developed as a toll road candidate.

Each attendee was asked to sign-in by supplying their name, address and telephone number. Each attendee was offered an information packet that contained the following information:

- an introduction welcoming the public to the meeting and explaining the meeting format;
- a meeting agenda;
- a brief project overview;
- a map identifying alignment alternatives being studied;
- a diagram displaying proposed typical sections; and
- a citizen's comment sheet.

Speaker registration forms were provided at the sign-in table and made available to each attendee who desired to speak during the public comment portion of the meeting.

Exhibits available for viewing included the following:

- aerial photography displaying alignment alternatives and environmental constraints; and
- proposed typical roadway sections.

The meeting began at 6:00 p.m. with an open house period in order to provide participants an opportunity to examine the proposed project's exhibits and ask questions of the TTA staff and consultant team personnel on hand for that purpose.

The open house period was followed by a formal presentation, which began at 7:00 p.m. The formal presentation, which included a comprehensive overview of the project, was made with the use of visual aids. At the conclusion of the formal presentation, a brief intermission was observed to allow the public another opportunity to view exhibits and ask questions. The intermission was followed by a public comment period.

Approximately 160 people signed in for attendance at the public meeting.

Introductions and Presentation

Mr. David Kopp, TTA's SH 130 Project Manager, initiated the formal presentation.

Mr. Kopp began by welcoming the audience to the public meeting and thanking them for their participation. He proceeded to explain the proposed project limits, meeting format and opportunities for public comment. He then recognized and introduced local officials and TTA staff members in the audience.

Following the introductions, Mr. Kopp discussed the major investment study and environmental impact statement processes. He explained that in accordance with the provisions of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), a major investment study was conducted to determine the transportation mode type most appropriate for the SH 130 corridor.

He explained that the major investment study concluded that SH 130 should be developed as a controlled access freeway/parkway and that consideration should be given to the placement of high-occupancy vehicles lanes, bicycle and pedestrian facilities, and for freight, light and/or commuter rail within the corridor. Mr. Kopp emphasized that SH 130 is designed to be compatible with rail.

Next, Mr. Kopp explained that the proposed action is being developed in accordance with the National Environmental Policy Act of 1969 (NEPA). He explained that a draft environmental impact statement (Draft EIS) is being developed that provides for the evaluation of alternatives (including the No-Action Alternative).

He indicated that a public hearing on the proposed action would be held at the appropriate time to present the preferred alternative and to allow for additional public comment.

Mr. Kopp explained that, at this point, the project is being developed as a toll road candidate. He explained that toll financing is an innovative financing tool and that through the use of tolls and bond financing, it is estimated that SH 130 could be open to traffic much earlier than with traditional funding sources.

Mr. Kopp concluded his portion of the presentation by stating that, at this point in project development, everything is tentative and nothing is definite.

He also explained that TTA, as a newly created division of the Texas Department of Transportation (TxDOT), is developing policies to govern right-of-way acquisition and relocation assistance and that those policies will be finalized and in place prior to the public hearing.

Mr. Kopp then introduced Mr. John Kight, SH 130 Project Manager for Dannenbaum Engineering Corporation.

Mr. Kight briefly reviewed the need for the proposed project and its past history. He then introduced additional Dannenbaum staff members and subconsultants in attendance.

Mr. Kight explained that the field of preliminary alignment alternatives had been narrowed down to five. He explained that an evaluation matrix was used to assist the project team in evaluating the preliminary alignment alternatives and briefly discussed the results of the matrix process.

During the course of this discussion, Mr. Kight fielded questions from members of the audience.

Next, Mr. Kight used exhibits of the alignment alternatives (with aerial photography in the background) to display each one in detail. In addition, while presenting the various alignment

alternatives, he drew particular attention to crossings of existing roadways and other land use features.

During his presentation, Mr. Kight, generally, noted the length and estimated cost of the various alignment alternatives and pointed out the location of proposed grade separations and roadway interchanges.

Mr. Kight announced that Alternate H is considered the “technically preferred alternative” and explained the basis for that recommendation.

Mr. Kight then reiterated that all five of the alignment alternatives presented during the meeting, along with the No-Action Alternative, would be evaluated further through the Draft EIS process. He then fielded questions from the audience.

Next, Mr. Kopp further explained the alternatives' evaluation matrix displayed and its role in the project development process. He stated that the matrix is a tool used by project planners, and that it is not a required element of the EIS process. An intermission was observed at this point.

Verbal Public Comments

Mr. Kopp initiated the public comment portion of the meeting. In the interest of time, speakers were asked to limit their comments to three minutes.

Thirty-three individuals registered to speak. However, three individuals either left before speaking or declined the opportunity when their name was called. One individual spoke at the end of the public comment session, but did not fill out a speaker registration card.

A total of thirty-one individuals presented verbal comments.

Ten speakers expressed support for proposed SH 130. These speakers included the current Mayor of Lockhart, a former Mayor, two members of the Lockhart City Council, the Economic Development Director for the City of Lockhart, and two members of the Caldwell County Commissioners Court. Reasons given for this support included anticipated economic development opportunities for the area and safety and mobility concerns associated with existing US 183.

Three of these speakers expressed support for the project, more specifically, a preference for Alternative B.

Two of the speakers, including a member of the joint city/county task force appointed to study SH 130, expressed support for Alternatives B/H through Caldwell County.

The president of the Lockhart Industrial Foundation encouraged TxDOT to expedite construction of SH 130 “on a path as near as possible to the western edge” of Lockhart.

Of those speaking in support of the project, two individuals expressed opinions of opposition to the toll concept.

Two individuals stated and expressed the opinion that if SH 130 becomes a toll road, then Caldwell County should not be required to provide the right-of-way.

Another individual who spoke in support of the proposed project indicated a willingness to pay tolls in return for improved safety and mobility.

Three of those individuals speaking in support of the project also expressed opinions in support of the possible construction of an earthen dam, in conjunction with proposed SH 130, which would then form Lake Lockhart. (Note: Construction of such a dam is not within the current scope of the proposed SH 130 project.)

A representative of the Guadalupe-Blanco River Authority stated that the river authority is “ready to work with TxDOT on the possibility of using [the SH 130 crossing at Plum Creek] as an earthen bridge for both the purpose of crossing the bridge for transportation purposes and for construction of a dam and thus the creation of a reservoir.” As a private “property owner in Guadalupe County”, the same individual expressed an opinion that NEPA is bad public policy and often results in the “route of least resistance” instead of the most effective transportation solution.

Fifteen speakers, including the Mayor of Neiderwald, expressed opinions of general opposition to SH 130.

One of these individuals expressed an opinion of particular opposition to the “technically preferred alternative.”

Another individual stated that if SH 130 is built, it should be as far away as possible from the City of Lockhart.

Two of these individuals who spoke in opposition to SH 130 also expressed opinions of opposition to the toll concept.

Two other individuals expressed their opinions that funding should be used to improve other area roadways, including existing US 183, instead of constructing SH 130.

One speaker expressed environmental and financial reservations regarding the project.

One of those speaking in opposition to the proposed action stated that if it is built, it should be extended south of I-10 to Loop 1604 in San Antonio. The same individual asked if sellers of property were required to disclose information about the proposed project and its alignment alternatives to potential buyers.

A Sierra Club representative expressed an opinion expressing general opposition to SH 130, stating that “highways have proven themselves to be a failure.”

Another individual questioned the need for the proposed project and expressed concern about the planning process. The same individual expressed an opinion that the proposed facility is not compatible with rail and stated “the claim that this could be a multimodal facility needs to be demonstrated and I don’t think it can be.”

A representative of the Commuter Choice Coalition stated that funding should be used to provided non-automobile commuter solutions and transportation options.

Comments were received from five individuals who expressed neither support nor opposition to the proposed project, but instead provided specific comments regarding various alternatives or the planning process.

One of these individuals did express opposition to the alignment alternative that would utilize Caldwell County Road 110.

Another individual stated the opinion that, as proposed, SH 130 is too close to the City of Lockhart. This speaker also expressed the opinion that planners and city officials need to leave room for the city to grow out.

Another individual stated the opinion that if SH 130 is to be built, it should be at no cost to the taxpayers of Caldwell County.

One individual stated the opinion that the route should be straighter; access should be minimized; and that it should not be a toll road.

Another speaker questioned the location of the study corridor, as a whole.

Meeting Adjournment

Mr. Kopp officially adjourned the public meeting at 8:15 p.m. after providing an opportunity for any additional speakers to make public comment(s).

Written Public Comments

The public was given the opportunity to submit written comments to be included in the official record of the public meeting. Written comments were accepted at the meeting and for 10 days subsequent to the meeting. A total of 31 written comments were received.

Identical letters were received from 17 individuals. These letters expressed general opposition to Segment C (southern segment) of SH 130, for a variety of reasons.

Six individuals submitted comments expressing specific support for the No-Action Alternative.

One of these six individuals expressed an opinion in writing that if SH 130 is constructed, it should be connected to I-35, south of Austin via a Creedmoor to Buda route. The same individual inquired about noise mitigation and stated, “If the project now includes Lake Lockhart you need to rescope the EIS.”

One individual expressed an opinion in writing that opposes “building a new highway” and encouraged the upgrading of existing facilities.

Another individual expressed in writing their concern with Alternatives B and H, and suggested modifications to that route.

One individual expressed in writing that they are “opposed to the routing of an I-35 bypass through Caldwell County, especially as a toll road.” He went on to state that if SH 130 is constructed, it “should be routed as far from Lockhart as possible.” This individual stated a preference for Alternative A.

An individual expressed in writing their concern with creating a “bottleneck” at the proposed intersection of US 183 and SH 130. This person also expressed an opinion opposed to applying tolls to the existing US 183.

Another individual expressed in writing their concerns with noise impacts and Caldwell County’s ability to provide 50 percent of the required right-of-way.

Two individuals expressed in writing their support for the proposed action, but objected to the toll concept.

One individual submitted written comments pertaining to Segment B of proposed SH 130.

8.3 KEY ISSUES

The comment and coordination process for SH 130 has been occurring since the 1980s when the MoKan Transportation Corporation, TxDOT and FHWA first initiated formal public involvement. Since that time, government agencies and the public have been afforded numerous opportunities to comment on the proposed action and route alternatives. Many participants in the process have endorsed the proposed action, believing that SH 130 will provide congestion relief and improve mobility and accessibility within the corridor. Some supporters of the proposed action, however, disagree about which build alternative is the best. Many participants also oppose the proposed action, raising questions and concerns about a variety of issues. The following reasons were most often cited for opposing the proposed action:

- adverse impacts to individual properties and neighborhoods;
- general opposition to new highways and toll roads;

- preference for investments in public transportation and other alternatives like rail or improvements to existing roadways;
- concern regarding SH 130's secondary and cumulative impacts;
- perceived adverse impacts to low-income and minority populations; and
- impacts on natural resources like farmland and native grasslands.

In addition to these issues, several jurisdictions have indicated their support or opposition to the location of specific SH 130 build alternatives (see **Section 4.1.1 Compatibility of the SH 130 Alternatives With Local Plans and Policies**). The location of the Preferred Alternative (Alternative 2) is supported by the City of Austin, the City of Round Rock, Travis County, the City of Lockhart, Guadalupe County, and the City of Seguin. While it is not consistent with previously adopted resolutions by Williamson County, the City of Georgetown and the City of Pflugerville, these entities have not expressed any opposition to the Preferred Alternative.

8.4 PUBLIC HEARING

8.4.1 Introduction and General Information

On Thursday, February 10, 2000, the Texas Turnpike Authority Division (TTA) of the Texas Department of Transportation (TxDOT) conducted a public hearing on proposed SH 130. The limits of proposed SH 130 extend from Interstate Highway 35 at State Highway 195 north of Georgetown in Williamson County, through Travis and Caldwell Counties, to Interstate Highway 10 near Seguin in Guadalupe County. The total length of the proposed facility is approximately 91 miles.

For the convenience of those wishing to attend, the hearing was held at three locations within the project corridor:

Round Rock: Stony Point High School
 1801 Bowman Road
 Round Rock, Texas

Austin: Barbara Jordan Elementary School
6711 Johnny Morris Road
Austin, Texas

Seguin: Seguin Coliseum
810 South Guadalupe Street
Seguin, Texas

Notice of the public hearing was published in numerous newspapers having general circulation in the project corridor. Two of the papers are targeted for the Hispanic population and are published in Spanish. In these papers, the notices were published in Spanish. Notice of the public hearing was published on numerous occasions. In addition, notice of the public hearing was sent directly to landowners and/or other parties with an interest in the proposed facility.

From 6:00 to 7:30 p.m., at all three locations, displays showing the project corridor and SH 130 route alternatives were available for review. During this time, TTA and consultant team staff were available to answer questions from the public. Formal project presentations began at 7:30 and were followed by public comment periods. The hearing agenda was included in a hand-out which was distributed to those who attended the hearing.

At each location, the project presentation included an overview of SH 130 in its entirety (from north of Georgetown to Seguin). In addition, a more detailed discussion of the project as it pertains to the general vicinity of the hearing location (“focus area”) was presented at each location. The Round Rock presentation focused on the area between I-35 at SH 195 north of Georgetown to US 290 east of Austin. The Austin presentation focused on the area between US 290 and US 183 at FM 1185. The Seguin presentation focused on the area between US 183 at FM 1185 and Interstate 10. As explained in the public hearing notice, the focus area discussions were intended to facilitate an efficient exchange of information, and were desirable due to the length of the proposed facility.

Phillip E. Russell, Director of the Texas Turnpike Authority Division, presided at the Round Rock location. Approximately 1,200 people were in attendance at this location with 543 actually signing the attendance record. Robert B. Daigh, Director of Turnpike Planning and Development for TTA, presided at the Austin location with 399 signing the attendance record. Approximately 500 people were in attendance at this location. David C. Kopp, Director of TTA's

SH 130 Project Office, presided in Seguin. It is estimated that 500 people were in attendance with 505 signing the attendance record.

Spanish translators were available at each location. In addition, in response to specific requests from members of the public, interpreters for the deaf were on-site at the Round Rock and Austin hearing locations. The public hearing presentations were recorded by certified court reporters.

8.4.2 Project Presentations

The TTA representatives (Messrs. Russell, Daigh and Kopp) convened the formal presentation portion of the hearing at 7:30 pm. They thanked everyone for attending the hearing and briefly described the proposed facility and project limits. They explained that the hearing was being held pursuant to federal rules and regulations implementing the National Environmental Policy Act of 1969, as amended, and governing the development of environmental impact statements for transportation improvements. They explained that the purpose of the public hearing was to present the findings of the draft environmental impact statement, which was approved by the Federal Highway Administration (FHWA) on January 4, 2000, and to seek public comment on the proposed action and work performed to date.

The TTA representatives explained options for submitting comments to be included in the public hearing record. They explained that all written comments submitted at the hearing or received (or postmarked) by February 22, 2000, would be included in the official record of the public hearing. They also explained that comments could be provided orally during the public comment portion of the public hearing or by recording comments at one of the court reporter-manned recording stations set-up at each location. Five recording stations were provided at the Austin and Round Rock locations and three were set-up in Seguin. The TTA representatives explained that all oral comments received (during the hearing) as well as all written comments received or postmarked by February 22, 2000, would be included in the official public hearing record and would be considered as TTA and FHWA move forward with the project development process.

Next, the TTA representatives explained that the purpose of proposed SH 130 is to relieve congestion on I-35 and other major transportation facilities in the Austin/San Antonio corridor, to improve mobility, and to increase accessibility to important public facilities. They cited the effects of congestion (increased traffic fatalities, rising costs due to travel delays, and an overall

reduction in mobility) resulting from past and future growth in Austin/San Antonio corridor as the reason for needing the proposed facility.

The TTA representatives then discussed the project in terms of consistency with goals and objectives of local urban planning efforts. It was explained that the proposed facility is being developed as a toll road candidate and that a toll feasibility study had been initiated.

The next portion of the presentation was presented by the environmental sub-consultants (Mr. Jim Robertson, Round Rock; Mr. Tom Van Zandt, Austin; and Ms. Ally Peat, Seguin). The environmental sub-consultants discussed the project alternatives and major design features. They explained that a variety of project alternatives, route alternatives, combinations of alignments and the "no action" or "no build" alternative were considered and analyzed through the environmental study process, and the results of these efforts are reflected in the draft environmental impact statement.

