Feasibility Study Summary Report

RM 2243

From 183A to I-35

Williamson County, Texas

CSJ: 2103-01-032

June 2019

Texas Department of Transportation, Austin District

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

Executive Summary

The Texas Department of Transportation (TxDOT) initiated a corridor feasibility study in January 2015 for Ranch-to-Market (RM) 2243 extending from western portion of Georgetown to eastern portion of Leander, in Williamson County. The purpose of the study was to determine future roadway improvements that would efficiently serve the community's transportation needs and recommend options to improve mobility and connectivity between 183A and I-35. A recommended preliminary ultimate schematic was developed for the ultimate corridor and presented to the public at the November 2018 RM 2243 public meeting in Georgetown, Texas. As of April 2019, no construction funds have been identified for building the ultimate facility. This feasibility report provides a basis for determining the potential ultimate right-of-way (ROW) requirements for the RM 2243 ultimate corridor and serves as the preliminary step in the planning process to determine potential ultimate roadway improvements. Implementation of the ultimate project would be subject to future detailed engineering, environmental studies, public involvement and environmental approvals before right-of-way purchase or construction could begin.

The study area for RM 2243 extends from 183A (western boundary) near the city of Leander to I-35 (eastern boundary) for a length of approximately 9 miles. Several existing roadways are located within the study area including Inner Loop/Southwest Bypass, Ronald Reagan Boulevard, and Hero Way.

The study evaluated several potential improvements, including improving the existing RM 2243 roadway between these limits as well as a new location alternative. In order to develop an ultimate schematic for the study, study goals and objectives were developed. Because the study examined future traffic projections for the corridor, long-range transportation plans from Williamson County and the cities of Leander and Georgetown were consulted and incorporated, when possible. Traffic data including existing and future traffic projections, accident data, engineering information, current land use, environmental constraints, ROW requirements, and public input were also examined during the study.

Study goals and objectives include the following:

- Determine the appropriate facility type and ultimate ROW needs with input from stakeholders
- Provide the required capacity and connectivity for a high-speed roadway with improved connectivity
- Avoid and/or minimize flooding issues: A portion of existing RM 2243 is located within the Brushy Creek 100-year floodplain

- Make sure the design is consistent with long term planning documents for Williamson County, and the cities of Georgetown and Leander
- Avoid and/or minimize impacts to parcels and residential properties
- Utilize existing city, county. or state (ROW) where possible
- Design RM 2243 improvements to meet current design standards

TxDOT developed the preliminary ultimate schematic to address the long-term needs of the corridor by consulting stakeholders from Williamson County, and the cities of Leander and Georgetown. Several stakeholder meetings were held over a two-year period to develop the preliminary ultimate schematic while staying consistent with the long-term planning documents for Williamson County, and the cities of Georgetown and Leander. The preliminary ultimate schematic developed for the project includes two sections: an urban and expressway section. The urban section extends from Southwest Bypass to I-35 and calls for a 4-lane urban roadway with east-west travel lanes separated by a median. The expressway section extends from 183A to Southwest Bypass and consists of a controlled access freeway with two eastbound and two westbound travel lanes flanked by three lane frontage roads in each direction. Direct connectors would be provided at 183A and Southwest Bypass and continuous bike/pedestrian shared use paths would be included throughout the project. One open house public meeting was held for the RM 2243 corridor feasibility study. The majority of comments received concerned potential impacts to homeowners, concerns regarding traffic noise, preference or dislikes for particular aspects of the preliminary ultimate schematic presented, and short-term safety issues along RM 2243.

Based on the study findings, the preliminary ultimate schematic would fulfil the goals and objectives of the study. The preliminary ultimate schematic would efficiently serve the community's transportation needs and improve mobility and connectivity between 183A and I-35. The preliminary ultimate schematic would also accommodate future projected traffic volumes and improve regional connectivity for the corridor. If the project advances, it is possible that it would be built in phases, as the traffic demands of the corridor increase overtime. Phased construction could initially include frontage road construction, followed by the main lanes, and lastly direct connectors.

This is a planning level study and no construction funds have been identified for the complete ultimate facility. Should the study be advanced into the National Environmental Policy Act (NEPA) phase of project development, additional environmental studies, alternatives evaluation, schematic development, and public involvement would be undertaken. Should it be determined during the NEPA process that the best option is one that provides for a new location alternative, the existing RM 2243 facility would be left in place and maintained to provide access to adjacent property owners. Comments from the public meeting, and the data collected from this study will be included in any future projects.

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Glossary

100-year Floodplain: The 100-year floodplain is the land that is predicted to flood during a 100-year storm, which has a 1 percent chance of occurring in any given year. The 100-year floodplain is used by FEMA to administer the federal flood insurance program and local governments to regulate development.

Average Daily Traffic (ADT): Average daily traffic volume represents the total two-way traffic on a roadway for some period less than a year, divided by the total number of days it represents, and includes both weekday and weekend traffic. Usually, ADT is adjusted for day of the week, seasonal variations, and/or vehicle classification.

Environmental Constraint: An environmental factor or consideration (such as natural or human resources) that would impose limitations on project planning or design.

Extraterritorial Jurisdiction (ETJ): The legal ability of a government to exercise authority beyond its normal boundaries.

Horizontal Curve: The piece connecting straight (tangent) sections that changes (turns) the directions the road will follow. Curves can vary by degrees between gentle and sharp in measurement. The choice of curve sharpness impacts other design elements such as the amount of banking (superelevation) required in the curve to provide vehicles the ability to safely and comfortably navigate. The design of a safe roadway curvature is associated with highway design speed.

Typical Roadway Configuration Diagrams: Also referred to as typical section(s), these diagrams show usual roadway (or bridge) cross-sectional features including lane and shoulder widths, limits of surfacing, typical right-of-way limits, median width and slopes, and curb location and geometry.

1.0 Introduction

The Texas Department of Transportation (TxDOT) initiated the Ranch-to-Market (RM) 2243 feasibility study in January 2015 extending from 183A to I-35 located in Williamson County, Texas. Williamson County is one of the fastest growing counties in the nation with the population expected to grow by 80% by the year 2040 (Texas Water Development Board). The purpose of the study was to determine future roadway improvements that would efficiently serve the community's long-term transportation needs and recommend options to improve mobility and connectivity between 183A and I-35. Representatives from the cities of Leander and Georgetown and Williamson County were included as stakeholders during the study.

According to TxDOT's *Transportation Planning Manual, "TxDOT performs feasibility studies to determine critical elements of engineering and the economic feasibility of a proposed facility/corridor. Typically, these studies focus on improvements to particular transportation facilities or corridors, including construction of a new highway route instead of adding capacity to an existing facility or adding a high-occupancy vehicle facility or express lanes to an existing roadway rather than adding main lanes. Such studies establish design concepts, general right-of-way requirements, and [general] project impacts."*

Feasibility studies are typically conducted as the first step in determining possible improvements to a proposed corridor. The TxDOT's Project Development Process can be described in five phases.

- Phase 1: General Planning (addressed in this feasibility study)
- Phase 2: Plan Implementation (planning and programming)
- Phase 3: Detailed engineering and environmental studies
- Phase 4: Construction plans, right of way and utility coordination (detailed plans and ROW acquisition)
- Phase 5: Project Letting and Construction (building the project)

The RM 2243 feasibility study addresses phase 1 of the TxDOT Project Development Process. This report provides a recommendation for the advancement of a route to be studied for future RM 2243 improvements. This planning level study does not include the development of a final schematic or construction plans. As of June 2019, no construction funds have been programmed for a phased project or a complete ultimate build.

This feasibility report provides a basis for determining the potential ultimate ROW requirements for the RM 2243 ultimate corridor. Implementation of the ultimate project would be subject to future detailed engineering, environmental studies, public involvement and environmental approvals before construction could begin.

1.1 *Study Area*

The study area developed for RM 2243 is located between SH 29 and SH 45 and extends from 183A to I-35. The study area was developed by evaluating a number of different factors, including existing land use, roadway connectivity, and the *Williamson County Long Range Plan*. *The Williamson County Long Range Plan* is a planning document that identifies road and transit improvements that should be built in the next 25 years. RM 2243 has been identified as a potential future controlled access roadway in this plan.