The environmental sub-consultants then explained that initially SH 130 was to be developed in three segments with an environmental impact statement to be prepared for each segment. They explained that in June of 1999, the Texas Turnpike Authority and the Federal Highway Administration decided to prepare a single, more comprehensive environmental impact statement addressing SH 130 in its entirety. They stated that the draft environmental impact statement, approved on January 4, 2000, addresses the entire length of SH 130, from north of Georgetown to Seguin.

They went on to explain that as a result of combining the three segments, some alignment alternatives that had been previously considered were dropped from further consideration. The basis for eliminating alternatives was briefly discussed. It was then explained that alternatives that were advanced for detailed analysis and environmental review (through the environmental impact statement process) were those that enhanced the project's ability to meet the purpose and need of the project, avoided or minimized adverse environmental impacts, or were supported by local governments. They explained that a total of nine alternatives were advanced – eight end-to-end (Georgetown to Seguin) build alternatives and the No-Action alternative.

They went on to explain that there are two primary location options in Williamson County, two in the Austin area, and two in the southern portion of the project corridor. The environmental sub-consultants explained that the eight end-to-end alternatives are derived by

looking at every possible combination of the primary options. They then identified Alternative 3 as the recommended alternative reported in the draft environmental impact statement.

At this point it was explained the route and design recommendations and other project details presented at the hearing are tentative and subject to change. It was stated that the final selection of a route alternative will not be made until comments on the draft environmental impact statement and comments from the public hearing have been fully evaluated and a final environmental impact statement has been prepared and reviewed.

The environmental sub-consultants continued their presentations by explaining that, as a multimodal facility, SH 130 would generally consist of six main lanes, with a center median capable of accommodating the possible future construction of additional general multi-purpose lanes, high occupancy vehicles lanes, light rail transit, or some combination of these modes. It was also explained that the median could accommodate commuter or freight rail, but construction of freight rail within the median may preclude its use by other modes.

Next, it was stated that the SH 130 right-of-way would accommodate bicycle and pedestrian facilities, although the extent and location of such amenities had not yet been established. It was also explained that in most areas frontage roads are not planned; however, in limited areas frontage roads are necessary to restore or maintain access to specific properties, and in other areas for consistency with local planning efforts.

It was explained that construction of proposed SH 130 would be accomplished in phases and that a specific construction schedule had not yet been developed.

TTA's intent to sponsor a SH 130 charette was then discussed. The charette, which is not an element of the traditional project development process, will serve as a forum for involving key members of the community and the public in the decision making process with regard to such design details as roadway aesthetics, landscaping, scenic easements and bicycle and pedestrian-related issues. It was explained that the charette will be held during the design phase of project development, after the environmental process is complete and the route has been established. The goal of the charette will be to mold SH 130, through active public participation, into a functional, aesthetically pleasing roadway that will enhance the regional roadway network as well as the communities it serves.

At this point the presentation turned to the issue of environmental impacts. A table (from the draft environmental impact statement) summarizing the environmental impacts of each alternative was presented. It was projected onto a screen and copies were made available to all those interested. The presentation focused on actions that the TTA will take to address project-related environmental impacts, regardless of which alternative is selected. First, it was explained, that it is the policy of TTA that no person will be displaced due to right-of-way acquisition until decent, safe, and sanitary replacement housing – functionally equivalent to their present dwelling – is available. (Right-of-Way and Relocation Assistance was discussed in detail later in the hearing.)

It was stated that TTA will take measures to minimize impacts on neighborhoods. With respect to visual intrusion and increased noise levels, noise abatement, such as noise walls or berms, will be considered where reasonable and feasible, to minimize the impacts upon local residents. It was explained that TTA will consider spanning existing streets to minimize the amount of additional traffic on residential collector streets and local arterial roadways. And, the construction of sidewalks along portions of neighborhoods will be considered to improve pedestrian access in and around the neighborhood areas. Also, frontage roads will be provided for any areas affected by the discontinuation of an existing street, or where property access must be restored.

The environmental sub-consultants then explained that if any public park land is converted to right-of-way for SH 130, TTA will pursue measures to minimize harm to the remaining park area, as well as provide for replacement park land, when appropriate.

Actions to minimize construction impacts were then discussed. Soil erosion and sedimentation will be minimized. Construction noise levels will be controlled. Dust control techniques will be employed. It was explained that, prior to construction, TTA will prepare and submit a Water Pollution Abatement Plan to the Texas Natural Resource Conservation Commission for portions of the project occurring within the recharge zone, as required by the Edwards Aquifer Rules. TTA also will apply for permit coverage under the EPA Nationwide Pollutant Discharge Elimination System for construction activities and will prepare and implement a Storm Water Pollution Prevention Plan. In addition, it was stated that steps will be taken to minimize the impacts to wetlands and aquatic habitats. The project will require permitting and coordination with the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Further, it was explained that a Coast Guard permit may be required for the proposed bridge crossing of the Colorado River.

It was then stated that SH 130 affects an area where potential historic and cultural resource sites have been identified. Accordingly, it was explained that TxDOT and TTA will engage

in consultation with the Texas Historical Commission regarding the scope of an intensive archeological survey of the project, as well as additional documentation and evaluation of any significant historic structures that may be affected by the route alternatives.

Finally, the issue of urban sprawl was discussed. It was explained that while TTA has no authority to determine or control land use and development, new location highways such as SH 130 typically result in providing opportunities for land development. It was noted that because the responsibility for overseeing land development rests with local cities and counties, the burden of either encouraging or discouraging new development along SH 130 is partially born by the cities and counties which have the authority to do so. It was stated that TTA is committed to cooperating with local officials and citizens' groups on efforts to enhance beneficial aspects and minimize adverse effects of development through the land use and development controls available to cities and counties throughout the corridor.

The environmental sub-consultants closed their presentations by encouraging the audience to submit verbal or written comments. They stated that the final environmental impact statement will document and respond to all public hearing comments as well as any comments received by the various agencies involved in review of the draft environmental impact statement.

The next item on the agenda was the “focus area” presentations. These presentations were made by the project managers for each of the SH 130 engineering consultant teams. Mr. Henry Pearson (Carter & Burgess) presented the focus area information at the Round Rock hearing location. Mr. Pearson discussed the portion of proposed SH 130 between State Highway 195 (north of Georgetown) and US 290 (east of Austin). Mr. Roland Gamble (Earth Tech, Inc.), presenting at the Austin hearing location, focused his presentation on the portion of the proposed project between US 290 and US 183 at FM 1185. And, in Seguin, Mr. Charles Celauro (Dannenbaum Engineering Corporation) focused his discussion on the area between US 183 and I-10. During these discussions, preliminary design and engineering information was presented for the route alternatives under consideration in the focus area. The information presented included design speeds, typical sections, anticipated right-of-way requirements, proposed interchange, ramp and frontage road locations, possible toll plaza locations, etc. Line diagrammatics plotted on an aerial photography background were used to facilitate these presentations by “walking” the audience through the route alternatives.

A presentation of right-of-way acquisition and the State's relocation assistance program followed the focus area discussions. The presentations were made by TxDOT right-of-way personnel (Liz Norris, Round Rock; Don Toner, Austin; and Juan Zaragosa, Seguin). The presenters

stated that TxDOT, or one of the local entities, will be responsible for the acquisition of necessary right of way and for all relocation assistance services. They explained that all right-of-way and relocation activities will be carried-out in accordance with State and Federal law. Informational brochures, explaining the basics of these programs, were available to interested individuals at the hearing.

The presenters stated that prior to acquisition, a real estate appraisal will be secured on each property. The appraisal will be used to determine “just compensation”. The just compensation value will be offered to each owner. They explained that the value will include, among other things, the real property improvements located within the area to be acquired and any damages to the remainder property based on the appraisal. It was also stated that each property owner will be afforded the opportunity to accompany the appraiser during the inspection of the property.

The relocation assistance program was then discussed in detail. It was explained that TxDOT is authorized, through Federal and State laws, to assist persons being displaced from their homes and businesses because of highway improvements. The presenters expressed TxDOT's intent, utilizing the relocation assistance program, to minimize the inconvenience and the financial hardships to persons displaced by highway projects.

Next they explained the services available to residential displacees and stressed that to be eligible for these services, the person must be living in or occupying the property to be acquired prior to TxDOT's offer to purchase the property. They stated that it is the policy of TxDOT and the US Department of Transportation that no person will be displaced by the TxDOT's construction project unless and until adequate decent, safe and sanitary replacement housing has been made available to affected persons. Relocation assistance will be offered to all qualified persons regardless of race, color, religion, sex, age or national origin.

The right-of-way presenters then explained that relocation assistance is also available for business displacements. They explained that businesses will be compensated on the basis of actual moving expenses incurred and that a business owner also may qualify for reimbursement of certain reestablishment expenses and searching expenses.

At this point the TTA representatives (Messrs. Russell, Daigh and Kopp) wrapped-up the hearing presentations. They explained that comments received as a result of the public hearing as well as comments received as a result of public and agency review of the DEIS will be carefully and thoughtfully considered. Any adjustments or modifications to the current proposal that are

determined to be necessary or desirable will be made and then a final environmental impact statement will be prepared and submitted to the Federal Highway Administration for review. After extensive reviews, of both content and legal sufficiency, it is expected that FHWA will approve the final environmental impact statement and issue a record of decision. It was explained that issuance of the record of decision is the final step in the environmental review process and it is at that point that the alignment is final and the project is approved. Except under unusual circumstance, no right-of-way acquisition will occur prior to receipt of the record of decision, and under no circumstances will construction begin prior to the record of decision.

At this point it was explained that TTA tentatively anticipates receipt of a record of decision by the end of the calendar year (2000) and that construction, on some portion of SH 130, could begin as early as two years after the record of decision is issued.

8.4.3 Public Comments

A public comment period followed the presentations by TTA and its project consultant team. The TTA representatives moderated the public comment period. Before calling the first speaker, the TTA representatives reminded the audience that they may submit comments orally (either during the public comment period or at one of the court reporter- manned recording stations) or they may submit written comments (postmarked by February 22, 2000).

Orally, 238 individuals presented comments in Round Rock, 86 presented comments in Austin, and another 99 submitted comments in Seguin. A total of 805 written comments were received from individuals, businesses, or entities in the Round Rock focus area. From the Austin focus area, 738 written comments were received. The 738 total includes twenty-nine identical petitions signed by 137 individuals. This brings the total number of respondents in the Austin area to 846. A total of 100 written comments was received from the Seguin focus area. The total includes six (6) petitions signed by 474 petitioners; thus, making the total number of respondents in the Seguin area 568. In total, 2,642 responses were received in response to the public hearing.

Of the 238 verbal comments received in Round Rock, six (6) supported SH 130 regardless of alignment chosen, while six (6) opposed SH 130 in any form, and six (6) had no preference. 142 spoke in support of the eastern alignment, 43 for the western alignment, and two (2) supported SH 130 as long as it was not a toll road. In addition, 12 opposed the eastern alignment, and 21 opposed the western alignment.

Of the 805 written responses received from the Round Rock focus area, 17 supported SH 130 regardless of alignment chosen, while five (5) opposed SH 130 in any form, 11 had no

preference. 587 spoke in support of the eastern alignment, 159 for the western alignment, one (1) for SH 130 as long as it was to be a toll road, and one (1) supported SH 130 as long as it was not a toll road. In addition, seven (7) opposed the eastern alignment, and 17 opposed the western alignment.

Of the 86 verbal comments received in Austin, 18 supported SH 130 regardless of alignment chosen, while 16 opposed SH 130 in any form, and 11 had no preference. 26 spoke in support of the eastern alignment, and 9 for the western alignment. In addition, one (1) opposed the eastern alignment, and five (5) opposed the western alignment.

Of the 846 written responses received from the Austin focus area, 287 supported SH 130 regardless of alignment chosen, while 33 opposed SH 130 in any form, and 15 had no preference. 217 spoke in support of the eastern alignment, 91 for the western alignment, 50 for SH 130 as long as it was to be a toll road, and two (2) supported SH 130 as long as it was not a toll road. In addition, two (2) opposed the eastern alignment, and 12 opposed the western alignment. 137 residents of the Deerwood Community requested a modification to avoid impacts to the Deerwood Manufactured Housing Subdivision.

Of the 99 verbal comments received in Seguin, 8 supported SH 130 regardless of alignment chosen, while 35 opposed SH 130 in any form, and 31 had no preference. 19 spoke in support of the eastern alignment, three (3) for the western alignment, and one (1) supported SH 130 as long as it was not a toll road. In addition, one (1) opposed the eastern alignment, and one (1) opposed the western alignment.

Of the 568 written responses received from the Seguin focus area, 12 supported SH 130 regardless of alignment chosen, while 388 opposed SH 130 in any form, and 13 had no preference. Five (5) spoke in support of the eastern alignment, two (2) for the western alignment, and one (1) supported SH 130 as long as it was not a toll road. In addition, 143 opposed the eastern alignment, and four (4) opposed the western alignment.

Many of those who expressed support or opposition to SH 130 (as a whole), a specific alternative, or to the toll concept also asked specific questions or expressed specific concerns regarding the proposed action. In general, issues most frequently raised included loss of property, impacts to lifestyle, impacts to farms and ranches, impacts to air and water quality, and impacts to the overall environment.

Further, many of those who expressed support or opposition to a specific alternative also expressed support or opposition to proposed SH 130 in general. In these circumstances, for

reporting and summary purposes, the person's response was tallied (herein) based on his or her alignment preference.

The following items are contained in the *SH 130 Public Hearing Summary and Analysis* which is incorporated herein by reference and published under separate cover; Public Hearing Notice; List of Newspapers in which the Notice was Published; Public Hearing Handout; Public Hearing Sign-In Sheets; Verbatim Transcripts of the Public Hearing and Oral Comments; Written Comments; Response to Comments.

8.5 AFFECTED PROPERTY OWNER INVOLVEMENT

8.5.1 Introduction and Presentations

On February 10, 2000, the Texas Turnpike Authority Division (TTA) of the Texas Department of Transportation conducted a public hearing on proposed SH 130. Approximately 2000 comments were received in response to the hearing. Evaluation of those comments led to consideration of several possible modifications to the preferred alignment that would serve to reduce overall project impacts. One of the possible modifications would involve the area between the Colorado River and a point south of Moore Road in southeast Travis County.

The possible modification between the Colorado River and Moore Road is located in the vicinity of two established neighborhoods and several rural or undeveloped properties. Due to the number of property owners involved, on June 22, 2000, TTA conducted a meeting with “affected property owners”. The meeting was held in the auditorium of Popham Elementary School, 7014 Elroy Road, Del Valle, Texas. Letters of invitation were sent to property owners potentially affected by the possible route modification. Certified letters were sent to those individuals whose property would be directly impacted.

The purpose of this meeting was to provide information to the property owners about the proposed route modification and its purpose, and to receive their input. Each person arriving for the meeting was asked to register, giving their name, address and telephone number. Also, a comment sheet and an opportunity to register to speak were offered to each person. There were 121 people that completed the sign-in register.

Several large-scale area maps were displayed in the meeting area. These maps showed the alignment that was shown in the Draft Environmental Impact Statement and presented at the February 10 public hearing. They also showed the possible route modification that was developed in response to public hearing comments.

The meeting began at 6:30 p.m. with an open house to give participants an opportunity to examine the exhibits and ask questions of TTA staff and consultant team personnel on hand for that purpose. The open house was followed, at 7:15 p.m., with a technical presentation. SH 130 Project Office Director, David Kopp, briefly discussed the status and project development history of proposed SH 130. He discussed the purpose of the meeting and its relationship to the public hearing process. Following an overview of TTA's right-of-way procedures and relocation assistance program by Don Toner (TTA's Right-of-Way Administrator), Mr. Kopp presided over the public comment portion of the meeting.

Seventeen individuals presented oral comments. No written comments were received in response to the meeting. A verbatim transcript of the meeting, including the oral comments presented, is on file and available for review at TTA's office (125 E. 11th Street, Austin, Texas 78701).

8.5.2 Summary of Comments

Of the 17 individuals presenting comments, four expressed support for the proposed route modification and four spoke against it (many of these commentors also expressed specific concerns or asked specific questions regarding various aspects of the proposed project). The remaining commentors either expressed opposition to SH 130 in general, recommended an alternative route, or asked specific questions or expressed specific concerns about various aspects of the proposed project, but without specifying a preference for or against the proposed route modification. Several of the commentors expressed concern about airport issues unrelated to SH 130.