The study area reflects the boundaries where improvements to RM 2243 could be made to address the goals and objectives of the study area. A map of the study area is provided in **Figure 1.**

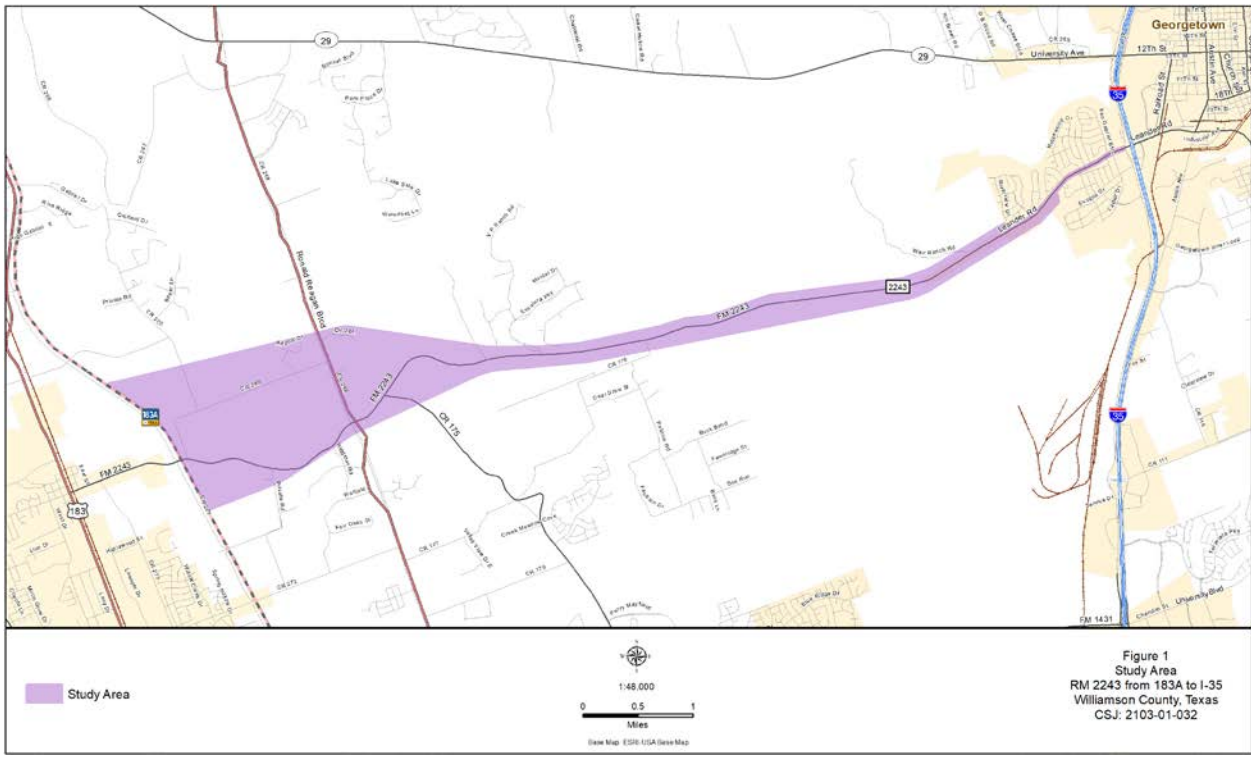


Figure 1. RM 2243 Feasibility Study Area

The study area developed for the feasibility study was based on land use, planning documents, and potential ROW to accommodate an ultimate roadway facility. The eastern and western portions of the study area differ in land use. The eastern portion includes urban development adjacent to the roadway as opposed to the western portion, which is much more undeveloped with scattered residential neighborhoods. Furthermore, the *Williamson County Long-Range Plan* (2017) shows RM 2243 partially on new location to connect to Hero Way. Therefore, TxDOT explored the possibility of a connection to Hero Way and other roadways in the area. Based on the *Williamson County Long Range Transportation Plan*, the western end

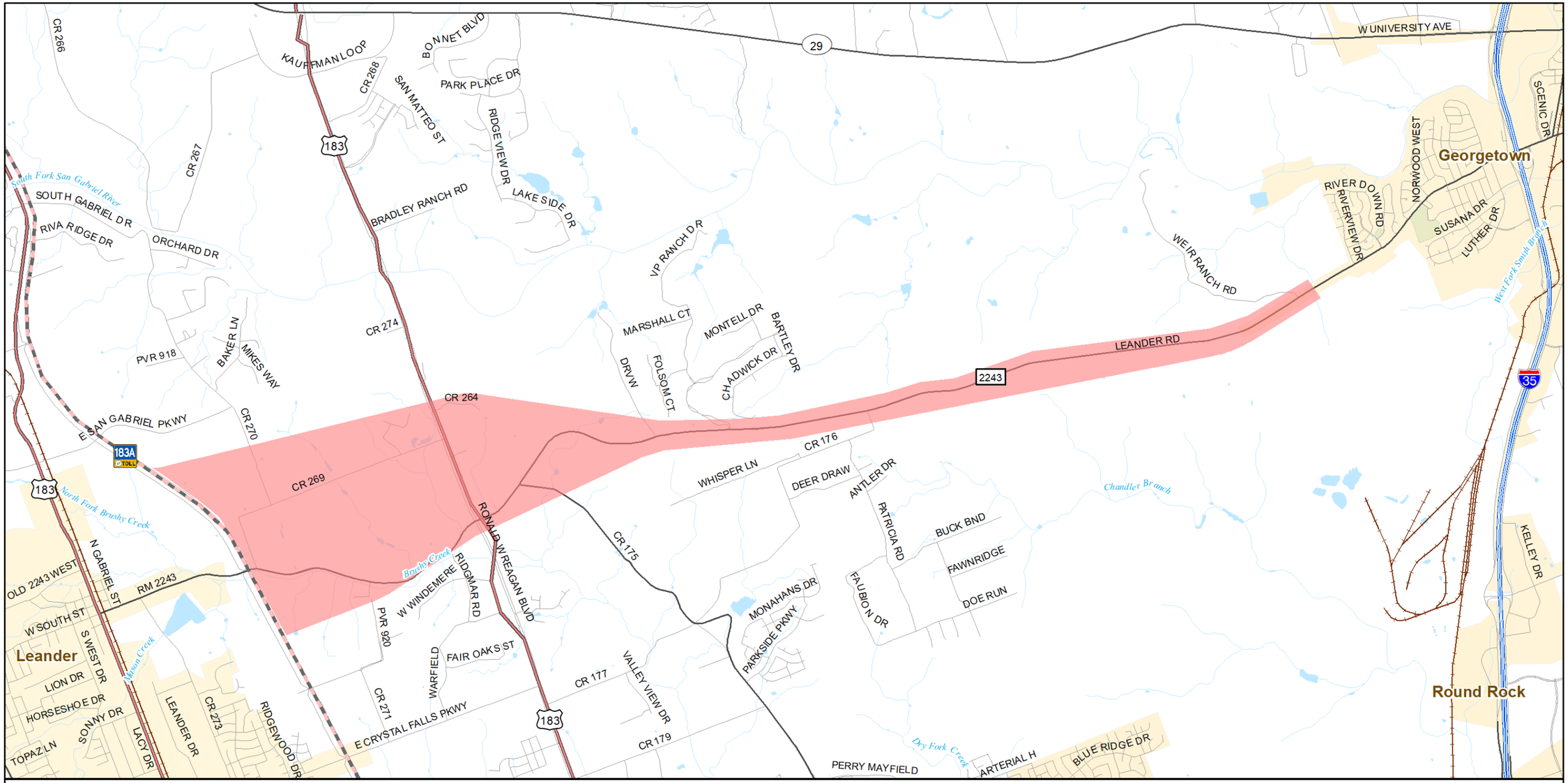
study area was expanded to explore these options. Because of these differences, the study area was further subdivided into an urban section and an expressway section. The limits of the expressway section are from Southwest Bypass to 183A (**Figure 2**), while the urban section extends from I-35 to Southwest Bypass (**Figure 3**).

Approximately 45% of the study area (463 acres) consists of shrubland, which is almost exclusively located within the expressway section of the study area. Approximately 10.7% (109.6 acres) is classified for transportation use. Approximately 11% (113 acres) of the study area is designated as grassland, and 6.9% (70.5 acres) of the land is classified as woodlands.

There are two parks within the study area, Garey Park and Lyndoch Park, which both make up 33.6 acres or 3.2% of the land use. Approximately 16 acres (1.5%) of the study area is classified as commercial, and is primarily located within the urban section, although four commercial properties exist near Hero Way and 183A. Additionally, approximately 175 acres, or 17% of the study area is classified as residential. In the urban section, many residential neighborhoods exist, such as Thousand Oaks, San Gabriel Condos, and River Ridge. The expressway section of the study area exhibits clusters of residential neighborhoods, such as Escalera Ranch, High Meadow Estates, and The Preserve. The Texas Crushed Stone Quarry is a limestone quarry located within the study area and makes up 29 acres, or 2.8% of the land use. A list of land use land cover within the study area can been seen in **Appendix A.**

2.0 Goals & Objectives

The study is needed to address population increase, traffic growth, safety, and maintenance issues associated with the existing RM 2243 roadway. Study goals and objectives were established to help aid in the development of the preliminary ultimate schematic and to ensure that all the study's priorities were met. The study evaluated several potential improvements, including improving the existing RM 2243 roadway limits as well as new location alternatives. In order to develop an accurate depiction of future RM 2243 needs, traffic data including existing and future traffic projections, accident data, engineering information, current land use, environmental constraints, ROW requirements, and public input were examined during the study.



Expressway Study Area

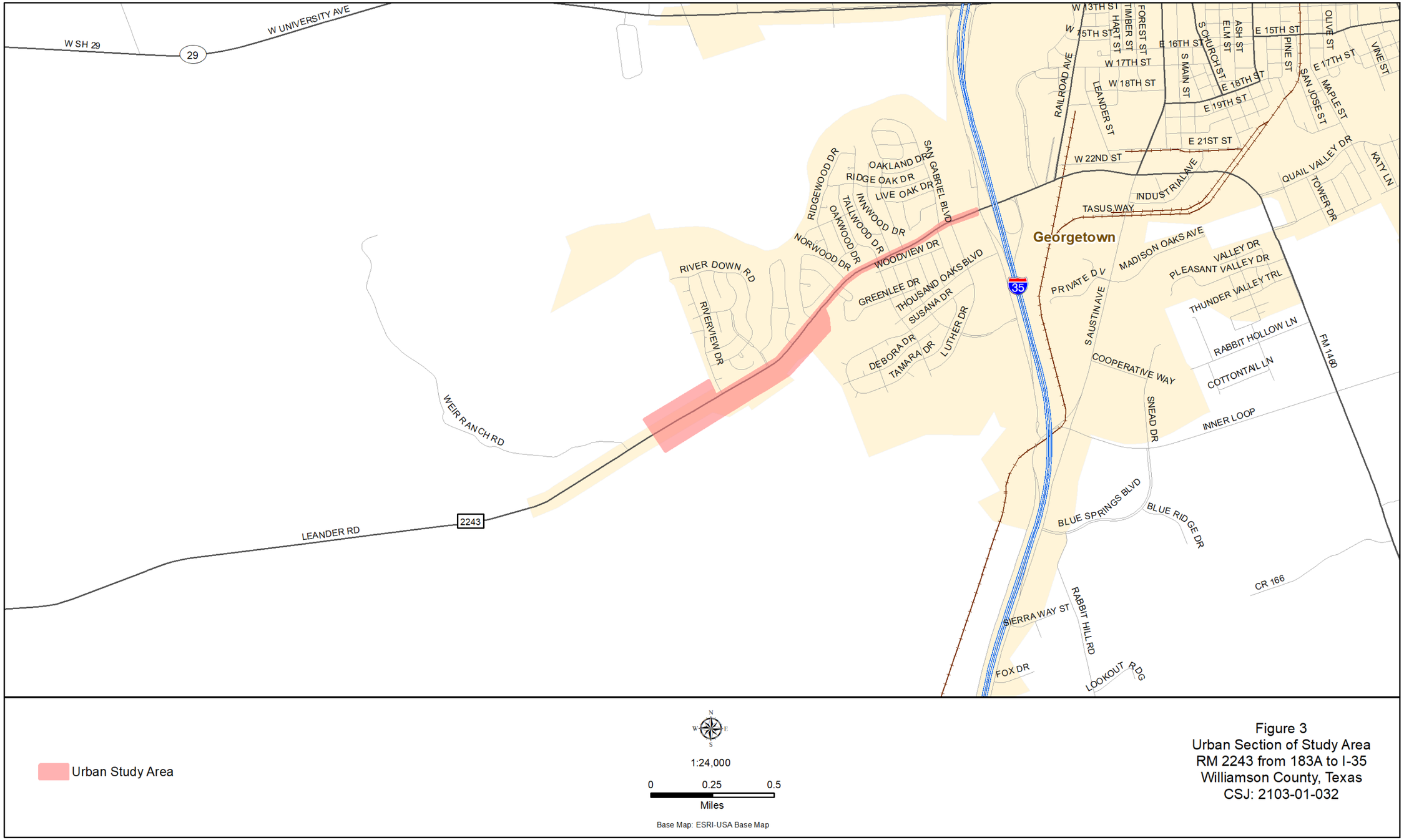
1:45,000

0 0.5 1
Miles

Base Map: ESRI-USA Base Map

Figure 2
Expressway Section of Study Area
RM 2243 from 183A to I-35
Williamson County, Texas
CSJ: 2103-01-032

Figure 2. Expressway Section of the Feasibility Study Area



Urban Study Area

1:24,000

0 0.25 0.5

Miles

Base Map: ESRI-USA Base Map

Figure 3
Urban Section of Study Area
RM 2243 from 183A to I-35
Williamson County, Texas
CSJ: 2103-01-032

Figure 3. Urban Section of the Feasibility Study Area

The primary objectives of the study were to determine the appropriate facility type and ultimate ROW needed for RM 2243 to accommodate future projected traffic volumes. Future improvements to RM 2243 should provide enough capacity to accommodate future projected traffic. Additional goals and objectives included the following:

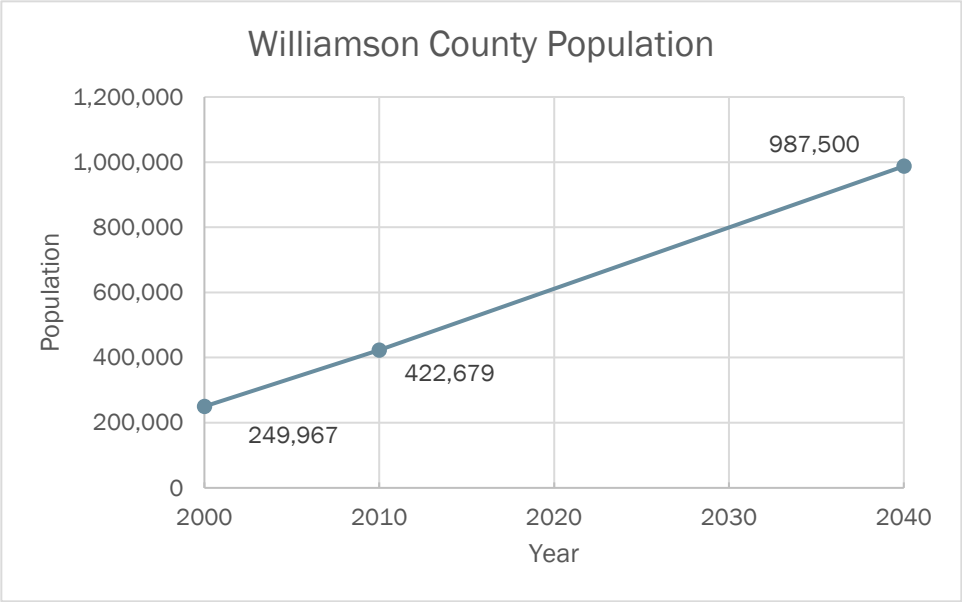
- Determine future needs in conjunction with stakeholders
- Plan for future mobility needs and connectivity
- Avoid and/or minimize flooding issues – Brushy Creek. A portion of the western portion of RM 2243 is located in the floodplain
- Ensure the design is consistent with long term planning documents for Williamson County, and the cities of Georgetown and Leander
- Gathering and evaluating public and stakeholder input during the study to identify corridor needs
- Avoid and/or minimize impacts to parcels and residential properties
- Utilize existing county or state ROW where possible
- Bring the RM 2243 corridor to meet current design standards

2.1 *Population and Economic Growth Projections*

According to the U.S. Census Bureau, Williamson County is one of the fastest growing counties in the U.S. The population of Williamson County was approximately 249,967 in the year 2000. In 2010, the population was 422,679, a growth rate of 69 percent. In 2010, the population of Williamson County was approximately 422,679 and by 2017, the population was estimated at 547,545, a growth rate of approximately 29.6 percent.