There were no written comments received.

8.6 RESPONSE TO AGENCY REVIEW COMMENTS

8.6.1 DEIS Distribution

In January of 2000, the Texas Turnpike Authority Division (TTA) of the Texas Department of Transportation and the Federal Highway Administration (FHWA) circulated for comment the Draft Environmental Impact Statement (DEIS) prepared for the proposed SH 130 from I-35 north of Georgetown to I-10 near Seguin. Public Notice of the availability for review of the DEIS was published in the *Texas Register* on January 28, 2000 and the *Federal Register* on February 4, 2000. Public hearings on the proposed project were conducted on February 10, 2000 in Round Rock, Austin and Seguin.

A list of agencies that were supplied copies of the DEIS and given the opportunity to comment on the proposed project is included in **Section 7.0** of the FEIS. Comments received and, where appropriate, responses to comments are provided below.

8.6.2 Responses to Written Comments from Federal Agencies

Agency: *Fish and Wildlife Service (January 31, 2000)*

Comment #1: We strongly encourage you to survey all surface waters within the portion of the proposed project area north of U.S. Highway 290 for the presence of these salamanders [the Jollyville Plateau salamander and the Georgetown salamander].

Response to Comment #1: TTA and Fish and Wildlife Service (FWS) are engaged in coordination regarding the use of voluntary conservation measures to protect the habitat of these two salamanders. The need for and potential scope of a pre-construction species survey will be determined through the coordination process. Correspondence between TTA and FWS regarding this issue is included in **Appendix C** of the FEIS.

Comment #2: If these salamanders are present, the Service requests an opportunity to review the Stormwater Pollution Prevention Plan to make specific recommendations for the protection of water quality.

Response to Comment #2: Comment noted.

Comment #3: The Service recommends detailed surveys be conducted for Cagle's map turtle if the selected alternative may impact any potential habitat for this candidate species, so that appropriate measures can be taken, in **all** instances, to avoid any potential adverse impacts.

Response to Comment #3: According to the USFWS, this riverine turtle is "currently found only in segments of the Guadalupe and San Marcos Rivers" (see **Appendix C** for letter dated December 6, 1999). The proposed action would involve spanning both the Guadalupe and San Marcos Rivers, thereby avoiding any major impact to its potential habitat. Other potential impacts are expected to be minimized through the use of sedimentation and erosion control measures.

Agency: *Department of the Interior (March 6, 2000)*

Comment #1: We strongly encourage the TxDOT to survey all surface waters within the portion of the proposed project area north of U.S. Highway 290 for the presence of these salamanders [the Jollyville plateau salamander and the Georgetown salamander].

Response to Comment #1: TTA and Fish and Wildlife Service (FWS) are engaged in coordination regarding the use of voluntary conservation measures to protect the habitat of these two salamanders. The need for and potential scope of a pre-construction species survey will be determined through the coordination process. Correspondence between TTA and FWS regarding this issue is included in **Appendix C** of the FEIS.

Comment #2: The FWS requests the opportunity to review the Stormwater Pollution Prevention Plan to make specific recommendations for the protection of water quality.

Response to Comment #2: Comment noted.

Comment #3: The FWS recommends that surveys be conducted for Cagle's map turtle, if it is determined by the FWS that the selected alternative may impact potential habitat for this candidate species, so that appropriate measures can be taken to avoid potential adverse impacts.

Response to Comment #3: According to the USFWS, this riverine turtle is "currently found only in segments of the Guadalupe and San Marcos Rivers" (see **Appendix C** for letter dated December 6, 1999). The proposed action would involve spanning both the Guadalupe and San Marcos Rivers, thereby avoiding any major impact to its potential habitat. Other potential impacts are expected to be minimized through the use of sedimentation and erosion control measures.

Comment #4: The Department of the Interior has no objection to Section 4 (f) approval of the project by the Department of Transportation, providing that all measures to minimize harm to Section 4(f) resources are included in the final project plans and documentation to that effect is included in the Final Section 4(f) Evaluation...All mitigating measures should be documented in a memorandum of Agreement (MOA) among the Federal Highway Administration, Texas Department of Transportation, Texas Turnpike Authority, and the SHPO, in accordance with Section 106 of the National

Historic Preservation Act, as amended. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.

Response to Comment #4: Comment noted. The Preferred Alternative, Alternative 2, does not involve any Section 4(f) properties. Therefore, no Section 4(f) evaluations appear in the FEIS.

Agency: *Environmental Protection Agency (March 23, 2000)*

Comment #1: The resource sections in Chapter 3 do not parallel those in Chapter 4. Same headings in both sections should be used.

Response to Comment #1: While not exactly parallel, the information provided in **Section 4.0** is generally in the same order as found in **Section 3.0**. The organization of **Sections 3.0** and **4.0** conforms to FHWA's Technical Advisory T 6640.8A. Using the exact same headings for both sections is not appropriate given the guidance provided by the technical advisory.

Comment #2: It is unclear whether frontage roads, toll road designations, medians, and scenic easements are in fact built in to all alternatives; are built into portions of each alternative; or are possible design features to be determined later.

Response to Comment #2: All build alternatives have the same typical sections, as described in **Figure 2.4-2**. All build alternatives are also candidate toll roads. The 103-foot median – a feature of all build alternatives – is reserved for future transportation use, to be determined later and subject to additional environmental approvals. Scenic easements are potential elements of all build alternatives, to be acquired by local governments at their discretion during the right-of-way acquisition process.

Comment #3: Chapter 5.0 should cover all mitigation measures discussed in the EIS, not just those associated with construction.

Response to Comment #3: All mitigation measures discussed in the EIS are covered in **Section 5.0**.

Comment #4: The EIS needs to address the specific characteristics of the geologic units that would have an effect on siting the road and on impacts to other resources such as ground water quality.

Response to Comment #4: A discussion of the engineering constraints posed by the characteristics of the geologic units found in the corridor is included in **Section 3.5**. Potential impacts to ground water quality are discussed in **Section 4.8.2**.

Comment #5: If there are no unique farmland soils in the corridor, this should be stated.

Response to Comment #5: Comment noted. This is stated in **Section 3.4.5.3, page 3-44.**

Comment #6: The [soil] properties that must be considered should include erodibility (wind and water) and depth to ground water.

Response to Comment #6: These properties are considered in **Section 3.5**.

Comment #7: A table listing the soil types, the alternatives and segments in which they occur, and the relevant properties mentioned in the previous section would be useful information and would support analysis in Chapter 4.

Response to Comment #7: The discussion of soil properties in **Section 3.5** provides a sufficient basis for analysis in **Section 4.0**.

Comment #8: Delete the sentence in **Section 3.5.4.3, page 3-40** that states “other lands are generally not suited to crop production...”

Response to Comment #8: The sentence is deleted.

Comment #9: Cumulative impacts to farmlands should be discussed in the FEIS.

Response to Comment #9: This issue is addressed in **Section 4.18.2, page 4-119**.

Comment #10: The DEIS should discuss the potential for soil erosion and sediment accumulation due to temporary construction.

Response to Comment #10: This issue is covered in **Sections 4.8** and **4.17**.

Comment #11: Information regarding the median value and median rents (or range of value/rents) for housing to be displaced should be included. All coordination efforts and public involvement conducted with the potentially displaced residents/businesses should be addressed.

Response to Comment #11: The average value of housing to be displaced and average rents for the corridor are included in **Section 4.4.3, page 4-50**. A brief description of the coordination efforts and public involvement activities with potential displacees is added to **Section 4.4.2**.

Comment #12: In addition to the information provided in the **Economic Conditions Section (3.2.2)**, there should be greater coverage given to the nature of the economic activity in the region. The major industries and a prognosis for the economic vitality of the region should be provided. The FEIS should describe the nature of the construction and transportation industries as they currently exist in the region and how they would be affected by implementation of the preferred alternative.

Response to Comment #12: Additional information appears in **Section 3.2.2** regarding existing economic activity, major industries, and economic outlook. **Section 4.5.2.1 – Regional Economic Impacts** – is expanded to include an assessment of how construction and transportation industries would be affected by implementation of the preferred alternative.

Comment #13: The FEIS should consider using “listed, eligible, or potentially eligible” [for the National Register of Historic Places] for all sites for which impacts are considered.

Response to Comment #13: The FEIS reports the findings of Section 106 coordination with the State Historic Preservation Officer. Historic sites are identified as to their NRHP status.

Comment #14: We recommend deleting the Kenney Fort quote and other specific locational information - this is a public document.

Response to Comment #14: The Kenney Fort quote is deleted.

Comment #15: Assessment of quality of wetlands (by high, moderate, or low biological quality) should be better justified.

Response to Comment #15: Better justification is provided in **Section 4.9.1.2, page 4-76**.

Comment #16: The FEIS should clarify that the “(EPA) standards for air quality” are the National Ambient Air Quality Standards (NAAQS). The EIS should further clarify that the State of Texas has adopted the Federal NAAQS as state standards.

Response to Comment #16: These clarifications are included in **Section 3.4, page 3-33**, and in a note to **Table 3.4-1, page 3-35**, respectively.

Comment #17: The Particulate Matter (PM)_{2.5} standard is now in place and should be included in the table of NAAQS.

Response to Comment #17: The PM_{2.5} standard is included in the table.

Comment #18: The FEIS should discuss whether modeling done to estimate the Carbon Monoxide (CO) concentrations of the “hot spots” under worst case or average conditions has been done. Of particular concern is the sensitive receptions near the toll booth areas.

Response to Comment #18: **Section 4.7.2, page 4-67**, discusses the worst case CO modeling. A “hot spot” analysis was not conducted for the toll plaza areas, as the specific data required for such an analysis is not available. The exact location of toll plazas is subject to final design. Nevertheless, the discussion in **Section 4.7.3** has been augmented to address whether tentative toll plaza locations would occur near sensitive receptors.

Agency: *Corps of Engineers (March 28, 2000)*

Comment #1: Construction of these bridges along the proposed routes of SH 130 should be designed so that the flood plain boundaries are not effected and the flow paths are not altered.

Response to Comment #1: Comment noted. Construction of SH 130 including bridge structures will be in accordance with current TxDOT and FHWA hydraulic design practices.

Comment #2: This project should also comply with the environmental and wetland requirements of Section 404 from the Regulatory Branch.

Response to Comment #2: Comment noted. A Section 404 permit, as necessary, will be obtained prior to construction.

Agency: *Prairie Band Potawatomi Nation (April 10, 2000)*

Comment #1: We have no objections to the Federal Highway Administration, in cooperation with the Turnpike Authority Division of the Texas Department of Transportation, proposed development of SH 130 in central Texas.

Response to Comment #1: Comment noted.

8.6.3 Responses to Written Comments from State Agencies

Agency: *Bureau of Economic Geology (January 25, 2000)*

Comment #1: The information presented is limited but appears to be correct.

Response to Comment #1: Comment noted.

Agency: *Texas Historical Commission (February 1, 2000)*

Comment #1: We believe it would be extremely beneficial for future evaluation and planning efforts if a more thorough archeological evaluation of the proposed alternative

routes was undertaken, including discussions of high and low probability areas, site densities, and expected site types along each alternative.

Response to Comment #1: A thorough archeological evaluation of the proposed alternative routes was undertaken, including discussions of high and low probability areas, site densities, and expected site types along each alternative. This information is included in the FEIS.

Comment #2: We request specific information be included in the revised and final EIS that clarifies whether the prehistoric and historic archeological sites reviewed on pages 3-84 to 3-86 under the subheading category “ineligible” [for inclusion in the National Register of Historic Places (NRHP) or for designation as State Archeological Landmarks (SAL)] have been the subject of formal eligibility determinations between a federal agency and the Texas State Historic Preservation Office (SHPO).

Response to Comment #2: Eligibility determinations will be made in consultation with the SHPO once the archeological survey is completed. The pre-construction archeological survey will be conducted after right-of-way is obtained. The text in **Section 3.8.2** has been modified so that what had previously been referred to as “ineligible” sites are now sites of “undetermined” eligibility.

Agency: *Texas Water Development Board (February 7, 2000)*

Comment #1: We encourage the protection of water quality during construction and operation of the transportation project. We note that while both alternatives lie outside the drinking water protection zone for Austin, shown on the map in **Figure 3.1-2**, they are still the source waters for downstream municipal, agricultural, and industrial water users.

Response to Comment #1: Measures to protect water quality for downstream users are described in **Section 5.5**.

Agency: *Texas Natural Resource Conservation Commission (February 18, 2000)*

Comment #1: Care should be taken to ensure that the proposed construction takes into account the possible Flood Hazard Areas within the community’s floodplains. Please

notify the community floodplain administrator to ensure that all construction is in compliance with the community's Flood Hazard Prevention Ordinance/Court Order.

Response to Comment #1: Comment noted. Community floodplain coordinators will be notified during the design phase of the project to ensure that construction plans and specifications comply with applicable local rules and regulations regarding flood hazard areas.

Comment #2: The proposed action is located in Travis, Williamson, Caldwell, and Guadalupe Counties, which are unclassified or in attainment of the National Ambient Air Quality Standard for all six criteria air pollutants. Therefore, general conformity does not apply.

Response to Comment #2: Comment noted.

Comment #3: Although any demolition, construction, rehabilitation or repair project will produce dust and particulate emissions, these actions pose no significant impact upon air quality standards. The minimal dust and particulate emissions can easily be controlled with standard dust mitigation techniques by the construction contractors.

Response to Comment #3: Comment noted.

Comment #4: Regarding the Draft Environmental Impact Statement, **Sections 3.4.2 and 3.4.3** need to include a discussion about the one-hour and eight-hour ozone standards. The eight-hour standard is currently in ongoing litigation, and therefore, the U.S. Environmental Protection Agency has proposed to bring back the one-hour standard.

Response to Comment #4: Both standards are discussed.

Agency: *Texas Parks and Wildlife Department (April 19, 2000)*

Comment #1: If nesting or wintering Mountain Plovers, Loggerhead Shrikes, or rookeries are identified on or along the route, deferring especially loud or noisy activities in the adjacent areas until after the birds have left the area will reduce negative impacts to these species.

Response to Comment #1: Comment noted. Measures to minimize impacts to wildlife resources are addressed in **Section 5.6**.

Comment #2: When access is gained to previously inaccessible areas that could potentially support threatened and endangered species, a survey before construction activities would help to determine the presence or absence of rare species.

Response to Comment #2: TTA and Fish and Wildlife Service (FWS) are engaged in a conference regarding the need for and potential scope of a pre-construction species survey for the Jollyville Plateau and Georgetown salamanders. Surveys for other rare species are not currently proposed.

Comment #3: Given the large number of bridges and culverts that will be required, use of bat-friendly bridge and culvert designs will help to minimize impacts to these species.

Response to Comment #3: TTA will consider the use of bat-friendly bridge and culvert designs.

Comment #4: Please notify this office of the results of any surveys conducted and please provide the following information about the surveys: surveyor name, survey method; acreage surveyed; level of effort; weather conditions, time of day, and dates the survey was performed.

Response to Comment #4: The requested notification will be provided, as appropriate.

Comment #5: If the best management practices listed in the EIS are followed, the impacts to water quality should be minimal.

Response to Comment #5: Comment noted.

Comment #6: The maps and photos appeared to indicate the Preferred Alternative could be realigned to avoid impacting the Mokan prairie, and the Department recommends consideration of realigning to avoid impacts to this remnant tract. In addition, it is recommended the cumulative impacts on the remaining blackland prairie community statewide be considered in the final EIS.

Response to Comment #6: The Preferred Alternative, Alternative 2, avoids impacts to the Mokan prairie. The Preferred Alternative does not directly affect known remnant native prairie tracts.

Comment #7: With the amounts and types of acreage disturbed, the proposed mitigation measures listed in **Section 5.6** may not fully offset the impacts from the project as proposed, including the impacts to the Mokan prairie. The Department recommends considering less damaging alternatives and/or the purchase of tracts containing habitats of equal or higher value than the acres lost as a result of the project.

Response to Comment #7: See response to Comment #6. Also, the typical section for SH 130 includes the option of scenic easements along the highway which could be provided by others as a means of additional mitigation.

Comment #8: The U.S. Army Corps Engineers (COE) staff should be consulted to assist in the coordination of a determination, and subsequent verification of a delineation of jurisdictional wetlands prior to commencement of proposed land alteration activities.