In 2000, the population of the Georgetown was estimated at 28,339, and by 2010, the population had reached 47,400, a growth rate of 67 percent. In 2010, the population of the City of Georgetown was estimated at 47,400 and by 2017, the population had reached 70,685, a growth rate of approximately 48.9 percent. The population in the City of Leander was approximately 26,697 in the year 2010 and in 2017 the population was estimated at 49,234, a growth rate of approximately 84.4 percent.

According to Texas Water Development Board the population of Williamson County is projected to be approximately 987,495 by the year 2040 (**Figure 4**), the City of Georgetown is expected to reach approximately 114,220 by 2040 and the City of Leander is expected to reach approximately 158,728 by 2040 . With increased population comes increased traffic.



Source: U.S. Census Bureau, 2010; Texas Water Development Board, 2012.

Figure 4. Population Growth in Williamson County

According to the Rural Capital Headlight newsletter (http://ruralcapitalheadlight.com/profile-williamson-county) employment growth for all industries in Williamson County increased approximately 23 percent between the years 2011 and 2016, while the employment growth for all industries in the United States only increased approximately 10 percent for the same years.

2.2 *Traffic Studies*

To understand existing and future traffic demands, TxDOT's Transportation Planning and Programming Division conducted a study on existing traffic conditions and on future traffic projections for the RM 2243 corridor. Because of the traffic needs of the current corridor will likely be different than future needs of the corridor, the traffic studies focused more on the potential future traffic demands of the corridor.

Improvements to the roadway are needed to accommodate increased traffic volumes resulting from the past and future projected population growth in the cities of Georgetown and Leander as well as Williamson County. The existing road does not meet current design standards for the volume of traffic it carries and the projected traffic volume it would carry in the future.

Traffic is expected to continue to increase in the future. According to the TxDOT District Traffic Maps, the Annual Average Daily Traffic Counts (AADT) on RM 2243 for the year of 2013 was estimated at 10,237 vehicles per day (VPD). In 2016 the AADT was estimated at 14,383 VPD (**Table 1**). A traffic growth rate of approximately 40.5 percent in 3 years. Traffic is expected to

continue to increase in the future. According to a traffic projections study prepared by Brown and Gay, Inc. for TxDOT (May 2016) traffic by 2040 is expected to reach 44,600 on RM 2243 just west of I-35 (**Table 2**). A growth rate of approximately 210 percent.

Table 1: RM 2243 ADT 2013 through 2016

	2013	2014	2015	2016
RM 2243 just west of I-35	10,237	9,412	11,688	14,383
RM 2243 1 mile west of I-35	9,190	8,526	10,549	12,362
RM 2243 west of CR 176	5,690	5,833	6,570	8,880

Source: TxDOT, 2013, 2014, 2015, and 2016

Table 2: RM 2243 Projected ADT

	2020	2040
RM 2243 just west of I-35	14,990	44,600
RM 2243 1 mile west of I-35	13,450	40,000
RM 2243 west of CR 176	8,330	24,800

Source: Brown & Gay Engineers, Inc. May 2016

2.3 *Existing Roadway Safety*

According to data from the TxDOT maintained Crash Records Information System (CRIS), between 2011 and 2018, there have been a total of 11 crashes reported within the project limits. As can be seen in **Table 3** one fatality and five crashes that included possible injuries occurred between 2011 and 2018.

Table 3: Crash by Severity

Year	Non-Injury or Property Damage Only (PDO)	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total
2011	0	1	0	0	0	1
2012	1	1	1	0	0	3
2013	1	0	0	0	0	1
2014	0	0	0	0	1	1
2015	1	0	0	0	0	1
2017	1	2	0	0	0	3
2018	0	1	0	0	0	1
Total	***4***	***5***	***1***	***0***	***1***	***11***
%	36.4%	45.5%	9.1%	0	9.1%	100.0%

Source: CRIS TxDOT

The existing RM 2243 roadway does not meet current design standards. Some examples are as follows:

- Sharp horizontal curves that require vehicles to slow down to safely navigate
- Lack of full width shoulders that allow vehicles to recover from errant driving and provide areas for turning vehicles to slow down out of the main travel lane prior to turning
- Lack of turn lanes
- Large trees and other objects located inside the clear zone that do not allow for areas of recovery for errant vehicles

While the current crash statistics are not above the national average for a roadway of this size, the significant growth rate of the Williamson County as a whole, and the growth rates of the nearby cities of Leander and Georgetown may result in increased crashes in the future.

3.0 Facility Type

RM 2243 is classified as a principal arterial/rural arterial road based on its traffic volume and function. The posted speed for the segment of existing RM 2243 from Southwest Bypass to 183A is 55 miles per hour (mph) (this is the location of the future expressway section). The posted speed of existing RM 2243 from Southwest Bypass to I-35 is 45 miles per hour (mph) (this is the location for the future urban section). Near Dell Pickett Elementary and Tippit Middle School a 30 miles per hour school zone speed limit is in place for use during school hours.

The typical roadway configuration was determined from several resources. The number of lanes needed to accommodate the future traffic was based on a traffic analysis. TxDOT consulted with Williamson County and determined that any improvements should match the typical roadway configurations in the *Williamson County Long Range Transportation Plan*. This resulted in a typical 350-foot ROW needed for the study corridor.

3.1 *Existing Conditions*

The existing RM 2243 facility differs depending on the area. The existing RM 2243 facility between I-35 and Norwood West consists of four 12-foot-wide travel lanes (two in each direction) with 2-foot-wide outside shoulders. Directions of travel are separated by a 12-foot-wide two way (continuous) left turn lane. The typical ROW width for this section is 100 feet. From I-35 to Shady Oaks Drive, one 5-foot sidewalk is located on the south side of RM 2243 (**Figure 5**). From Shady Oaks Drive to Norwood Drive, one 5-foot sidewalk is located on the south side outside of the existing ROW (**Figure 6**).

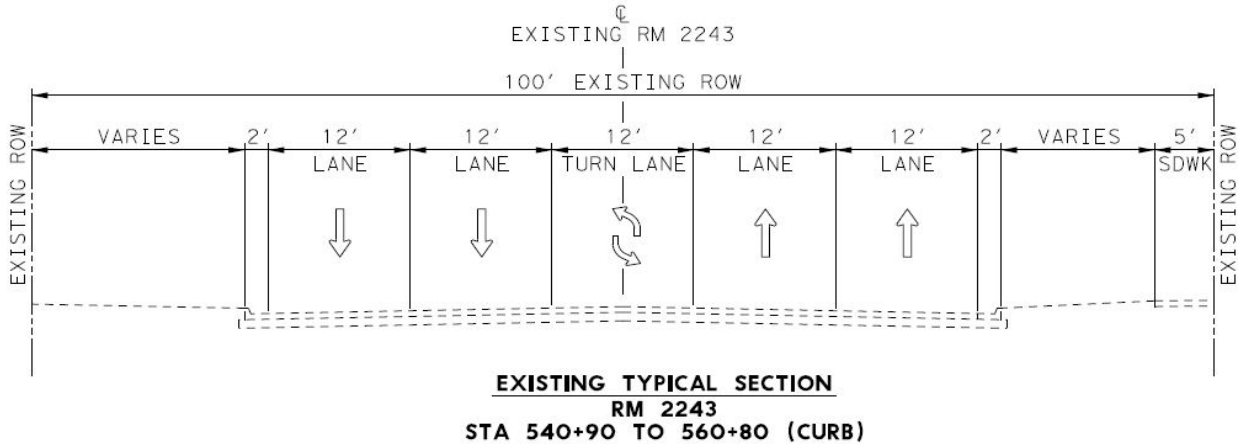


Figure 5. Existing Urban Typical Section 1

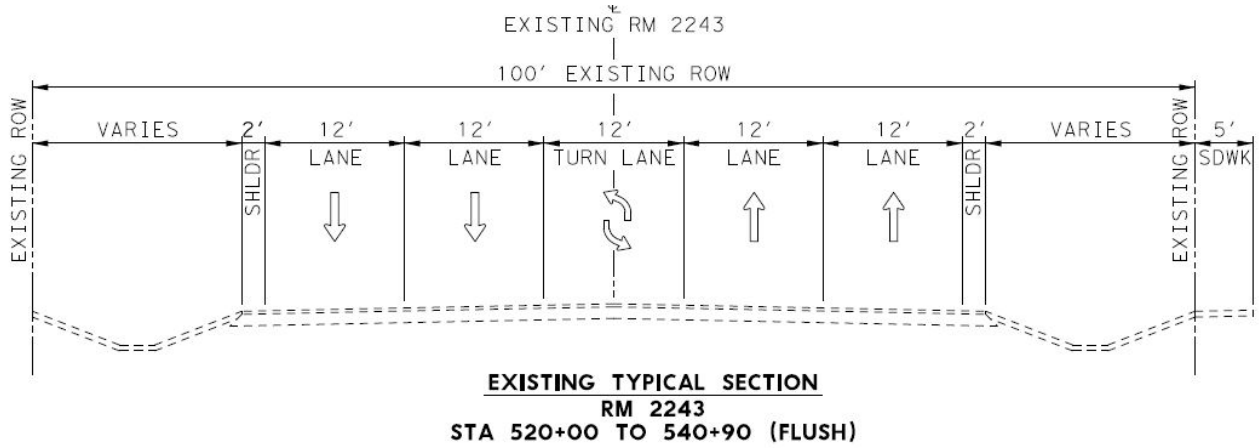


Figure 6. Existing Urban Typical Section 2

From Norwood Drive to 1900 feet west of Weir Ranch Road, RM 2243 transitions from four 12-foot-wide travel lanes with a 12-foot-wide two way (continuous) left turn lane to two 12-foot-wide travel lanes (one in each direction) with 2-foot-wide outside shoulders, and a 12-foot-wide two way (continuous) left turn lane. From Riverview Drive to Northwood Drive, there is a 5-foot-wide sidewalk along the north end. The typical ROW width for this section varies from 80 to 100 feet (**Figure 7**).

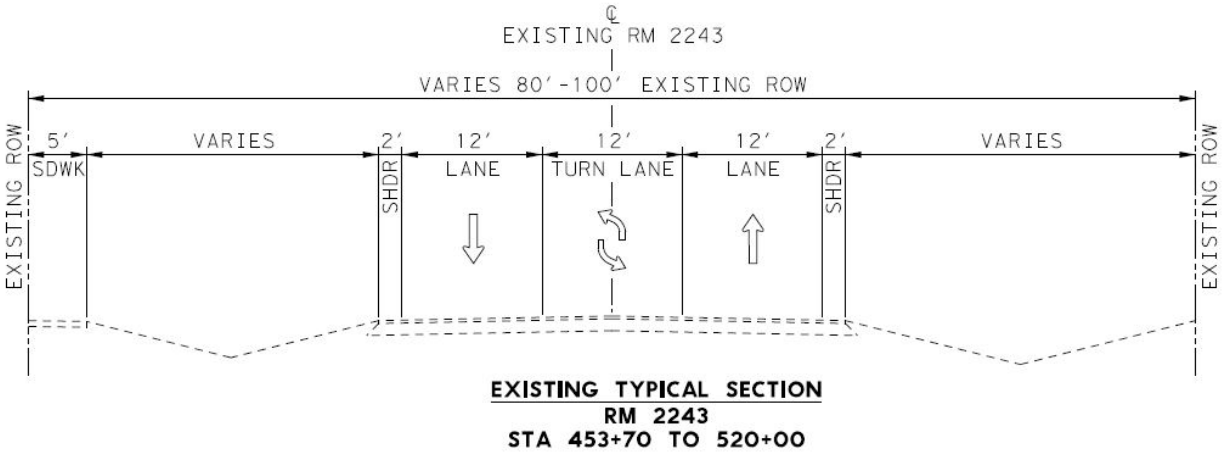


Figure 7. Existing Urban Typical Section 3

From 1900 feet west of Weir Ranch Road to 183A, the roadway becomes two 12-foot-wide travel lanes (one in each direction) with three-foot-wide shoulders. Unlike the urban section, this section is an undivided rural roadway (**Figure 8**).

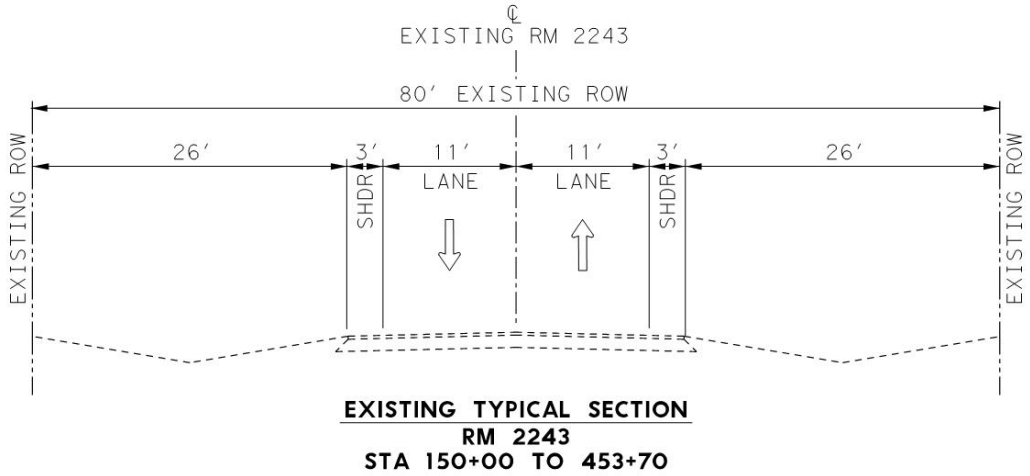


Figure 8. Existing Rural Typical Section

3.2 *Regional Connectivity*

RM 2243 extends from I-35 to 183A in Williamson County. The roadway is classified as either a four lane divided urban roadway or two-lane undivided rural highway, which provides an important link in the regional roadway network. The roadway intersects several major regional routes such as I-35, Ronald Reagan Boulevard, and 183A, all of which provide north south access to the rest of Williamson County and are all common roadways to travel into Travis County and the city of Austin. Growth in Williamson County and the cities of Leander and

Georgetown is expected to continue in the region. Since the RM 2243 feasibility study is examining future traffic projections in and around the study area, it is essential to maximize mobility along this critical corridor over time. Long-term plans of the *Williamson County Long Range Transportation Plan* identify RM 2243 as a future east-west alternative to SH 29 and SH 45,

3.3 *Existing Side Streets and Driveway Access*

Along the existing RM 2243 corridor there are numerous driveways and side streets where access to RM 2243 is provided. For the rural western segment of existing RM 2243 (from Southwest Bypass to 183A) the driveway and side street density is small. In this western segment access to RM 2243 can be complicated due to high speed mainlane traffic combined with, at some locations, horizontal and vertical sight distance challenges.

For the urban eastern segment of existing RM 2243 (from IH 35 to Southwest Bypass) the driveway and side street density is large. Residential intersections on RM 2243, at Rockcrest Drive/Tallwood Drive, and Woodmont Drive/Sab Gabriel Blvd are offset intersections. Through traffic at these intersections can pose a safety risk.

3.4 *Pedestrian and Bicycle Facilities*

It is TxDOT's policy to proactively plan, design, and propose roadways to safely accommodate bicyclists and pedestrians. Currently, there are no sidewalks along the existing rural section of the study area. In the urban section, pedestrians can use existing crosswalks, and a sidewalk located intermittently on the north and south sides of RM 2243.

3.5 *Engineering Safety Issues on current roadway*

As the RM 2243 feasibility study is a planning study, the existing RM 2243 roadway was examined for its potential use for a larger, high speed facility. Aspects of the current RM 2243 roadway do not make it suitable for a high-speed facility. A portion of RM 2243 contains sharp curves that would not be up to design standards, especially for a high-speed facility. Furthermore, the curved portion of the RM 2243 roadway is located in the floodplain, and close to Brushy Creek, making potential roadway expansion difficult. The sharp curves also cause issues with sight distance, which would only increase safety issues as growth in the area continues to rise. The existing RM 2243 corridor is currently an undivided roadway, increasing the likelihood of head on collisions compared to a divided roadway, especially as traffic increases in the area. The variable shoulder length along RM 2243 also possess safety risks because there is no area for drivers to pull over.