Response to Comment #8: TTA is coordinating with COE staff regarding determination and verification of jurisdictional wetlands. After access is obtained and prior to construction, TTA will conduct field delineation of wetlands and other jurisdictional waters (in accordance with COE procedures) and obtain the appropriate Section 404 permit.

Comment #9: Coordination with the Grants-In-Aid Branch of the Texas Parks and Wildlife Department and local park administrators is necessary to prevent conversion of grant assisted lands to other than public outdoor recreation use, as prohibited by Section 6(f) of the Land and Water Conservation Act.

Response to Comment #9: Coordination with the Grants-In-Aid Branch of the Texas Parks and Wildlife Department has occurred. No Section 6(f) lands will be converted.

8.6.4 Responses to Written Comments from Local Agencies

Agency: *Travis County (February 10, 2000)*

Comment #1: Both the eastern and western alignments affect public parks, so the State is obligated by state law to give weight to “clearly enunciated local preferences” for the alignment. The eastern alignment’s impacts on parks are more acceptable locally than the western alignment’s impacts.

Response to Comment #1: TTA has selected the eastern alignment (Alternative 2) as the Preferred Alternative. The Preferred Alternative will not adversely affect public parks.

Comment #2: Because the Capital Area Metropolitan Planning Organization (CAMPO) includes local and state officials that are directly accountable to the affected communities, CAMPO is in the best position to determine the alignment that best meets Central Texas’ needs.

Response to Comment #2: In accordance with federal law, TTA and FHWA are following the rules and regulations implementing NEPA as they pertain to the development of SH 130.

Comment #3: After analyzing Executive Order 12898 and FHWA Order 6640.23, Travis County concludes that the eastern Decker Lake alignment must be selected over the western Decker Lake alignment. If the western Decker Lake alignment is chosen, SH 130 may be halted by a civil rights lawsuit.

Response to Comment #3: TTA has selected the eastern alignment (Alternative 2) as the Preferred Alternative.

Comment #4: The Draft EIS uses faulty traffic forecasts.

Response to Comment #4: In keeping with federal regulations, the traffic forecasts are based on the local MPO’s traffic model and demographic forecast. The revised traffic forecast reported in the Final EIS is consistent with the model and demographic assumptions adopted by CAMPO in June 2000.

Comment #5: It is not clear whether or not the estimated right of way cost includes the purchase of access rights along parkway sections....The significant cost of noise barrier walls was not included in the cost estimate of the highway....It is also not clear in the Draft EIS whether utility relocation cost have been estimated.

Response to Comment #5: The purchase of access rights along parkway sections is not included in the cost estimate, as property access will be maintained. The cost of noise barriers can be accommodated within the contingency allowance provided for in the construction cost estimate. Utility relocation costs are included in the cost estimate.

Comment #6: Subdivision plats that have not received final plat approval as of December 31, 1998 were not included in the DEIS. This land use information needs to be updated.... The western alignment of SH 130 runs through Boulder Ridge in northeast Travis County and will result in the displacement of approximately 20 manufactured homes currently on the ground....Deerwood is another affordable housing community in southeast Travis County that is threatened by the alignment of SH 130.

Response to Comment #6: The Final EIS is based on updated land use information, current as of Spring 2000. TTA's selection of the eastern alignment (Alternative 2) as the Preferred Alternative avoids impacts to Boulder Ridge. The Preferred Alternative is realigned in the vicinity of Deerwood, such that no portion of the Deerwood community will be taken or adversely affected by SH 130.

Comment #7: The DEIS states that the toll road will not substantially affect land use, because there will be a limited number of service roads and access points. This statement is incorrect. In reality, anywhere an access point is near a major arterial, land use will always intensify and increase traffic in those vicinities.

Response to Comment #7: Land use impacts that may be specifically attributed to the toll road designation are discussed in **Section 4.1.4**. The discussion correctly notes that "...the toll road designation is not expected by itself to either appreciably diminish or augment induced land development. However, compared to a freeway, a toll road may further limit highway access, and could result in fewer opportunities for development along the facility thereby potentially reducing the amount of land use change related to secondary development."

Comment #8: The project crosses a portion of Travis County that uniformly has less natural resource/environmentally sensitive land than the western side of the county. However, it is possibly more sensitive from a historic and prehistoric cultural resource impact perspective. This is due to historic settlement tendencies of Native American and European immigrant populations. The western alignment impacts both the historic Fort Kenny and Palm Valley Lutheran Church in Williamson County, which are listed on the National Register of Historic Places. No such listed property is affected by an eastern alignment. Similarly, a spring area on Berry Creek in Williamson County will be impacted which could be a very valuable native American and historical site as well as a sensitive ecological site over the Edwards Aquifer recharge zone. A terminus which ties more directly into SH 195 and avoids this site might be a more environmentally sound choice.

Response to Comment #8: Comment noted. TTA has selected the eastern alignment (Alternative 2) as the Preferred Alternative. An assessment of potential impacts on cultural resources has been conducted in consultation with the Texas Historical Commission and is documented in **Section 4.13** of the Final EIS. A detailed cultural resource survey will be completed following right-of-way acquisition. The crossing of Berry Creek by SH 130 is along existing I-35. Measures to minimize adverse affects within the Edwards Aquifer recharge zone are discussed in **Section 5.5**. Specifically, a SW3P will be included in the design plans for the proposed action and a Water Pollution Abatement Plan will be in place to minimize impacts to the Aquifer.

Comment #9: Noise impacts are significantly higher on the western alignment due to its proximity to more established neighborhoods.

Response to Comment #9: Comment noted. TTA has selected the eastern alignment (Alternative 2) as the Preferred Alternative.

Comment #10: The noise impact analysis places the Northeast Metropolitan Park into the wrong Noise Abatement Criteria category. It is characterized as C (commercial/industrial) and should be B, in keeping with its park setting.

Response to Comment #10: The noise analysis, updated in the Final EIS, uses new traffic forecasts and analyzes affects at additional noise modeling locations. The

Northeast Metropolitan Park is evaluated under Category B (sensitive) as opposed to Category C (other). The Park will not be adversely affected by the Preferred Alternative.

Comment #11: The DEIS incorrectly labels [Northeast Metro Park] and does not correctly identify the park boundary.

Response to Comment #11: The correct label and boundary are shown in the Final EIS.

Comment #12: The eastern alignment of SH 130 as proposed would not only directly take parkland but also block the entrance to the park.

Response to Comment #12: The Final EIS shows how the eastern alignment (Alternative 2, the Preferred Alternative) has been revised to avoid taking park land or blocking the park entrance.

Comment #13: There was no noise monitoring data gathered for ambient pre-project conditions at the Travis County Turkey Farm Park Site off of Blue Bluff Road.

Response to Comment #13: This site is included in the updated noise analysis for the Final EIS.

Comment #14: The Jourdan-Bachman Pioneer Farm was not shown on the aerial photography. The proximity of the roadway to this facility will have noise effects that directly conflict with its pioneer culture and educational mission.

Response to Comment #14: The Preferred Alternative, Alternative 2, will not have any adverse effects on Pioneer Farm.

Comment #15: No noise modeling data was collected for ambient pre-project conditions at Popham Elementary School in Del Valle ISD.

Response to Comment #15: This site is included in the updated noise analysis for the Final EIS.

Comment #16: Wetland and Wildlife habitat impacts are understated throughout the document based upon the very general impact methodologies used. While the impacts

are not overly significant for the magnitude of the project, the impacts are down played with confidence beyond what the assessment technology delivers.

Response to #16: TTA is coordinating with COE staff regarding determination and verification of jurisdictional wetlands. After access is obtained and prior to construction, TTA will conduct field delineation of wetlands and other jurisdictional waters (in accordance with COE procedures) and obtain the appropriate Section 404 permit. An assessment of the biological value of impacted potential wetlands and other jurisdictional features along each build alternative is presented in **Section 4.9.1** of the FEIS. Impacts to wildlife and wildlife habitat are discussed in **Section 4.10.2.3**.

Comment #17: Insufficient attention is given to river-oriented recreation impacts; paddle sports on the Colorado and San Marcos Rivers in particular. These impacts could be offset through river trail creation and river access improvements consistent with TEA-21 objectives.

Response to Comment #17: Paddle sports may be temporarily disrupted in the vicinity of the proposed project crossing during construction, but will not be adversely affected once construction is completed. TTA is not responsible for river trail creation and public river access improvements.

Comment #18: The Edwards Aquifer discussion appears a bit dated and does not mention or consider impacts to the contributing zones as well as recharge zones.

Response to Comment #18: The Edwards Aquifer discussions included in the DEIS are consistent with Edwards Aquifer Rules (30 TAC 213.5) published in June 1999. There is no mention of the contributing zone because the build alternatives do not cross the contributing zone. There is a provision in the Edwards Aquifer Rules for a portion of the Transition Zone to act as a Contributing Zone (30 TAC 213.21(c)), but the Texas Natural Resource Conservation Commission has not identified as such any area crossed by the SH 130 build alternatives.

Comment #19: The NPDES discussion appears dated and does not mention or consider potential Phase II implications.

Response to Comment #19: The NPDES discussion is up-to-date. Inclusion of Phase II considerations in the FEIS is not appropriate.

Comment #20: The eastern alignment...offers the following advantages: fewer dense urban subdivisions, less commercial development, and more flexibility to avoid the few residences and commercial establishments in the path of the eastern alignment.

Response to Comment #20: Comment noted.

8.6.5 Responses to Other Written Comments

Commentors: *Sierra Club (March 20, 2000)*

Comment #1: The “purpose and need” for the project, as stated in the Draft Environmental Impact Statement, have changed.

Response to Comment #1: It is appropriate under NEPA to refine the statement of purpose and need to reflect additional research and analysis regarding the nature of the transportation problem.

Comment #2: The project fails to satisfy the original purpose and need for the project.

Response to Comment #2: **Section 4.21.2** of the Final EIS discusses how the build alternatives meet the purpose and need. Purpose and need is discussed in **Section 1.0**.

Comment #3: The DEIS fails to show diversion of traffic from IH-35.

Response to Comment #3: **Section 4.3.5** discusses impacts to traffic. **Table 4.3-5** shows the effect on other roadways, including IH-35 with and without SH 130.

Comment #4: SH130 serves mobility needs only of outlying development (and promotes sprawl).

Response to Comment #4: Transportation demand is discussed in **Section 1.1.1**. The performance of the SH 130 build alternatives in meeting project objectives, including the

avoidance of promoting urban sprawl, is discussed in **Section 4.21.2**. Light rail transit in particular is discussed in **Sections 2.2** and **2.3**.

Comment #5: SH130 is not an “innovative intermodal project.”

Response to Comment #5: The multimodal and intermodal aspects of the build alternatives are described in **Section 2.4.2** and summarized in **Section 4.21.2**.

Comment #6: Freight rail has not been adequately considered.

Response to Comment #6: Freight rail is discussed in **Section 2.3.4**. Potential use of the SH 130 median for freight rail is shown on **Figure 2.4-2, Typical Sections**.

Comment #7: Passenger rail has not been incorporated into the design.

Response to Comment #7: Commuter rail is discussed in **Section 2.2.1**. Mass transit is discussed in **Section 2.3.2**. Potential use of the SH 130 median for passenger rail is shown on **Figure 2.4-2, Typical Sections**.

Comment #8: The project fails to satisfy the changed “purpose and need” for the project.

Response to Comment #8: See response to Comment #2.

Comment #9: The DEIS fails to demonstrate congestion relief on IH-35.

Response to Comment #9: See response to Comment #3.

Comment #10: Congestion relief benefits of SH130 are overstated.

Response to Comment #10: The congestion relief benefits are derived from the travel demand forecast, which is consistent with standard modeling procedures, network and demographic assumptions approved by the Capital Area Metropolitan Planning Organization (CAMPO) and the San Antonio-Bexar County Metropolitan Planning Organization (MPO).

Comment #11: The DEIS fails to identify commuter traffic as the cause of IH35 congestion.

Response to Comment #11: Current demand for local, regional and interregional travel on I-35 is described in **Section 1.1.1**.

Comment #12: The assumptions used to predict traffic effects of the new project have not been disclosed.

Response to Comment #12: As stated in **Section 4.3.5**, traffic forecasts used for the SH 130 analysis are consistent with the CAMPO and San Antonio-Bexar County MPO travel demand model process, network and demographic assumptions. Traffic modeling assumptions are too voluminous to include in the FEIS. That information is available to the public from the two MPOs.

Comment #13: Congestion relief benefits provided by the roadway are overestimated, because generated traffic has not been taken into account.

Response to Comment #13: See response to Comment #10. The regional travel demand model takes into account all generated trips/traffic.

Comment #14: Congestion relief benefits provided by the roadway are overestimated, because land use changes have not been taken into account.

Response to Comment #14: The travel demand forecast, upon which the congestion effects are based, uses the official CAMPO and San Antonio-Bexar County MPO future land use and demographic assumptions. Land use changes are taken into account by the MPOs in developing the regional travel demand forecast.

Comment #15: Congestion relief calculations are not based on currently adopted CAMPO populations and employment distributions.

Response to Comment #15: The Draft EIS was consistent with the 1994 CAMPO populations and employment distributions. Since publication of the Draft EIS, CAMPO has approved a new long-range transportation plan, based on new demographic

assumptions. The Final EIS traffic analysis uses the newly adopted demographic assumptions.

Comment #16: Congestion relief numbers are based on a toll-free facility.

Response to Comment #16: The traffic analysis reported in the Final EIS assumes SH 130 is a toll road.

Comment #17: Congestion relief benefits are based solely on flawed models.

Response to Comment #17: See response to Comment #10.

Comment #18: The DEIS fails to demonstrate how mobility in the region will be improved.

Response to Comment #18: Mobility improvements are discussed in **Sections 4.3.5** and **4.3.6**.

Comment #19: The DEIS fails to demonstrate this project is the best alternative for increasing accessibility to important public facilities.

Response to Comment #19: **Section 4.21.2** discusses how the build alternatives meet the purpose and need, as defined in **Section 1.0**. **Section 2.2.1** discusses alternatives that failed to meet purpose and need. The CAMPO long range plan includes additional access improvements to the Austin Bergstrom International Airport, such as light rail transit (LRT), as part of a multi-modal solution for serving the airport's long-term access needs. Even with LRT, the MPO's plan showed a need for including SH 130 in the mix of long-term solutions..

Comment #20: The DEIS overlooks the need for transportation improvements which provide choices.

Response to Comment #20: Pedestrian, bicycle and public transportation alternatives are discussed in **Section 2.3**.

Comment #21: The project fails to satisfy the unofficial need for improving public safety.

Response to Comment #21: Public safety considerations are discussed in **Sections 1.1.2 and 4.3.5.**

Comment #22: The project fails to consider other alternatives to satisfy purpose and need which are more environmentally-friendly and sensitive to the community.

Response to Comment #22: See response to Comment #20.

Comment #23: The DEIS fails to mention the real purpose of the roadway, which is not mobility, but economic development benefits accruing to private land owners.

Response to Comment #23: Purpose and need are addressed in **Section 1.0.** Economic development benefits for private land owners is not a purpose of SH 130.

Comment #24: Transportation demand: the demand for new roadway facilities is overstated.

Response to Comment #24: Current and projected transportation deficiencies are addressed in **Section 1.1.2.** Travel demand estimates are consistent with CAMPO's long range transportation plan, adopted June 12, 2000.

Comment #25: The demand for a new facility to accommodate regional & interregional travel is overstated.

Response to Comment #25: The need for transportation improvements is discussed in **Section 1.1.** Travel demand estimates are consistent with CAMPO's long range transportation plan, adopted June 12, 2000.

Comment #26: Mobility and access constraints, particularly to public facilities, are overstated.

Response to #26: See responses to Comments #19 and #24.

Comment #27: Congestion problems are due to intersection capacity constraints and to peak hour flows, not average daily traffic volumes.

Response to #27: Comment noted. However, regional long range travel demand modeling analyzes the overall demand for transportation facilities (roadway, transit, etc.) created by population and employment growth. Intersection and peak hour capacity are important operational considerations, and tend to be addressed by more near-term measures, sometimes referred to as Transportation Systems Management (TSM). TSM improvements are included in CAMPO's long range plan, and are addressed in **Section 2.2.1** of the EIS.

Comment #28: NAFTA truck traffic impacts on I-35 are overstated.