4.0 Environmental Constraints

Several environmental constraints exist within and adjacent to the RM 2243 study area. These include parkland (Garey Park), Edwards Aquifer contributing and recharge zones, and karst zones 1, 2, and 3. In addition, RM 2243 and Hero Way cross several waters of the U.S., including unnamed tributaries to the South Fork San Gabriel River and Bushy Creek.

4.1 *Section 4(f) Properties*

Publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites are protected under Section 4(f) of the Department of Transportation Act of 1966. As such, any proposed improvements that would require the use of parkland or any other 4(f) properties would require an evaluation to determine there is no feasible and prudent avoidance alternative to the use of the property. Garey Park is located within the study area on the north side of RM 2243 approximately 1 mile east of Ronald W Reagan Boulevard.

Under Section 4(f) of the 1966 Transportation Act (23 CFR 774), projects which impact or use public parks, recreation areas, wildlife or waterfowl refuges and historic sites, must perform a 4(f) evaluation to determine if there is a feasible and prudent alternative that avoids the use of a public park, recreation area, wildlife or waterfowl refuge, or historic site. It is not anticipated that the proposed project would require the use of or substantially impair the purposes of any publicly owned land from a public park, recreational area, wildlife and waterfowl refuge lands or historic sites of national, state or local significance. However, if a project is proposed along the corridor route proposes an impact to such a property, a Section 4(f) evaluation would be required to determine if there is feasible and prudent alternative to avoid the protected property.

4.2 *Edwards Aquifer*

The majority of the RM 2243 study area lies within the Edwards Aquifer Recharge Zone. The western end of the study area lies within the Edwards Aquifer Contributing Zone (TCEQ 2019). Any additional impervious cover added to the facility or constructed on new location would be assessed, and a determination would be made as to the applicability of any proposed actions as subject to the Edwards Aquifer Rules. The environmental portion of these rules entails a Geologic Assessment, which is a component of a Water Pollution Abatement Plan. Each of these constraints would be evaluated further if any proposed improvements are advanced.

4.3 *Endangered Species*

Section 9 of the Endangered Species Act (ESA) prohibits “take” of any federally listed threatened or endangered species, unless authorized under either Section 7 or Section 10. Section 7 of the ESA applies to projects which require some form of approval by a federal

agency other than the U.S. Fish and Wildlife Service (USFWS), such as the Federal Highway Administration or the USACE, for authorization, funding or permitting. Section 10 of the ESA provides a mechanism for a take permit for projects without a federal nexus. Projects that will not affect federally listed species and that do not result in take permit may proceed without having to go through either the Section 7 or Section 10 process.

Most of the study area is located within karst zone 1, which is known to contain endangered karst invertebrate species. Portions of the study area are located in Karst Zones 2, 3, and 4. Karst Zone 2 has a high probability of suitable habitat for endangered invertebrate cave fauna. Karst Zone 3 is defined as areas with low probability of containing endangered karst invertebrates, and Karst Zone 4 is defined as areas that do not contain endangered cave fauna (USFWS 2016). Any improvements in Karst Zones 1, 2, or 3 would include the appropriate biological investigations to ensure compliance with the Endangered Species Act (ESA).

Karst species federally listed as endangered that occur in Williamson County include Coffin Cave mold beetle (*Batrisodes texanus*), Tooth Cave ground beetle (*Rhadine Persephone*), Bone Cave harvestman (*Texella reyesi*), and Tooth Cave spider (*Neoleptoneta myopica*) (USFWS 2019). The study area contains multiple karst features where several of these species are known to occur and the preliminary ultimate schematic would impact known locations. There is a high likelihood that other undiscovered features exist within the study area that may influence the future design and placement of the roadway. Detailed field investigations for karst features will be evaluated if the project advances and right of entry is available. Locations of occupied karst features may pose a substantial challenge for project advancement. Karst features and ESA compliance may pose a substantial challenge for project advancement; however, should the project advance, additional efforts would be made to determine if impacts to features could be avoided, minimized or mitigated.

There are several known springs within one mile north of the study area that could provide suitable habitat for the federally endangered Georgetown salamander (*Eurycea naufragia*). There is one USFWS designated Critical Habitat Unit (CHU) for the Georgetown salamander approximately 1.5 miles north of the study area (USFWS 2019b). This CHU is across the South Fork San Gabriel River from the study area and, therefore, would not likely be impacted by improvements to RM 2243. However, appropriate biological investigations to ensure compliance with the ESA would be included.

Data from the *Texas Natural Diversity Database* (TXNDD) suggests the potential for Golden Cheeked Warbler (GCW) habit along the project area. If the project continues past the

RM 2243 feasibility study, a habitat assessment survey for the GCWs would be conducted as part of the next stage of environmental clearance.

If the project advances under TxDOT's direction and oversight, it would be subject to National Environmental Policy Act compliance, as well as TxDOT's environmental rules and regulations. Environmental constraints maps are included in **Appendix A.**

4.4 *Water Resources*

Part of the RM 2243 feasibility study included the identification of mapped water resources by initially reviewing the project layout in relation to the following data sources:

1. Current and historical U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles
2. U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) maps
3. Federal Emergency Management Agency's (FEMA's) floodplain maps (2017)
4. Aerial photographs (Google Earth Pro 2017)
5. USGS National Hydrography Dataset (USGS 2016)

Based on the sources listed above, the RM 2243 study area crosses seven unnamed intermittent streams, which are expected to be considered waters of the U.S. (i.e., aquatic features that are protected under Section 404 of the Clean Water Act [CWA]) (USGS 2016). The NWI maps a number of freshwater ponds, but no wetlands, within the area. Note that field investigations would be required to confirm the presence or absence of wetlands based on site-specific soils, vegetation, and hydrology, and to determine the precise locations and extent of waters of the U.S. within the study area.

Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the U.S. If any proposed improvements are advanced, anticipated impacts to waters of the U.S. associated with the proposed improvements would be assessed based on the project design and the results of field investigations. Proposed improvements within waters of the U.S. would likely be authorized under Nationwide Permit (NWP) 14 or a Section 404 Individual Permit, depending on the type and extent of impacts. Assuming NWP 14 applies, submittal of a PCN to the USACE Fort Worth District would be required if any of the thresholds or conditions associated with the NWP are met, including discharge in a special aquatic site (i.e., wetland) or losses of streams that exceed 300 linear feet.

Section 402 of the CWA regulates the discharge of pollutants into waters from construction activities through the National Pollutant Discharge Elimination System (NPDES). Within the State of Texas, authority for most of this program has been transferred to the Texas

Commission on Environmental Quality (TCEQ) through the Texas Pollutant Discharge Elimination System (TPDES). If the proposed improvements were advanced and would disturb more than 5 acres of land, the project would require coverage under the TPDES Construction General Permit (CGP) (TXR150000). Coverage would include preparation and implementation of a Storm Water Pollution Prevention Plan (SW3P) and submittal of a Notice of Intent to the TCEQ.

Based on a review of the list of navigable waters within the U.S. Army Corps of Engineers (USACE) Fort Worth District, there are no navigable waters within the study area. Therefore, Section 10 of the Rivers and Harbors Act (RHA) would not apply to proposed improvements in the study area.

Section 303 of the CWA requires states to identify waters where current pollution control technologies alone cannot meet the water quality standards set for that waterbody. None of the streams mapped within the study area are listed on the Section 303(d) list of threatened and impaired waters.

According to FEMA, there are no 100-year floodplains mapped in the study area. Therefore, coordination with the local Floodplain Administer would not be required.

As discussed in Section 4.2, the majority of the RM 2243 study area lies within the Edwards Aquifer Recharge Zone and the western end of the study area lies within the Edwards Aquifer Contributing Zone. If any proposed improvements are advanced, the applicability of the Edwards Aquifer Rules and need for a Geologic Assessment and Water Pollution Abatement Plan would be evaluated further.

4.5 *Cultural Resources*

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries, and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to this project. Compliance with these laws often requires consultation with the Texas Historical Commission (THC), Texas State Historic Preservation Officer (SHPO), and/or federally-recognized tribes to determine the project's effects on cultural resources. TxDOT will comply with the federal and state laws as applicable. Additionally, TxDOT will complete compliance documentation in accordance with TxDOT's published Environmental Toolkits. The following summary outlines the cultural resources (historic resources and archeological resources) located within the 1-mile study area.

4.5.1 *Historic Resources*

A review of the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), and the list of Recorded Texas Historic Landmarks (RTHL) indicated that historically significant resources have been previously documented within the one mile study area, which are as follows (from west to east on the constraints maps):

- Bryson Farmstead: RTHL and previously determined NRHP-eligible
- Victims of the Webster Massacre 1936 Centennial Marker: previously determined NRHP-eligible
- A.M. Brown Cabin (location unconfirmed): RTHL
- Paige-DeCrow-Wier House: NRHP-listed
- McKnight-Ebb House: NRHP-listed
- John J. Dimmitt House: NRHP-listed

All of these resources are located outside of the proposed corridor and are not expected to be impacted by a future undertaking along the proposed corridor.

4.5.2 *Archeological Resources*

A review of the THC's Online restricted-access Archeological Sites Atlas indicated that one NRHP-listed archeological resource has been previously documented within the study area, site 41WM510/Paige-DeCrow-Weir House (as indicated above). One site additional site, 41WM1006/Davis Cemetery, has been determined eligible for listing on the NRHP/designation as a SAL.

5.0 Proposed Facility

The RM 2243 feasibility study examined long-term trends of the area to help develop the preliminary ultimate schematic and anticipated ROW needs. No construction funding is identified at this time. Various engineering constraints were used to evaluate each alternative alignment. Alternatives would utilize the existing ROW as much as possible and therefore minimize the amount of new ROW required. Wherever new ROW was needed, the alignment was designed to minimize impacts to residential and commercial structures. The alignments were also designed to avoid and/or minimize impacts to the environmental constraints identified during project development. One stream crossing in the area at Bushy Creek (with large floodplain footprint) is located within the study area. The designs would minimize the amount of earthwork in the floodplain, as well as limit the number and length of bridges needed at each crossing. Major utility crossings, such as electrical transmission lines, are also

an engineering constraint and thereby influenced the alignments of the roadway to avoid impacts and the need for relocations.

5.1 *Method of Construction*

As previously stated, the east of west portions of the RM 2243 study area have different needs. Therefore, it was important during this study to examine the needs of each area. There are two different areas of study within the RM 2243 study area:

- Urban section: from I-35 to Southwest Bypass
- Expressway section: from Southwest Bypass to 183A

Both the individual needs of each area were taken into account during the creation of the preliminary ultimate schematic, as well as the study area as a whole. For example, while the design of the roadway differs throughout the study, pedestrian facilities remained consistent to create a full-length pedestrian shared-use-path on the north side throughout the entire RM 2243 facility, and a full length 6-foot-wide sidewalk on the south side. A full preliminary schematic can be seen in **Appendix B**.

5.2 *Urban Section*

As previously stated, the study area was divided into two areas because of the need of each section: the urban section and the expressway section.

The urban section, which extends from I-35 to Southwest Bypass, exhibits more restrictive ROW requirements because of the already existing development directly along the corridor. While the existing conditions of the urban section is a four lane (two in each direction), undivided roadway with a 12-foot continuous left turn lane, the proposed improvements would add a raised median to separate the through lanes and provide left turn lanes at intersections and at specific median breaks.. The introduction of the raised median will control access to RM 2243 and will increase safety. The design speed for the mainlanes in this section is 45 miles per hour (mph) low speed.

Several intersection re-alignments were proposed at specific intersections along RM 2243. Many of these intersections were examined because of safety risks, such as no traffic lights, the inability for drivers to safety turn left because of lack of visibility, and drivers ignoring the no left turns. Therefore, re-alignments were proposed at the following intersections: Rockcrest Drive/Tallwood Drive and San Gabriel/Woodmont Drive.

In addition to roadway improvements, pedestrian and bicycle accommodations are proposed. The proposed pedestrian improvements would include placing a 10-foot-wide shared-use path on the north side of the roadway. A 6-foot sidewalk on the south side is also proposed. This

would allow for both pedestrians and bicyclists to more safely navigate the corridor. The proposed typical sections for the urban section can be seen in **Figure 9**.

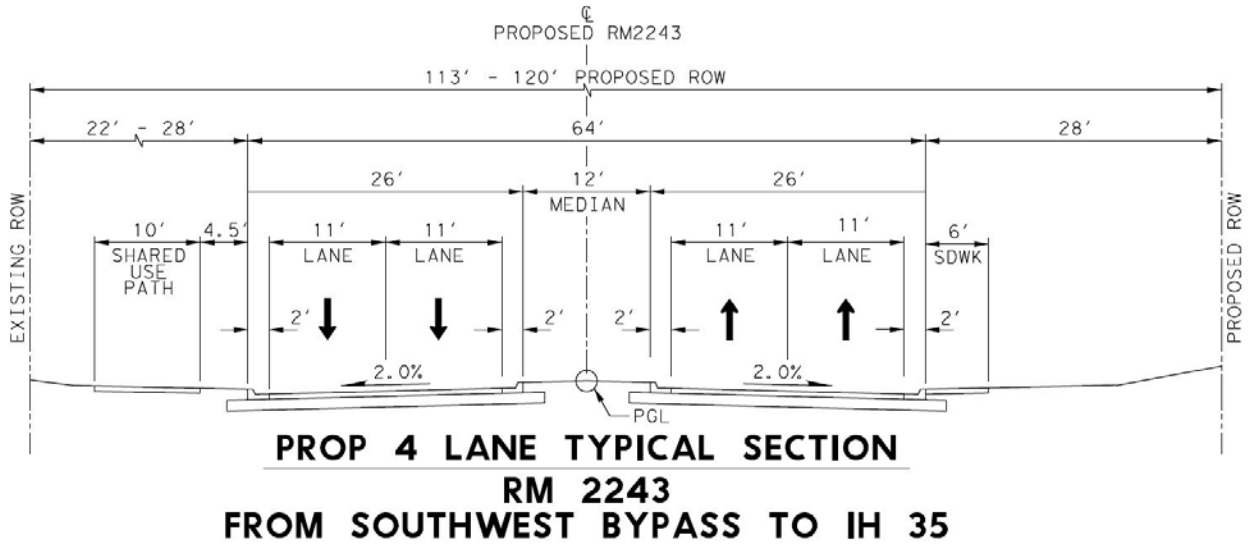


Figure 9. Urban Typical Section 1

5.3 *Expressway*

For the expressway section of the corridor, improvements would include the construction, partially on a new location between RM 2243 and Hero Way. Along this new alignment, the proposed typical roadway configuration for the expressway section would include both frontage roads and mainlanes. The Design speed for the mainlanes is 70 miles per hour (mph), while the frontage roads have a 60 mile per hour (mph) design speed. The frontage roads would consist of six 12-foot-wide travel lanes, with three lanes in each direction separated by a variable width grassy median. The roadway would include four-foot-wide inside shoulders. The proposed facility includes the construction of four 12-foot main travel lanes, two in each direction, and 10-foot outside shoulders on either side of the roadway. The frontage roads and mainlanes would be separated by a variable width grassy median. Each side of the main lanes would be separated by a concreate barrier. Along with the addition of main lanes, direct connectors to 183A and Southwest Bypass are proposed. The ROW requirements for this roadway configuration would typically be 350-feet.

The proposed improvements at the expressway section of the project area would continue the pedestrian and bicycle accommodations from the urban section. A 10-foot shared use path would be built along the north side of the corridor, and a 6-foot sidewalk would be built on the south side of RM 2243. Typical roadway configuration diagrams for the expressway section are illustrated in **Figure 10.**

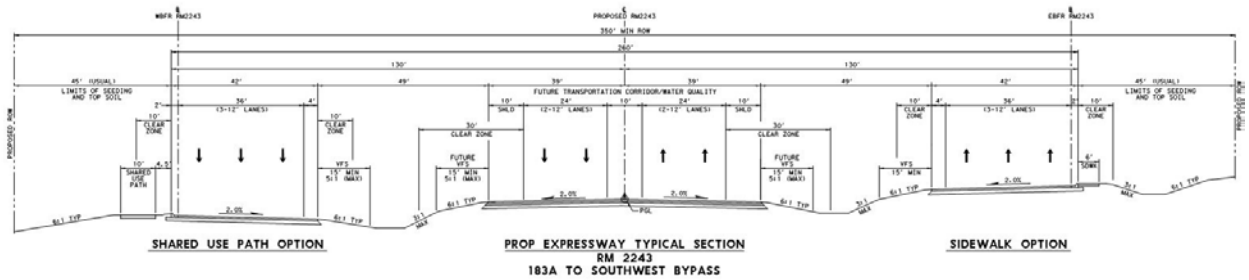


Figure 10. Proposed Expressway Typical Section

At grade separated intersections a typical ROW of 500-feet is required. This would accommodate two 12-foot wide auxiliary lanes for entering and exiting the frontage roads. Typical roadway configuration diagrams for the expressway section with auxiliary lanes are illustrated in **Figure 11.**