Response to Comment #28: NAFTA truck traffic impacts are factually stated in **Section 1.1.1**.

Comment #29: The MIS and DEIS improperly dismissed viable alternatives which would have accomplished the project's stated "purpose and need" with fewer environmental and socioeconomic impacts.

Response to Comment #29: See response to Comment #19. A variety of alternatives were considered in **Section 2.2.1**, which discusses the reasons why the alternatives were not able to meet the project's purpose and need.

Comment #30: The DEIS does not consider upgrading existing surface streets.

Response to Comment #30: Improvements to existing roadways are discussed in **Sections 1.1.2** and **2.2.1**.

Comment #31: The DEIS should consider upgrading US 183.

Response to Comment #31: The EIS traffic analysis (the SH 130 traffic forecast and calculation of congestion relief on other roadways) is based on the CAMPO-approved long range transportation plan, which assumes that US 183 is upgraded to a freeway and expressway.

Comment #32: The DEIS should consider upgrading/constructing additional north-south arterials in Round Rock.

Response to Comment #32: The EIS traffic analysis is consistent with the City of Round Rock's transportation plan, including planned north-south arterial roadways.

Comment #33: The DEIS should consider rail transit.

Response to Comment #33: Commuter rail and light rail transit alternatives are considered in **Sections 2.2** and **2.3**, along with travel demand management and intelligent transportation systems. See response to Comment #7.

Comment #34: The DEIS should consider commuter rail.

Response to Comment #34: See responses to Comments #33 and #7.

Comment #35: The DEIS should consider light rail.

Response to Comment #35: See responses to Comments #33 and #7.

Comment #36: The DEIS should consider travel demand management.

Response to Comment #36: See responses to Comments #33 and #7.

Comment #37: The DEIS should consider no build with land use changes.

Response to Comment #37: TTA and FHWA have no authority to make land use changes. The No-Action Alternative was considered and rejected since it would not address the stated purpose of and need for the project.

Comment #38: The DEIS should consider no build with intelligent transportation systems.

Response to Comment #38: See response to Comment #33.

Comment #39: The DEIS should consider no build with commuterrail, light rail, TDM, land use changes and ITS.

Response to Comment #39: As discussed in **Section 2.4.1**, the No-Action Alternative considered in the EIS includes all the other proposed transportation improvements that make up CAMPO's long-range transportation plan. These proposed improvements include new roadways, public transportation, light rail transit, travel demand management strategies, and transportation systems management strategies. See responses to comments #7 and #33.

Comment #40: The DEIS should consider a build scenario with no frontage roads, purchase of access rights, scenic easements, and development rights on farmland.

Response to Comment #40: As stated in the Executive Summary, SH 130 is proposed to be constructed without frontage roads in most areas. Frontage roads would be added in other areas to restore property access where it exists now, and in consultation with local elected officials. Scenic easements are potential elements of all build alternatives, to be acquired by local governments at their discretion during the right-of-way acquisition process. TxDOT has no authority to purchase development rights.

Comment #41: Alternate transportation modes were improperly eliminated.

Response to Comment #41: The rationale for eliminating alternatives is explained in **Section 2.2.1**.

Comment #42: The stated project goals in selection of an alternative do not reflect extensive community input on the issue.

Response to Comment #42: Project goals and objectives are derived from extensive public and agency involvement conducted over many years throughout the corridor, as discussed in **Sections 1.2** and **8.0**. See response to Comment #43.

Comment #43: A locally preferred alternative should be developed.

Response to Comment #43: As stated in **Section 1.2.2**, SH 130 is supported by every city and county government in the region, both of the Metropolitan Planning

Organizations, both Metropolitan Transit Authorities, every Chamber of Commerce, and every major newspaper in the area. The Preferred Alternative, Alternative 2, was the overwhelming choice of citizens who participated in the Public Hearing comment process, as well as the alternative heavily favored by the City of Round Rock, the City of Austin, and Travis County.

Comment #44: The negative environmental and socioeconomic impacts of SH130 have been underestimated.

Response to Comment #44: Social, economic and environmental conditions and impacts are accurately estimated and fully evaluated in **Sections 3.0** and **4.0** for the No-Action Alternative and each of the Build Alternatives.

Comment #45: Land use impacts are understated.

Response to Comment #45: Both direct and indirect land use effects are discussed in **Sections 4.1, 4.2** and **4.18.1**.

Comment #46: SH 130 will, in fact, affect the amount, the distribution, and the type of growth in the region.

Response to Comment #46: Secondary land use impacts are discussed in **Section 4.18.1**.

Comment #47: SH130 is not compatible with the City of Austin's Smart Growth policies.

Response to Comment #47: As noted in **Section 4.1.1**, the City of Austin's "Smart Growth Initiative" is generally intent on stimulating growth in eastern Travis County, and away from the more sensitive environmental features found in western Travis County. The City of Austin has vigorously favored the Preferred Alternative, Alternative 2.

Comment #48: Indirect (secondary) impacts on farmland have been ignored.

Response to Comment #48: Secondary impacts on farmland are discussed in **Section 4.18**.

Comment #49: TTA may have violated the farmland protection policy act by failing to properly complete the AD-1006 form.

Response to Comment #49: Revised AD-1006 forms are included in the Final EIS. The forms have been properly completed through close coordination with the NRCS.

Comment #50: Mitigation measures for SH 130 should include a farmland protection program or purchase of development rights from active producers along the new roadway.

Response to Comment #50: TTA lacks the authority to implement a farmland protection program or acquire development rights from producers. As discussed in **Section 4.1.2**, construction of SH 130 may indirectly affect land use within the corridor by helping to enhance land development opportunities. However, SH 130 is only one factor in creating favorable land development conditions; other prerequisites for growth within the corridor include demand for new development, favorable local and regional economic conditions, adequate utilities, and supportive local land development regulations and policies. Nevertheless, the SH 130 build alternatives may contribute to secondary social, economic and environmental impacts. These impacts have already resulted from development activity that has and continues to occur within the corridor, especially in the northern portion. Development impacts – both beneficial and adverse – will continue to be felt within the corridor regardless of whether or when SH 130 is built. Efforts to enhance beneficial aspects and minimize adverse effects of development are subject to the existing land use and development controls of the local jurisdictions throughout the corridor. **Table 4.18-1** summarizes the various land use controls in place within the SH 130 study corridor.

Comment #51: DEIS wrongly assumes that other prime farmland is available for replacement.

Response to Comment #51: As stated in the Executive Summary, the total amount of important farmland converted by SH 130 will be less than one-half of one percent of the total important farmland in Williamson, Travis, Caldwell, and Guadalupe Counties.

Soils associated with the Blackland Prairie region are discussed in **Section 3.5.4**, and are included in the definition of important farmland discussed in **Section 4.2.3**.

Comment #52: The DEIS falsely assumes farmland will be converted to residential areas with or without the new highway.

Response to Comment #52: The existing pattern of land development and subdivision activity in the SH 130 corridor, together with a description of the local government land development plans and policies that help make development possible, is documented in **Section 3.1**.

Comment #53: The DEIS fails to account for the importance of agriculture to the local economy.

Response to Comment #53: Additional information about local economies is provided in **Section 3.2.2**.

Comment #54: The DEIS fails to account for the need to preserve rural heritage.

Response to Comment #54: The historic role of agriculture in the SH 130 corridor is discussed in **Section 3.8.3**. Preservation of rural farmsteads is discussed in **Sections 3.8.5** and **4.13.2**. TTA has coordinated extensively with the Texas Historical Commission and the State Historic Preservation Office regarding the SH 130 project.

Comment #55: The DEIS fails to address problems associated with residential encroachment onto farming.

Response to Comment #55: Impacts to farmland, both directly and indirectly attributable to SH 130, are discussed.

Comment #56: Social impacts are understated.

Response to Comment #56: Social impacts are factually stated in **Section 4.3** (neighborhood impacts, community cohesion impacts, environmental justice considerations, impacts on community resources, traffic and safety impacts, impacts to

travel patterns and accessibility, and toll road effects). **Section 4.4** factually states relocation and displacement impacts.

Comment #57: Impacts on neighborhoods are understated.

Response to Comment #57: See response to Comment #56.

Comment #58: The DEIS fails to address loss of community cohesion.

Response to Comment #58: See response to Comment #56.

Comment #59: Environmental justice impacts are understated.

Response to Comment #59: See response to Comment #56.

Comment #60: Impacts to traffic and public safety are understated.

Response to Comment #60: See response to Comment #56.

Comment #61: Relocations and displacement impacts are understated.

Response to Comment #61: See response to Comment #56.

Comment #62: Economic impacts are understated.

Response to Comment #62: Economic impacts are factually stated in **Section 4.5**.

Comment #63: Positive economic impacts associated with the project have been overestimated.

Response to #63: See response to Comment # 62.

Comment #64: The conversion of land in outlying areas to residential or commercial uses does not necessarily produce a net benefit.

Response to Comment #64: Comment noted. Suburban development, which has been occurring in the Austin area for at least the last four decades, is not the primary subject of this EIS.

Comment #65: The Thirty Year Comparative Economic Impact Analysis of Proposed Alignment Alternatives, Texas SH 130, incorrectly included private benefits in the total economic benefits accruing from the highway.

Response to Comment #65: The referenced report is not a part of the EIS.

Comment #66: Negative economic impacts associated with the project have been omitted.

Response to Comment #66: Negative economic effects are discussed in **Section 4.5**.

Comment #67: Project will increase demand for new infrastructure on the fringes of developed areas.

Response to Comment #67: Current suburban growth trends within the corridor are discussed in **Section 1.1.1**. All of the municipalities within the SH 130 corridor have either incorporated SH 130 into their comprehensive development plans, or have adopted resolutions indicating their support for SH 130 (**Section 4.1.1**), as part of their respective strategies for addressing continued development within the corridor.

Comment #68: Project will undermine efforts to foster development where capacity exists.

Response to Comment #68: See response to Comment # 67.

Comment #69: The project will increase energy consumption.

Response to Comment #69: A general assessment of energy requirements is presented in **Section 4.16**.

Comment #70: Noise impacts are understated.

Response to Comment #70: Noise impacts are factually stated in **Section 4.6**.

Comment #71: Air quality impacts are understated.

Response to Comment #71: Air quality impacts are factually stated in **Section 4.7**.

Comment #72: Water quality impacts are understated.

Response to Comment #72: Water quality impacts are factually stated in **Section 4.8**.

Comment #73: The air in the Austin region has become so polluted that it is making people ill.

Response to Comment #73: Air quality impacts are factually stated in **Section 4.7**.

Comment #74: The addition of 124,000 cars per day to the region from the SH 130 project will significantly and negatively affect Austin's air quality.

Response to Comment #74: SH 130 is not *causing* vehicle trips to occur. As explained in **Section 1.0**, the demand for travel in this corridor is local, regional and interregional. It derives from population and employment growth within the corridor, as forecasted by both the Austin and San Antonio MPOs, as well as expected increases in NAFTA-related traffic., also discussed in **Section 1.0** of the EIS. As noted in **Section 4.7**, the EPA considers Region 11 and 13, which encompass the SH 130 study corridor, to be in attainment with respect to the National Ambient Air Quality Standards (NAAQS). In addition, the SH 130 corridor is in an area where the *State Implementation Plan* (SIP) does not contain any transportation control measures.

Comment #75: Austin's smog area size has been growing since the 1970s.

Response to Comment #75: Air quality impacts are factually stated in **Section 4.7**.

Comment #76: The DEIS for SH 130 has completely failed to address the ozone non-attainment implications for the Austin area.

Response to Comment #76: Ozone levels in the Austin area are discussed in **Section 3.4.3** along with a discussion of the one-hour and eight-hour standard.

Comment #77: Another concern is the absence of any credible air quality modeling for ozone and precursors to determine the role the highway will have on Austin's non-attainment situation.

Response to Comment #77: CAMPO is currently preparing an air quality conformity analysis for transportation projects in the Austin area, including SH 130. This regional analysis of ozone air quality will consider setting an emission budget for the Austin area and the impact of projects such as SH 130 on the budget.

Comment #78: The EIS reflects more of the outdated environmental and transportation planning that created the extreme air quality problems in Texas from which we now suffer.

Response to Comment #78: The EIS is fully consistent with current federal and state procedures and regulations, and fully compliant with the National Environmental Policy Act.

Comment #79: The increased particulate matter air pollution is a chief health concern because our lungs not only become soiled with dirty spots but these tiny suitcases of fine particles carry and inject toxic chemicals directly into the bloodstream.

Response to Comment #79: Comment noted.

Comment #80: One example of increased vehicle pollution is from diesels. Some of these diesel emissions are carried on fine particulate matter or soot, and higher diesel truck traffic flows will produce much higher volumes of PM₁₀ and PM_{2.5}. This was inadequately addressed in the EIS. US EPA has a new PM_{2.5} standard, which was also inadequately addressed. Refined PM_{2.5} modeling also needs to be performed to help analyze the level of fine particle emissions in the SH 130 area. Overall, the SH 130 DEIS is not based on credible science, and the total air pollution and environmental impacts need to be addressed fully. The cost to human health has been almost totally ignored.

Response to Comment #80: The EPA new PM_{2.5} standard is addressed in the Final EIS in **Sections 3.4** and **4.7.2**.

Comment #81: The DEIS does not identify downstream surface water uses.

Response to Comment #81: Impacts to the public water supply are discussed in **Section 4.8**.

Comment #82: The DEIS does not assess the probability of a spill from the proposed roadway.

Response to Comment #82: Impacts from a possible spill event are discussed in **Section 4.8**.

Comment #83: The DEIS does not estimate pollutant loads from the proposed roadway construction and operation, or from induced urban development.

Response to Comment #83: Pollutants from automobiles and trucks are discussed in **Section 4.8**. Construction impacts are discussed in **Section 4.17**.

Comment #84: DEIS describes proposed routes across several first order streams but does not discuss the environmental significance of these first order, headwater streams.

Response to Comment #84: The function and environmental quality of classified surface water segments crossed by SH 130 build alternatives is discussed in **Section 3.6**. Measures to control water pollution are discussed in **Section 5.5**.

Comment #85: The section on groundwater is incomplete and misleading.

Response to Comment #85: Groundwater resources, the probable effect of SH 130 on those resources, and the measures to be employed to protect groundwater resources are factually and adequately described in **Sections 3.6.2, 4.8.2, and 5.5**.

Comment #86: The DEIS omits all discussion of estimates of increased sediment accumulation in Decker Lake.

Response to #86: Sedimentation of Decker lake would be avoided through implementation of a Storm Water Pollution Prevention Plan in accordance with EPA regulations. Because construction and operation of the Preferred Alternative, Alternative 2, would occur east of Lake Walter E. Long, it would not result in any increased sedimentation of the lake. Potential sedimentation effects on surface waters and proposed mitigation measures are discussed in **Section 4.17, 5.2, and 5.5.**

Comment #87: The DEIS implies that short-term impacts of construction are predictable and can be mitigated.

Response to #87: The effect of construction phase impacts and measures to mitigate those impacts are factually stated in **Sections 4.17 and Section 5.0.**

Comment #88: On pages 4-69, plugging and abandonment of an existing water-supply well is proposed as a measure to prevent aquifer contamination, a completely unacceptable and insufficient remedy.

Response to #88: The discussion on page 4-69 of the Draft EIS relates to the direct impact of SH 130 build alternatives on the public drinking water supply well at the Live Oaks at Berry Creek RV park. The impact to this well, which draws water from the Edwards Aquifer, is that it will no longer serve as a public drinking water supply. The EIS reports that the well casing will be cut below grade, capped, and covered by fill in accordance with federal and state standards for well-head protection; therefore, contamination of the Edwards Aquifer is not expected through this well. In addition to the Live Oaks at Berry Creek well, there are 20 other public supply wells potentially affected by one or more of the proposed build alternatives for SH 130. These wells are identified and described in **Table 4.8-1**, and their locations with respect to the eight build alternatives are shown on **Figures 4.8-1a, b, and c.** Impacts to these water systems will be avoided by using the TNRCC's recommended measures for diverting runoff away from the well-heads. As reported in **Section 3.6.2 Ground Water Characteristics**, over 130 wells were identified through state well inventory reports and area property owners as being in an area potentially affected by one or more of the alternatives for the proposed action. These wells, if ultimately found to be within the right-of-way of the selected alternative, will be capped and covered according to state and federal standards to avoid contamination of ground water supplies.

Comment #89: The DEIS makes no specific recommendations of measures to prevent accidental spills into the river/aquifer system during highway operation.

Response to #89: As stated in **Section 4.8.2**, temporary and permanent water pollution control measures to be taken during and after construction will be in compliance with guidelines set forth by the TNRCC for actions located within the aquifer recharge zone. This section also addresses the potential use of hazardous material traps to prevent catastrophic spill events from infiltrating the Edwards Aquifer Recharge Zone. Additional information on compliance with the Edwards Aquifer rules is also found in this section. Measures to control water pollution are discussed in **Section 5.5**. (Note: similar comments were received from the Sierra Club prior to the distribution of the DEIS, and were taken into consideration.)

Comment #90: Pages 5-7 through 5-9 present soil and water resources mitigation options. These sections are very general.

Response to #90: **Section 5.0** describes 50 different measures to protect soil, water, and vegetation resources. Design or engineering specifications for mitigation measures are not included in the EIS in keeping with readability and length guidelines recommended by the Council on Environmental Quality. These measures will be outlined in the Storm Water Pollution Prevention Plan and the Water Pollution Abatement Plan (where appropriate).

Comment #91: Wetlands impacts have been overlooked.

Response to #91: Wetlands impacts and mitigation measures are discussed in **Sections 4.9** and **5.7**.

Comment #92: Impacts on native prairies have been understated.

Response to #92: Native prairie resources and potential impacts are factually stated in **Sections 3.7.2** and **4.10**. The Preferred Alternative, Alternative 2, does not directly affect the Mokan Prairie or the Indiangrass Preserve.

Comment #93: Secondary and cumulative impacts have been understated.

Response to #93: Secondary and cumulative impacts are factually stated in **Section 4.18**.

Comment #94: Negative economic effects have been underestimated.

Response to #94: Both potentially beneficial and adverse economic effects are discussed in **Section 4.5**.

Comment #95: Sustainability of the region has been overlooked.

Response to #95: The term “sustainability” is not specifically used. However, irreversible and irretrievable commitments of resources are discussed in **Section 4.20**. The purpose and need for SH 130, discussed in **Section 1.0**, include consideration of long-term traffic congestion relief, mobility and access needs.

Comment #96: The DEIS overlooks the secondary socioeconomic effects of the roadway.

Response to #96: Secondary socioeconomic effects are discussed in **Section 4.18**.

Comment #97: The DEIS fails to identify the increased demand for new infrastructure.

Response to #97: The increased demand for new infrastructure is identified in **Section 4.18**.

Comment #98: The DEIS overlooks the loss of community cohesion.

Response to #98: Impacts to community cohesion are discussed in **Section 4.3.2**.

Comment #99: The DEIS fails to identify impacts on employment and housing opportunities.

Response to #99: Impacts on employment and housing opportunities are discussed in **Section 4.18**.

Comment #100: The DEIS fails to identify adverse economic impacts on revitalizing or redeveloping industrial areas of East Austin.

Response to #100: Section 1.1.2 notes that with improved mobility and accessibility, the study corridor will be able to help accommodate future travel demands, such as those created by the City of Austin's *Smart Growth* long range planning initiative. Existing mobility and accessibility deficiencies within the corridor east of I-35 pose transportation-related disadvantages within the city's "Desired Development Zone." The City of Austin's explicit intention to focus growth in eastern Travis County is accompanied by the need to provide new infrastructure, including transportation infrastructure. The compatibility of SH 130 with local plans and policies is discussed in Section 4.1.1. Section 4.18 contains information about how local governments can control the type and extent of development.

Comment #101: SH130 has the potential to reduce the central city's fiscal base and increase local communities public service costs.

Response to #101: See response to Comment #100.

Comment #102: The DEIS fails to evaluate secondary financial impacts to the City of Austin.

Response to #102: See response to Comment #100.

Comment #103: The addition of the SH130 project to the CAMPO Transportation Improvement Program (TIP) will have the effect of putting the MPO out of compliance with federal requirements that the TIP be financially constrained.

Response to #103: CAMPO's Transportation Improvement Program includes SH 130.

Comment #104: The DEIS fails to identify increased transportation-related energy use and increased building energy use.

Response to #104: Energy requirements are identified in Section 4.16.

Comment #105: The DEIS fails to evaluate secondary effects of the roadway on homes and businesses.

Response to #105: Secondary effects on homes and businesses are discussed in **Section 4.18**.

Comment #106: Negative transportation impacts have been understated or overlooked.

Response to #106: Potentially beneficial and adverse transportation impacts are discussed in **Section 4.3.6**.

Comment #107: New highways tend to increase trip lengths and total VMT in a region.

Response to #107: See response to Comment #10.

Comment #108: SH130 will mean increased reliance on automobile travel in the region.

Response to #108: The travel demand forecast for SH 130 is consistent with standard modeling procedures, network and demographic assumptions, and long range transportation plans approved by the Capital Area Metropolitan Planning Organization (CAMPO) and the San Antonio-Bexar County Metropolitan Planning Organization (MPO). SH 130 is included in the approved long-range plans for both metropolitan areas. The approved long-range transportation plans for both metropolitan areas contain a wide array of non-automobile related improvements, such as transit, bicycle, and pedestrian.

Comment #109: SH130 represents hindrance of efforts to promote transit and enhance mobility of the disadvantaged.

Response to #109: See response to Comment #108.

Comment #110: Increased congestion on local streets due to unanticipated nodal development.

Response to #110: Impacts to other roadways are discussed in **Section 4.3.6**. Also, see response to Comment #12.

Comment #111: The DEIS, by failing to recognize the impact of generated traffic, fails to consider the effect on downstream congestion.

Response to #111: See response to Comment #110.

Comment #112: The DEIS fails to address loss of MKT right-of-way as a transit corridor.

Response to #112: The potential use of the MKT right-of-way as a transit corridor is unaffected by SH 130. The median of SH 130 is designed to accommodate possible future transportation uses, such as public transit.

Comment #113: Environmentally sensitive areas and endangered species could be impacted.

Response to #113: These impacts are addressed in **Section 4.0**.

Comment #114: Economic development has been overstated.

Response to #114: Current development trends within the SH 130 corridor, as well as potential impacts to development created by SH 130, are factually addressed.

Comment #115: Congestion relief has been overstated.

Response to #115: See response to Comment #10.

Comment #116: Analysis incorrectly assumes new commercial development, no residential development.

Response to #116: See response to Comment #10.

Comment #117: Analysis doesn't address zero-sum nature due to potential loss of CBD to new suburban areas.

Response to #117: See response to Comment #10.

Comment #118: Alignment issues should be considered mitigation.

Response to #118: The Preferred Alternative, Alternative 2, has been selected in part due to the desire to mitigate impacts, such as impacts to public parks.

Comment #119: The eastern alignment will serve as a bypass, while the western alignment will serve commuters.

Response to #119: Comment noted.

Comment #120: The eastern alignment means less traffic through East Austin neighborhoods.

Response to #120: Comment noted.

Comment #121: The eastern alignment would mean new industrial uses would be located away from existing residential areas.

Response to #121: Comment noted.

Comment #122: The eastern alignment would preserve MoKan right-of-way as a transit corridor.

Response to #122: Comment noted.

Comment #123: Design of roadway with no frontage roads should be considered mitigation.

Response to #123: This is acknowledged in **Section 5.1.3**.

Comment #124: CAMPO actions have made the desire for no frontage roads very clear.

Response to #124: CAMPO's desire for limited access points is incorporated into the project's goals and objectives. Frontage roads are provided primarily to restore property access.

Comment #125: TTA should purchase access rights if access is cut off to individual property owners.

Response to #125: Although not specifically calculated, the expense of purchasing access rights for all properties that would be "land locked" by the construction of SH 130 would far exceed the cost of providing frontage roads in these limited locations. This would not be consistent with TxDOT policies nor with CAMPO's desire (included as a project objective) for realistic financial plans.

Comment #126: Frontage roads encourage strip development, which is inconsistent with Austin's Smart Growth policies.

Response to #126: See response to Comment #100. See response to Comment #40.

Comment #127: Frontage road development will produce its own traffic and compete with mobility needs of through traffic.

Response to #127: See response to Comment #126.

Comment #128: Noise mitigation, whether or not legally required, should be discussed more fully.

Response to #128: The Final EIS contains a complete noise mitigation analysis and recommendations for noise barriers along the Preferred Alternative.

Comment #129: Many of the mitigation measures proposed relate only to the (relatively brief) construction phase.

Response to #129: Mitigation measures will be implemented for both the construction and operation of the facility. For example, permanent water pollution control measures are discussed in **Section 4.8.2** and **Section 5.5**.

Comment #130: Section 5.1.1 of the DEIS refers to pedestrian and vehicular safety only during construction.

Response to #130: Section 5.1.1 of the Final EIS addresses pedestrian and vehicular safety also after construction.

Comment #131: Mitigation measures to minimize impacts on neighborhoods appear to be insufficient.

Response to #131: Mitigation measures such as noise walls and berms, grade separation at cross streets, and construction of side walks and frontage roads are proposed as ways to minimize impacts on neighborhoods.

Comment #132: The measures to minimize impacts to air quality refer solely to the construction phase.

Response to #132: As discussed in Section 4.7.2, Ozone (O₃), Hydrocarbons (HCs), and Nitrogen Oxide (NO_x) air quality concerns are regional in nature, and as such meaningful evaluation on a project by project basis is not possible. The EPA considers Region 11 and 13, which encompass the SH 130 study corridor, to be in attainment with respect to the National Ambient Air Quality Standards (NAAQS). In addition, the SH 130 corridor is in an area where the State Implementation Plan (SIP) does not contain any transportation control measures. Regional air quality measures, along with state and federal air quality regulations, apply to the entire transportation system, as well as to non-mobile sources of air pollution.

Comment #133: Measures to control water pollution are likewise only for the construction phase.

Response to #133: Water pollution mitigation measures are proposed for both the construction and operation of the facility. These are discussed in Section 4.8.2 and Section 5.5.

Comment #134: Project fails to meet purpose and need.

Response to #134: Section 4.21.2 summarizes how the Preferred Alternative meets the project's stated purpose and need.

Comment #135: Project causes significant negative environmental and socioeconomic impacts.

Response to #135: The project's adverse environmental and socioeconomic impacts will be mitigated in full compliance with state and federal practices, regulations and legal requirements.

Comment #136: Project is not intermodal.

Response to #136: See response to Comment #5.

Comment #137: The project development process has failed to meet minimum federal requirements.

Response to #137: The project development process for SH 130 is in full compliance with state and federal requirements.

Comment #138: The preferred alternative satisfies only the business community and TxDOT's need to obtain bond financing.

Response to #138: See response to Comment #43.

Comment #139: The project does not provide what the community wants.

Response to #139: See response to Comment #43.

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9.0 LIST OF ABBREVIATIONS

ABIA	Austin-Bergstrom International Airport
ACHP	Advisory Council for Historic Preservation
ADT	average daily traffic
AMATP	Austin Metropolitan Area Transportation Plan
APE	Area of Potential Effect
AVI	automatic vehicle identification
C	Centigrade
CAMPO	Capital Area Metropolitan Planning Organization
CARTS	Capital Area Rural Transportation System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CR	County Road
DAP	Department of Antiquities Protection, Texas Historical Commission (THC)
dB	decibel
dBA	A-weighted decibel value
DDZ	Desired Development Zone
DEIS	Draft Environmental Impact Statement
DOA	Department of Architecture, Texas Historical Commission (THC)
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ETJ	extraterritorial jurisdiction
F	Fahrenheit
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FM	Farm-to-Market Road
FPPA	Farmland Protection Policy Act
GAT	Geologic Atlas of Texas
GIS	Geographic Information System
HOV	high occupancy vehicle
HSR	high speed rail
ISD	Independent School District

ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
L _{eq}	Equivalent Sound Level
LOS	Level of Service
LRT	light rail transit
LWCA	Land and Water Conservation Act
M-K-T	Missouri-Kansas-Texas Railroad
mg/L	milligrams per liter
MIS	Major Investment Study
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAFTA	North American Free Trade Agreement
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NO _x	Nitrous Oxide emissions
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRP	National Register Programs, Texas Historical Commission (THC)
NWI	National Wetland Inventory, U.S. Department of the Interior
ppm	parts per million
RAP	Relocation Assistance Program
RM	Ranch-to-Market Road
RV	recreational vehicle
SA-BC MPO	San Antonio-Bexar County Metropolitan Planning Organization
SDC	Texas State Data Center
SH	State Highway
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOV	single occupancy vehicle
SW3P	Storm Water Pollution Prevention Plan

SWPP	Source Water Protection Program
TARL	Texas Archeological Research Laboratory
TBCDS	Texas Biological & Conservation Data System
TDM	Transportation Demand Management
TDS	total dissolved solids
TDWR	Texas Department of Water Resources
THC	Texas Historical Commission
TND	Traditional Neighborhood Development
TNRCC	Texas Natural Resource Conservation Commission
TPWD	Texas Parks and Wildlife Department
TSM	Transportation Systems Management
TSWQS	Texas Surface Water Quality Standards
TTA	Texas Turnpike Authority
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
UPRR	Union Pacific Railroad
USCE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	vehicle miles traveled
VOC	volatile organic compound
vpd	vehicles per day
WPAP	Water Pollution Abatement Plan
WWTP	wastewater treatment plant
µg/m ₃	micrograms per cubic meter

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APPENDIX D
CULTURAL CHRONOLOGY, PREDICTIVE MODELING,
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CULTURAL CHRONOLOGY

Prehistoric

Environmental Background

A large portion of the project area lies within the Blackland Prairie, a narrow band of black clay that parallels the north/south section of the Balcones Escarpment. The dark, calcareous, waxy clay soils (i.e., vertisols) of the Blackland Prairie support predominantly tall-grass species that have more recently, due to overgrazing and cultivation, been invaded by opportunistic woody brush types such as mesquite and juniper as well as blackjack oak and post oak. The Blackland Prairie, and Grand Prairie to the north, lie within the Texan biotic province and form the southernmost extension of the true Prairie communities (Diamond and Smeins, 1985:307). The gently sloping, almost level surfaces of the Grand Prairie to the north, however, are characterized by shallower Mollisols and thus tend to support a mid-grass rather than a tall-grass prairie. Bands of Blackland Prairie do occur within the Oak Woods and Prairies region to the east, while the Balcones Escarpment serves as its western boundary. The Blackland Prairie is separated from the other tall grass prairies on the Gulf Coastal Plain by the Post Oak Belt, a band of sandy soil that supports an Oak and Hickory belt.

As previously mentioned, the eastern margin of the Edwards Plateau is situated within the transition zone between areas of subtropical humid and subtropical subhumid climates (Ricklis and Collins, 1994). In combination with the marked shift from the deep soils of the Blackland Prairie to the generally thin soils of the plateau, this makes for a major and distinct vegetational ecotone. To the east of the Balcones fault zone, the Blackland Prairie is dominated by a mix of tall grass species. Upland areas support oak mottes, and on the deep, clayey soils on gentle slopes are found small scattered oaks and mesquite. In larger stream valleys, deep and moist soils support dense arboreal vegetation dominated by oak, pecan, walnut, hackberry, sumac, bald cypress, and cottonwood. On deep soils on the higher stream terraces are often found extensive stands of mesquite. Even in small upland swales, moisture associated with intermittent streams and groundwater supports localized stands of small cypress and cottonwood.

The central Texas Edwards Plateau and Blackland Prairie ecotone is drained by the Colorado, Guadalupe, other rivers and their tributaries. The generally southeastward-flowing Colorado, River has its headwaters northwest of the Edwards Plateau and is fed by a number of sizable tributaries such as the Concho, San Saba, Llano, and Pedernales rivers (Ricklis and Collins, 1994:23). Numerous third and fourth-order streams flow through the many valleys of the dissected

plateau. Ultimately the Colorado empties into the Gulf of Mexico just northeast of Matagorda Bay, where its sediment load has resulted in an extensive delta.

Central Texas Archeological Area

The Blackland Prairie falls within the somewhat poorly defined central Texas archeological region. Traditionally, at least in archeological discussions, central Texas has been described in terms of Blair's (1950) biotic provinces. As such, a very large portion of all archeological versions of "central Texas" were subsumed under the single biotic rubric of the Balconian province (Ellis, et al., 1995). This province, which includes most of the Edwards Plateau, is characterized by an intermixture of faunal and floral species associated with surrounding major provinces, specifically the West Gulf section of the Coastal Plain Province and the Great Plains Province to the west. The Texan province, as defined by Blair (1950), is the broad ecotone between the forested regions of east Texas and the grasslands of west and north Texas. This includes most of the Blackland Prairie and Post Oak belt in the region as well as the eastern portion of the Gulf Coastal Plain.

More recent studies show that there is wide environmental diversity within Blair's provinces, even within the relatively small area subsumed under Prewitt's (1981) version of the central Texas archeological region (Ellis, et al., 1995). In his attempt to build a prehistoric cultural chronology for the region, Prewitt (1981) narrowed the suggested boundaries from that of previous archeological studies (Suhm, 1960; Weir, 1976) to include fewer counties on its northern, western and eastern margins. Still, the distributions of geology, large-scale land forms, biota, and typologically distinct artifacts in what has traditionally been considered the central Texas archeological region (Prewitt, 1981) indicates considerable diversity and variation in both topography and locally available resources. Though smaller than Blair's environmental region, Prewitt's central Texas region appears to have arbitrary geographic boundaries and encompass an environmentally diverse area that is characterized by marked changes in landscapes, climatic variations, and diverse vegetative zones (Ellis et al., 1995).

The Blackland Prairie is considered to be part of the central Texas archeological region based on material culture affinities with the Edwards Plateau (Ellis et al., 1995). It seems probable that prehistoric occupation of this environment would have required the utilization of both plateau and prairie resources with considerable seasonal mobility between the two (Potter and Black, 1995; Ricklis and Collins, 1994). In addition to a variable mosaic of existing resources, the biotic productivity and resource potential of these locally diverse environments may have fluctuated according to local and/or broader climatic variation (moisture or temperature, Ricklis and Collins,

1994). The exploitation of specific environments in this region would have required the consideration of widely divergent economic choices from season to season and year to year, resulting in increased mobility between these environments. Thus, meaningful settlement pattern studies of the prehistoric inhabitants of the Edwards Plateau-Blackland Prairie ecotone must consider if possible, the full range of available economic choices against the background of shifting climatic conditions and resulting variation in the locally available resource base. One result of this diversified and at times shifting central Texas resource base is a variety of site types (Black, 1989).

Site Types

Most of the prehistoric sites in central Texas are open, unprotected sites sitting or situated on alluvial terraces adjacent to streams or rivers (Black, 1989). A typical open site in central Texas contains refuse such as chert flaking debris, broken chert tools, fragmented burned rock, land snails, fragmented animal bone (uncommon), and charred plant remains (rare) (Black, 1989). An additional characteristic of open sites is the presence of diagnostic stone tools often representing occupations from different periods or phases and ultimately suggesting repeated use over hundreds or perhaps thousands of years. Black (1989) describes a range of open site types expected to be encountered throughout central Texas of which the most pertinent are discussed below.

Open occupation sites are occasionally found in upland areas such as hill tops, hill slopes, or bluff tops that lack alluvial sediments. The characteristic lack of stratification at open sites in upland settings leads to problems in interpretation as repeated occupations from many time periods cannot be clearly separated. Although stratified, preserved, open sites, occasionally found in active floodplain environments, and single component open sites have been recorded, they are somewhat rare. Buried sites in alluvial settings with intact, separated prehistoric components or occupations have the potential to reveal meaningful insights into prehistoric behavior through the distributional patterning of the artifacts and are much sought after in studies of central Texas prehistory (Black, 1989).

Burned rock midden sites are considered to be characteristic of central Texas archeology (Black, 1989). These fire-cracked and discolored limestone rock features are generally found in terrace and/or upland settings but are noticeably absent on the Blackland Prairie (Johnson, 2000). Johnson (2000) theorizes that the majority of semi-succulent plants which engendered the creation of numerous burned rock middens on the Edwards Plateau during the Archaic period were not present on the Prairie. Instead, the Prairie offered a complete set of its own resources which fostered prehistoric occupation, including abundant water and other types of plant foods. Bison were an

important prehistoric resource and may have been more attracted to the Prairie areas because of the tall grasses (Johnson, 2000).

Lithic open sites, containing only the debris from flintworking activities, are most frequently found in upland areas and are often referred to as lithic procurement, quarry, or workshop sites. Numerous surveys conducted in the central Texas area suggest that lithic sites are the most common site type. The remains from such sites are believed to be the result of specialized, short-term activities, whether identified as tool maintenance/manufacture locales or intensive chert resource procurement locales. Less common, but still present, in the central Texas region are rockshelter sites. At times, cliffs and overhangs made ideal shelters for prehistoric groups and where available, were extensively utilized. Even in central Texas, the preservation of perishable materials is generally much better in rockshelter deposits. Late Archaic and Late Prehistoric cemetery sites such as the Loeve-Fox site (41WM230, Prewitt, 1982) and the Bessie Kruze Site (41WM13, Johnson, 2000) are also well documented on the Blackland Prairie.

General Topography

The environmental context of the SH130 project area influenced the adaptive systems of the prehistoric inhabitants. Topographically, most of the SH 130 project area lies on the Blackland Prairie but is adjacent to resource rich areas of the neighboring Balcones Escarpment and Edwards Plateau. The Blackland Prairie also offers numerous riverine and associated riparian environments. Along SH 130, Gilleland Creek, Berry Creek, Wilbarger Creek, Brushy Creek, the San Gabriel River, Walnut Creek, Onion Creek, and the Colorado River would offer such resources. Resources from three different environmental zones (riparian, prairie, and plateau) would have been available to prehistoric inhabitants of the area. Whereas some studies suggest the possibility of seasonal movement between these zones (Black, 1989, Ricklis and Collins, 1991), others argue that the Prairie was entirely self-sustaining and that the prehistoric inhabitants had no need to pursue the resources of neighboring areas.

*Climatic Data*¹⁶⁶

The settlement patterning of prehistoric groups is related to local and/or regional paleo-environmental change. Knowledge of environmental conditions during the past is necessary for

¹⁶⁶BP (Before Present) is considered by convention to be years before AD 1950. It is generally used to refer to non-calibrated radio carbon dates.

understanding the nature of prehistoric human ecosystems (Ricklis and Collins, 1994:33). The dynamics of past environments to a large degree have dictated the locations and contexts of prehistoric sites within the project area. Fluctuations in local climate may have directly influenced the types and locations of sites in the SH130 project area. Existing settlement and site distributional data (Black 1989; Ricklis and Collins) suggest a correlation between site type, period of occupation and specific topographic areas on the Blackland Prairie. In theory, site types and locations should reflect shifts in the frequency and location of resources which are likely related to fluctuations in Holocene climate.

One model of Holocene climatic and environmental change (Ricklis and Collins, 1994) contrasts with the more or less gradual and unidirectional trend to drier conditions set forth by Bryant and Shafer (1977) and Bryant and Holloway (1985). This suggested pattern of change posits a moist and cool late Pleistocene environment with early to mid-Holocene shifts to drier conditions. These drier conditions became most pronounced during the mid-Holocene (ca. 5,000-7,000 BP). Based on pollen and geomorphological data, Ricklis and Collins (1994:35) posit a trend to increasingly mesic conditions beginning circa 4,000- 5,000 BP. Such a pattern is basically consistent with the widespread mid-Holocene Altithermal or Atlantic Climatic Interval proposed by Antevs (1955).

Geomorphological and geoarcheological evidence from Texas and the Southern High Plains provide some support for the occurrence of the mid-Holocene Altithermal, as well as suggestions of significant late Holocene climatic change (Ricklis and Collins, 1994:35). Evidence from archeological sites in the Lower Pecos area suggest intensive erosion and flooding around 4500 BP. Evidence from the lower Texas coastal zone suggests widespread erosion of the surface of the Pleistocene Beaumont Formation circa 6,000-5,000 BP. These events may have been tied to periods of relative aridity. Subsequent upland Holocene soil formation after 5,000 BP may equate to a more mesic interval (Collins, Hall, and Bousman, 1989). Information from sites in west Texas and eastern New Mexico (e.g., Lubbock Lake, Blackwater Draw) also suggest an arid period during the mid-Holocene. More specifically, stratigraphic profiles in which the mid Holocene is marked by deposition of eolian sediments are inferred to represent regionally reduced vegetation cover and dry soil conditions (Ricklis and Collins, 1994). Only after 5,000-4,000 BP does later Holocene soil development indicate a return to more mesic conditions (Holliday, 1989).

Additional suggestions of a mid-Holocene dry period, corresponding to the Middle Archaic (Ricklis and Collins, 1994), are derived from faunal data at Hall's Cave, on the Edwards Plateau. These data show significant fluctuations through time in small mammal species with high moisture

requirements. These trends may reflect time-transgressive shifts in habitat zones from which broad changes in climate and vegetation can be inferred (Blum, 1992; Toomey, et al., 1993; Ricklis and Collins, 1994:35). The shifting proportions of small mammals, particularly the ratio between the high-moisture least shrew and the desert shrew, indicate increasingly drier conditions after circa 5000 and on up to 3000/2500 BP (Ricklis and Collins, 1994). In addition to supporting other models of a mid-Holocene dry period, the Hall's Cave data also suggests that it lasted at least 1,000 years longer than posited in earlier models. The data also point to a terminal Pleistocene dry period, as also posited by Haynes (1991) for the Clovis period, and a return to more mesic conditions in the late Holocene, as also suggested by Collins and Bousman (1990) on the basis of their interpretations of east-central Texas pollen data (Ricklis and Collins, 1994:35).

Importantly, Johnson (1995) posits a slightly different model of fluctuating Holocene climatic change, and correlates it to a slightly different prehistoric chronology. Johnson (1995) suggests that the local climate of the eastern Edwards Plateau and the Blackland Prairie areas to the east and southeast were subject to alternating periods of aridity and moisture but that these extremes were not nearly so pronounced as throughout the entirety of the region. Johnson (1995) discounts the occurrence of an all encompassing mid-Holocene altithermal period on the eastern Edwards Plateau, based on his interpretation of the extant pollen, climatic and geomorphological data. Instead, the occurrence of four distinct arid intervals are suggested, of varying intensities, interspersed with more mesic intervals. These fluctuations in climate are correlated to the development and proliferation of burned rock middens in the Middle and Late Archaic periods. The use of middens was part of a pronounced drying trend related to the expansion of succulent vegetation and concomitant exploitation by people who baked the bulbs of these plants in rock ovens (Ellis, et al., 1995). Alternating arid to humid climatic intervals for the Blackland Prairie may have both direct and indirect implications for predicted prehistoric site locations within the project area.

In contrast to the climatic model suggested in Ricklis and Collins (1994), which is based on geomorphic and other data directly relevant to the SH 130 project area, Johnson (1995) posits a long mesic or humid interval during the Early Archaic period for the project area (ca. 5500-4000 B.C.). This mesic period followed an arid peak during the late Paleoindian era (ca. 6000-6500 B.C.). A long dry Edwards Interval is posited from approximately 3000-500 B.C. during which dry conditions prevailed, middens proliferated, and bison were present across the plateau (Middle and Late Archaic Intervals). Following the relatively long Edwards Interval, peoples manufacturing Ensor, Frio, Darl and Fairland projectiles were faced with a more mesic climate and a relative absence of bison (Late Archaic II). The Post-Archaic era again turned dry and somewhat arid

towards the end of the Austin Interval (Scallorn projectiles), and the beginning of the Toyah Interval, during which there was a rather dramatic increase in the bison exploitation.

In general, interpretations of paleoenvironmental data suggest widespread environmental fluctuations during the Holocene. Relatively cool, moist Pleistocene conditions were probably interrupted by a terminal Pleistocene dry period circa, 11,000 BP, with a return to mesic conditions during the earliest Holocene. By circa 7000 BP, the climate was becoming increasingly dry, with concomitant shifts in fauna and presumably an increase in xerophytic vegetation (Ricklis and Collins, 1924:36). Dry conditions persisted throughout the mid-Holocene, perhaps as late as circa 3000/2500 BP (Blum, 1992). After this time, there was a return to moister climate, followed by a re-emergence of drier conditions circa 1000 BP. Although there are differences in the basic interpretation of this sequence of climatic fluctuation for the Edwards Plateau and adjacent regions, it is relevant to illustrate that the Blackland Prairie likely witnessed various periods of alternating levels of temperature and moisture which may have had a direct effect on the hydrologic system of the project area and thus on prehistoric site locations.

A general model of fluctuating, as opposed to unidirectional, environmental change may have fundamental implications for understanding changes in prehistoric hunter-gatherer adaptive patterns in central Texas and concomitant changes in the archeological record (Ricklis and Collins, 1994). How then might such changes be manifested in the archeological record and where would sites be expected to be located, if the aforementioned paleo-environmental model is accepted as a framework for predicting site types and locations in the SH 130 project area.

Geomorphic Evidence

Geomorphic data presented through well documented archeological investigations on the Blackland Prairie are directly relevant to any possible predictions of prehistoric site locations for SH 130. Ricklis and Collins (1994) document the intensive investigations of the Barton (Site No. 41HY202) and Mustang Branch (Site No. 41HY209) sites in Hays County, Texas, southwest of the SH 130 project area. Although situated in an adjacent county, both of these sites are located in the ecotone between the escarpment and the prairie, along a tributary to Onion Creek, and represent precisely the types of sites and landforms likely to be encountered in the SH 130 project area. Site type, relative chronology and geomorphic setting of these sites should be considered as directly applicable to the SH 130 area.

Although Onion Creek and its tributaries exist south of the project area, similar order streams within the Colorado River drainage system cross the SH 130 area (Brushy, Berry, and Gilleland Creeks), and these are equally likely to be the location of prehistoric settlements on the Blackland Prairie. In short, geomorphic data from these sites indicates the presence of relatively extensive Holocene alluvial deposits along portions of Onion Creek and its tributaries, which have the potential to contain intact prehistoric archeological sites. At the Barton and Mustang Branch sites, occupations attributed to different time periods were found in different geomorphic settings and the reason for such variation in settlement patterning is convincingly tied to suggested models of climatic change at both the local and regional levels.

The study area for the Mustang Branch and Barton sites includes outcrops of thin-bedded limestones, shales, chalks and marls of the Eagle Ford Group, Buda Limestone, Del Rio Clay and Georgetown Formation and Austin Chalk, as well as gravelly and clayey Quaternary stream alluvium (Barnes, 1974; Ricklis and Collins, 1994:359). In this ecotonal area, the channel of eastwardly flowing Onion Creek breaks out of the hard confining limestones of the Edward Formation into the soft upper Cretaceous rocks, which in past times allowed Onion Creek greater lateral mobility. As a result, the creek formed a large, incised meander loop which was subsequently cut off, sometime during the mid-late Holocene, when the stream breached the neck of the meander. Also present is the channel of Mustang Branch, an ephemeral stream that flows northeast in a fault-controlled valley until it intersects and follows the cutoff meander channel to its confluence with modern Onion Creek (Ricklis and Collins 1994:360). The area is marked by a complex assemblage of alluvial units, several of which are Holocene in origin, which lie adjacent to both Mustang Branch and Onion Creek.

The Barton site (41HY202) is located on a gravelly alluvial terrace that rises 8.2-9.8 feet (2.5-3.0 meters) above the adjacent Mustang Branch floodplain (Ricklis and Collins, 1994). Three of the five identified terraces are Holocene in age. The Early Archaic component of the Barton site exists in the Unit 2 fill, which is a thin veneer of clayey overbank alluvium deposited no earlier than the early to middle Holocene. This Unit 2 fill exhibits extensive soil development and overlies the remnant of heavily eroded, truncated Pleistocene sediments. Overall, graphical depiction of the horizontal extent of Holocene age alluvial deposits along portions of Mustang Branch and Onion Creek indicate as much as 100 meters (328 feet) aerial extent of sediments (in some sections) that have the potential to contain intact prehistoric archeological remains.

The occupation of the Barton site appears to have occurred on a gravelly flat several tens of feet above the previous location of Onion Creek, which is now an abandoned meander loop or

paleochannel of the original stream. Following the breaching of the meander neck by headward erosion of the main thalweg of Onion Creek, this site would have been cut off from its main source of flowing water (mid-late Holocene) and thus resources. Following the occupation, the cultural remains were gradually and slowly buried by successive, thin deposits of overbank alluvium. Alluvial events declined in frequency as the meander was abandoned and the stream again began to downcut. Later alluvial deposits appear to have been confined to the actual channel of the abandoned meander loop, and to the adjacent channels of Mustang Branch and modern Onion Creek. Thus, Early Archaic sites may be found in Holocene alluvial deposits located adjacent to paleochannels or the abandoned meander loops of major tributaries and streams in the Colorado drainage system on the Blackland Prairie (see below), especially at stream confluences. Later Archaic sites were also recorded at the Barton site, on the lip of the terrace. These were apparently buried by sheetwash sediments resulting from unconfined overland flow, probably associated with brief, intense storms (Ricklis and Collins 1994:372).

The Mustang Branch site (Terrace, 41HY209-T) is situated immediately to the south of the Barton site and includes cultural materials contained within the terrace sediments associated with Mustang Branch. This terrace site is located in Holocene alluvial deposits that consist of a stacked series of cumulic A and AB horizons formed by vertical accretion of organic rich sediment on the floodplain (Ricklis and Collins, 1994:375). Austin and Toyah interval occupation surfaces are present in horizontal lenses within this unit of the terrace sediments. During the late Holocene, there was gradual episodic aggradation of organic-rich clayey alluvium in the abandoned Onion Creek slough and on the Mustang Branch floodplain. Intermittent sediment deposition at the Mustang Branch site appears to have resulted in the burial of stratified Late Archaic and Late Prehistoric activity surfaces (Ricklis and Collins, 1994:377). Another archeological component of the Mustang Branch site (41HY209-M, Bluff) is a burned rock midden located on the rim of the adjacent limestone upland.

Synthesis

Archeological evidence from central Texas suggests that Early Archaic and late Paleoindian encampments were relatively low density in terms of numbers of artifacts and occupational duration. For comparative purposes, excavations at the Camp Pearl Wheat site (Collins, et al., 1990) and the Sleeper site (Johnson, 1991) revealed a scatter of Early Archaic lithic artifacts and discrete burned limestone features. The Early Archaic period was probably categorized by a generalized hunting-gathering subsistence strategy involving relatively high group mobility and short-term occupations (Ricklis and Collins, 1994:323). Importantly, regional population density may have been low. Early

Archaic and late Paleoindian sites in the project area were likely situated on stable or slowly aggrading Pleistocene or early Holocene surfaces which may have allowed for the mixing of materials and juxtaposition of features from multiple occupations over a lengthy time period.

These surfaces in the project area were then buried under extensive later Holocene alluvial deposits, which either remain buried, or else are shallowly buried or surficially exposed in heavily eroded or truncated early Holocene sediments. Such erosion may be the result of mid-late Holocene short-term or perhaps long term climatic events. Early Archaic and late Paleoindian sites may also be surficially exposed on eroded Pleistocene surfaces, but are probably not common in the SH 130 project area. Early Archaic sites might be located in Holocene alluvial deposits located adjacent to abandoned paleochannels or the tributaries to the major streams, especially at their confluences. Given the dynamic nature of rivers and streams during the Pleistocene and early Holocene, most late Paleoindian campsites have probably been destroyed by abrading floodwaters, except for when situated in rare geomorphic situations near springs or marshes. According to the Johnson (1995) climatic model, most of the Early Archaic on the eastern Edwards Plateau and adjacent areas would not have been a significantly dry period, and Early Archaic peoples would have had wide latitude in selecting encampments along the banks of well-watered perennially flowing streams.

As the overall regional biomass declined during succeeding drier periods, such as the suggested long Altithermal or Dry Edwards Interval, the environment would have been characterized by a mosaic of contrasting areas of greater and lesser productivity (e.g., the moist floodplains of larger streams vs. now increasingly xeric uplands and the valleys of only intermittently flowing, smaller streams) (Ricklis and Collins, 1994:324). The spatially heterogeneous conditions of resource availability would have fostered exploitation of ecotones containing either significant quantities of game or extensive stands of exploitable plant biomass. Occupation probably tended, therefore, to be concentrated in ecotones along major streams or springs, where game would have still been relatively plentiful, where deep-rooted oaks and pecan trees provided abundances of nuts, and from which xerophytic plants of nearby uplands could be procured (Ricklis and Collins, 1994). With reduced mobility, camps would have been larger and contain dense concentrations of artifacts (base camps).

Thus, the late Middle and Late Archaic I periods on the eastern Edwards Plateau (Johnson, 1995) witnessed the expansion and proliferation of subsistence related to the formation of burned rock middens. The wide ranging, highly mobile settlement and subsistence strategy of the Early Archaic, approximating a foraging strategy, would have given way to a logistical collector strategy in which key resources were brought back to base camps situated within relatively high productivity

areas (Ricklis and Collins, 1994). The late Middle Archaic and Late Archaic I periods (to use Johnson's chronology, 1995), would have been characterized by reduced mobility, and occupation would have involved more restricted intensive exploitation of key, spatially restricted resource zones. Settlements would have been larger and more nucleated within these productive zones. On the neighboring plateau, prehistoric economies at this time would have been more oriented towards the specialized processing that required the use and discard of large quantities of burned limestone fragments (Ricklis and Collins 1994). On the Prairie, there is very little evidence of burned rock midden utilization, and nucleated settlements may have been oriented more to the exploitation of the extensive faunal and edible plant resources of the more significant riparian zones.

Thus, late Middle Archaic and Late Archaic I prehistoric sites within the project area might be expected to be located in proximity to the higher order stream/rivers. If settlement was more spatially restricted sites of this age might be expected located in close proximity to the more permanent riverine environments such as the Colorado or San Gabriel Rivers and major creeks (Brushy, Gilleland), but not the smaller tributaries. This pattern is borne out by known prehistoric settlement distributions within the project area. Site distribution maps (TARL) indicate a high concentration of sites along the major waterways in the project area.

The shift to more mesic conditions after circa 1500 BP, would have lessened the constraints experienced during the Middle and Late Archaic I periods and allowed for a return to a more mobile subsistence strategy. Once again, smaller stream valleys and uplands, now under high moisture regimes, would have had higher primary productivity, thus supporting a richer food chain (Ricklis and Collins, 1994:324). On the Plateau, burned rock middens were not as common during the succeeding Late Archaic II Interval. Within the project area, less intensive, more widely distributed prehistoric occupations, without a decrease in population, would be expected at any given location. Broader areas could once again be effectively exploited in a relatively dispersed land use strategy without the subsistence risk that would have prevailed during the drier Middle and Late Archaic I periods. An apparent increase of Late Archaic II site components might in fact reflect a more dispersed settlement pattern, rather than an absolute increase in regional population density (Ricklis and Collins, 1994:325).

Late Prehistoric sites, based on information from the Middle Onion Creek study, reinforce the notion of a highly mobile subsistence pattern, with an increase in the hunting of large mammals roughly around the time of the Toyah complex (A.D. 1300). At this time, the area experienced an influx of bison related to an increase in aridity driving herds south. Such an influx may have served as a catalyst in the shift to a hunting oriented economy (Ricklis and Collins, 1994). Increased

numbers of late Prehistoric kill/butchering locales would be expected probably near well watered areas which would attract game. Some kill/butchering sites may be buried depending on proximity to channel floodplains. Hunting camps might also occur in upland settings which would have provided advantageous lookouts. These types of sites are often surficial lithic scatters due to both their limited use and location on erosional surfaces. Campsites or occupations sites are expected near or in riparian environments throughout the study area and may be shallowly buried depending on proximity to floodplains.

Nearly all of the drainages within the project area represent at least moderate probability for the presence of intact prehistoric materials. Additional high probability areas include adjacent uplands where lithic materials could have been procured and manipulated for purposes of stone tool production. High ridges in advantageous “lookout” spots or adjacent to drainages would also have been favorable locations for temporary occupations or perhaps semi-permanent occupations, ones focused on the exploitation of a particular resource or perhaps a limited set of resources. Seasonally occupied residential base camps (Binford, 1980), where a diverse array of subsistence activities occurred, were likely located in favored locations adjacent to the major drainages in this portion of the Blackland Prairie area. Shifting climatic conditions may have rendered certain localities within the project area more or less favorable throughout the Holocene epoch.

Stream terraces located adjacent to the larger drainages in the project area would have been favorable locales for prehistoric occupation from the Early Archaic period (ca. 6500-3500 B.C.) all the way through the Austin and Toyah times (A.D. 700-1400). Thus, intact Holocene deposits located where suggested alternative segments intersect Brushy (Alternatives 1,3,4,8 and 2,5,6,7) should be considered as high probability areas for the presence of previously unrecorded, significant prehistoric sites. Similarly, areas where suggested alternative segments intersect terraces of the San Gabriel River (Alternatives 1-8) should also be considered as very high probability for intact prehistoric cultural materials. Additional potential project creek crossings that should be carefully examined, if affected by the preferred alternative, include Wilbarger (Alternatives 1-8) and Gilleland Creeks (Alternatives 1, 3, 6, and 7). Areas of particularly high potential for intact, buried prehistoric sites include the confluences and that of Gilleland Creek and Harris Branch (Alternatives 2, 4, 5, and 8), located approximately one mile north of US 290.

Additional stream terraces located adjacent to the larger drainages in the project area would have been favorable locales for prehistoric occupation from the Early Archaic period (ca. 3500 BC) all the way through the Austin and Toyah times (AD 700-1400). Thus, intact Holocene deposits

located where suggested alternatives intersect at Onion Creek (Alternatives 1-8) should be considered as a high probability areas for the presence of previously unrecorded, significant prehistoric sites. Similarly, areas where suggested alternatives intersect terraces of the Colorado River (Alternatives 1-8) should also be considered as very high probability for intact prehistoric cultural materials. One additional potential project creek crossing that should be carefully examined, if affected by the preferred alternative, is that of Gilleland Creek (Alternatives 2, 4, 5, 8).

Areas of particularly high potential (hot spots) for intact, buried prehistoric sites include the conjunction point of all of the northern alternatives with Colorado River, to the south of Hornsby Bend. Also important is the intersection of project alternatives with Onion Creek, just north of the central portion of Alternatives 1-8, and south of SH 71. The areas adjacent to the Colorado River are known to contain potentially important buried sites, and similarly, wherever the terraces of Onion Creek have been surveyed, numerous potentially important sites have been recorded.

Terraces associated with a number of smaller drainages in the project area may represent moderate probability for Late Archaic II (Ensor, Frio, Fairland occupations, ca. 500 B.C.-700 A.D.; Johnson, 1995) and later intact Austin (the beginnings of another gradual drying period) and Toyah assemblages (ca. 700-1400 A.D.).

Project creek crossings at Pecan Branch (Alternatives 1-8) and McNutt Creeks (Alternatives 1, 3, 4, and 8) should be considered of moderate probability for these types of prehistoric resources. Similarly, potential project creek crossings of Dry Branch (Alternatives 1, 3, 4, and 8), Dyer Creek (Alternatives 1, 3, 4, and 8), Mankins Branch (Alternatives 2, 5, 6, and 7) and Cottonwood Creeks (Alternatives 2, 5, 6, and 7) should also be considered as having the potential for shallowly buried Late Archaic II settlements, and especially Austin and Toyah encampments. Other project creek crossings at Decker (Alternatives 2, 4, 5, and 8, mainly upland sites) and Elm Creeks (Alternatives 1-8) should be considered of moderate probability for these types of prehistoric resources.

Also, potential project creek crossings of the upper headwaters of Dry Creek (Alternatives 1-8) should also be considered as having the potential for shallowly buried Late Archaic II settlements, and especially Austin and Toyah encampments. Additional tributaries or smaller drainages having the potential for shallowly buried, intact prehistoric remains include Chandler Branch (Alternatives 1, 3, 4, and 8) and Harris Branch (Alternatives 1, 3, 6, and 7), and the upper headwaters of Wilbarger (Alternatives 2, 5, 6, and 7) and Walnut Creeks (Alternatives 1, 3, 6, and 7).

As mentioned, Early Archaic and/or Paleoindian sites (prior to 3500 B.C.) may be present adjacent to abandoned paleochannels or meander loops/cutoffs of the major streams, either buried in alluvium, or exposed through erosion. While difficult to locate without “ground truthing” (i.e., backhoe trenching), examination of the U.S.G.S. 7.5' topographic maps indicates several areas where these type of sites might be found. Selection of these areas from the maps is based primarily on a delineation of broad floodplains that have in the past clearly been the location of significant meandering on the part of the larger streams and/or rivers, and that also intersect suggested project alternative segments. While the abandoned channels or meander loops (Ricklis and Collins, 1994) can be buried and not readily apparent, due to the dynamics of the streams and geologic setting of the Blackland Prairie, they are likely present adjacent to the older terraces (early Holocene or Pleistocene) within broader floodplain settings. Thus, some of the older terraces or terrace remnants located adjacent to abandoned paleochannels within the project area are at least of moderate potential for the presence of buried prehistoric sites.

Locations where suggested project alternative segments intersect broad floodplains and thus may have the potential to affect Early Archaic sites located on abandoned meander loops or paleochannels include the sections of proposed roadway (Alternatives 1, 3, 6, and 7) located east of Walnut Creek at its juncture with US 290, and two relatively large areas located adjacent to Wilbarger (Alternatives 1-8), approximately 1.5 miles east of the town of Pflugerville. Additional areas deemed to exhibit such potential include portions of Harris Branch (Alternatives 1, 3, 6, and 7) located approximately two miles east of IH 35, north of Yager Lane, and several areas of Brushy (Alternatives 2, 5, 6, and 7), including their confluence, located roughly adjacent to the Missouri-Pacific Railroad line and west of the community of Hutto. Other areas in the vicinity of Brushy Creek may also exhibit this potential (Alternatives 1, 3, 4, and 8) which are located just east of the City of Round Rock. Finally, two additional areas with the potential to contain intact Early Archaic cultural materials are the older terraces within the floodplains of the San Gabriel River (Alternatives 1-8), southeast of FM 971.

Additional locations where suggested project alternatives intersect broad floodplains and thus may have the potential to affect Early Archaic sites located on abandoned meander loops or paleochannels include the immediate floodplain of the Colorado River (Alternatives 1-8), roughly located within the central portion of the project area. High probability areas for the presence of these types of sites may also include project crossings of Walnut Creek, in the northern portion of the SH 130 project area, and Gilleland Creek (Alternatives 1,3,6,7 and 2, 4, 5, and 8), in the northeastern portion of the project area. Similarly, project crossings of Onion Creek (Alternatives 1-8) should

be considered as high probability for these types of buried prehistoric sites. Much lower probability areas for Early Archaic or perhaps later Late Archaic II and Post-Archaic sites include potential project crossings of Dry (Alternatives 1-8) and Decker Creeks (Alternatives 2, 4, 5, and 8, mainly upland sites).

Areas in the extreme southern portion of the project area, which in some cases border on Post-Oak savannah, and not the Blackland Prairie, were considered separately for areas of high probability for important archeological sites. Within this southern area, creek crossings, stream terraces and other favorable landforms within close proximity to reliable sources of water were measured for linear distances in feet of high probability zones for prehistoric sites. Approximately 7.7 linear miles along the western alternative (1, 4, 5, 6) are identified as having a high probability for containing prehistoric cultural resource sites. Among these areas are Geronimo (3,960 feet), Clear Fork Plum (2,800 feet), Big West Fork Plum (630 feet), Plum (7,950 feet), Boggy (5,90 feet), Cottonwood (1,950 feet), York (13,990 feet), Dickerson (3,020 feet), Crooked Branch (1,585 feet) and Little Fork Plum Creeks (575 feet). The San Marcos River was measured to contain 3,545 linear feet of high probability are for prehistoric sites within the project area.

The eastern alternative (2, 3, 7, 8) exhibits 5.6 linear miles of high probability areas for prehistoric sites. These areas include Mill (2,900 feet), Little Fork Plum (4,385 feet), West Fork Plum (1,525 feet), Geronimo (935 feet), Clear Fork Plum (3,435 feet), Town Branch (595 feet), Plum (4,530 feet) York (2,410 feet), Dickerson (4,610 feet) and Callihan Creeks (2,230 feet). The San Marcos River along the eastern alternative includes approximately 2230 feet of high probability area for prehistoric sites.

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APPENDIX E
NOISE ANALYSIS

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APPENDIX F
PROTOCOL FOR HISTORIC PROPERTY IDENTIFICATION,
EVALUATION, AND TREATMENT FOR THE SH 130 PROJECT