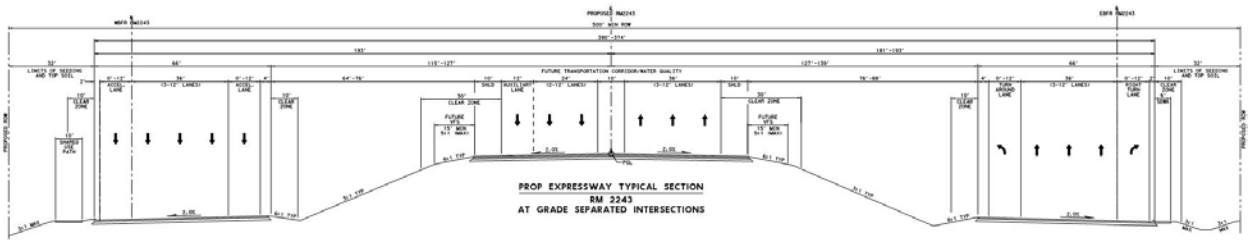


Figure 11. Proposed Expressway Typical Intersection

The typical sections shown are preliminary and may not reflect the final design. The preliminary ultimate schematic shown would fulfil the goals of the study by increasing mobility needed for the increase population and traffic growth in the coming years. The size and alignment of the schematic would avoid the floodplain, minimizing issues with Brushy Creek, and would minimize the disruption of residential and commercial parcel. This schematic would also utilize state and county ROW whenever possible.

5.4 *Opinion of Probable Construction Cost*

The opinion of probable construction cost estimate for the preliminary ultimate schematic is approximately $415,000,000. This estimate is calculated using 2019 construction cost unit prices, and does not include required ROW acquisition, utility relocation, engineering, or other associated projects costs.

6.0 Public Outreach

From the beginning of the study, TxDOT has sought to include public input as a crucial component into the corridor study process. TxDOT approached public involvement for this

project in two ways: stakeholder meetings and one public meeting. A total of five entities were consulted as stakeholders for this feasibility study: Williamson County, the cities of Leander and Georgetown, Lower Colorado River Authority, and Texas Crushed Stone. A total of 35 meetings were conducted over a three-year time span for refinement of the alternative alignments. One public meeting was conducted on November 29, 2018. In an effort to include public input, public comments were taken into consideration and guided the goals and objectives of the study.

6.1 *Stakeholder Meetings*

Over the three-year study period, TxDOT met with stakeholders to refine the potential improvements within the RM 2243 study area. Williamson County, and the cities of Leander and Georgetown, have long-range transportation plans to help guide roadway development while looking ahead to the future needs of their municipal areas. Since the RM 2243 feasibility study also examined long-term transportation needs of the region, it was essential that these entities be involved throughout the planning process. Stakeholders included representatives from Williamson County, the City of Georgetown, and the City of Leander. The design of the ultimate facility was developed based on stakeholder input. All attempts were made to follow long-range transportation plans from when possible.

Table 4: List of Stakeholder Meetings

Name of Meeting	Date
Georgetown Coordination	April 24th, 2015
Williamson County Coordination	April 28th, 2015
Leander Coordination	May 4th, 2015
Williamson Commissioner Meeting	August 12th, 2015
Joint Stakeholder Meeting	July 11th, 2016
Williamson County Update Meeting	August 19th, 2016
Leander Update Meeting	August 24th, 2016
Leander 183A-RM 2243 Connection Meeting	August 31st, 2016
Leander Meeting	October 24th, 2016
Leander Meeting	November 11th, 2016
Williamson County Coordination Meeting	April 6th, 2017
Texas Crushed Stone Meeting	April 26th, 2017
City of Georgetown Meeting	May 3rd, 2018

Table 4: List of Stakeholder Meetings

Name of Meeting	Date
City of Leander Meeting	May 3rd, 2018
Williamson County Meeting	May 3rd, 2017
Leander Meeting	May 3rd, 2017
Williamson County Meeting	June 6th, 2017
HDR-Williamson County Meeting	June 26th, 2017
LCRA Meeting	July 8th, 2017
Williamson County Meeting	July 18th, 2017
LCRA Meeting	July 25th, 2017
Leander Options Meeting	July 25th, 2018

TxDOT conducted a kickoff meeting for the RM 2243 feasibility study on February 18, 2015. The preliminary ultimate schematic based on the maximum traffic output anticipated in the next 20-30 year period was requested. A number of design choices for the preliminary ultimate schematic were refined during these stakeholder meetings, including construction partially on new location, the amount of ROW for the proposed facility, pedestrian and bike accommodations, and the avoidance of the institutional landmarks, such as Garey Park.

6.2 *New Location*

One of the topics discussed during these stakeholder meetings was the possibility of RM 2243 being built partially on a new location on the west end of the study area. TxDOT and stakeholders examined three options: a new connection to San Gabriel Parkway, Hero Way, and the no build option, in which RM 2243 improvements would be made along its current alignment. TxDOT and stakeholders discussed goals and objectives for the project as well as different parameters for the new roadway. It was decided that because of the sharp curve on the western end of the current RM 2243 alignment, that a new location was the most feasible option rather than the no-build.

Williamson County released a document called the *Williamson County Long-Range Transportation Plan* in 2017, that examines potential future roadway improvements for the county. The Long-Range Transportation Plan identifies a new connection between RM 2243 and Hero Way. To be consistent with the long-range plan, a new connection between RM 2243 and Hero Way was decided. TxDOT also indicated that bike and pedestrian facilities should be included in the proposed roadway. Because the future potential RM 2243 roadway would be

considered a high-volume roadway, grade separations were recommended at all major intersections along the expressway section.

6.3 *Right-of-Way Requirements*

The ROW requirements for the RM 2243 feasibility study changed through the development process. Before traffic predictions were identified, TxDOT recommended a ROW footprint no larger than 200-feet, with additional ROW allocated for water quality. However, the ROW needed was increased for two reasons. First, the ROW increased to remain consistent with the *Williamson County Long-Range Plan*, which extends the ROW footprint from 200-feet to 350-feet with 500-feet at intersections. The other reason was the increased ROW footprint needed to accommodate the future traffic projections of the area. In the urban section, the ROW footprint needed was much smaller because of the more urban and residential development closer to the roadway. Therefore, it was decided that the ROW for the urban area would be constricted to 100-120 feet.

6.4 *Garey Park*

Georgetown requested that the planned community park, Garey Park, not be impacted from the proposed roadway improvements. Therefore, the current preliminary ultimate schematic does not include ROW being taken from Garey Park.

6.5 *Open House Public Meeting*

RM 2243 open house public meeting.

Following the stakeholder meetings, the preliminary ultimate schematic for RM 2243 was created. The preliminary ultimate schematic was presented at the open house public meeting, which was held on November 29, 2018 and introduced the RM 2243 feasibility corridor study to the public. Public meeting notices were sent to property owners within the study area and elected officials. Notices announcing the meeting were published on TxDOT's website and in local newspapers. Notices for the open house public meeting were published in the *Williamson County Sun* on November 14, 2018, and the *El Mundo* on November 15, 2018.

RM 2243 open house public meeting.

Displays at this meeting included study area maps, four environmental constraint maps, including karst zones and water features, the project timeline, a display showing how to comment, existing and proposed typical sections for both the urban sections and expressway sections. In addition, a brief, four-minute PowerPoint presentation was also played on a loop for the duration of the meeting that provided an overview of the project, project goals, and ways to comment about this project. The preliminary ultimate schematic was also shown at the meeting; however, the alignment was not finalized.

The project team was available to answer questions. One of the goals of the meeting was to receive public input on the ultimate schematic, solicit possible solutions for the corridor that could be incorporated into future projects, as well as any previously unidentified environmental constraints within the study area.

Approximately 220 people attended the meeting. A total of 111 written comments were received, including 23 comments that were hand written on meeting exhibits.

Members of the public examining exhibits presented at the open house public meeting.

The project team *and members of the public discussing the exhibits presented at the open house public meeting*

A summary of comments received are presented in **Figure 12**.

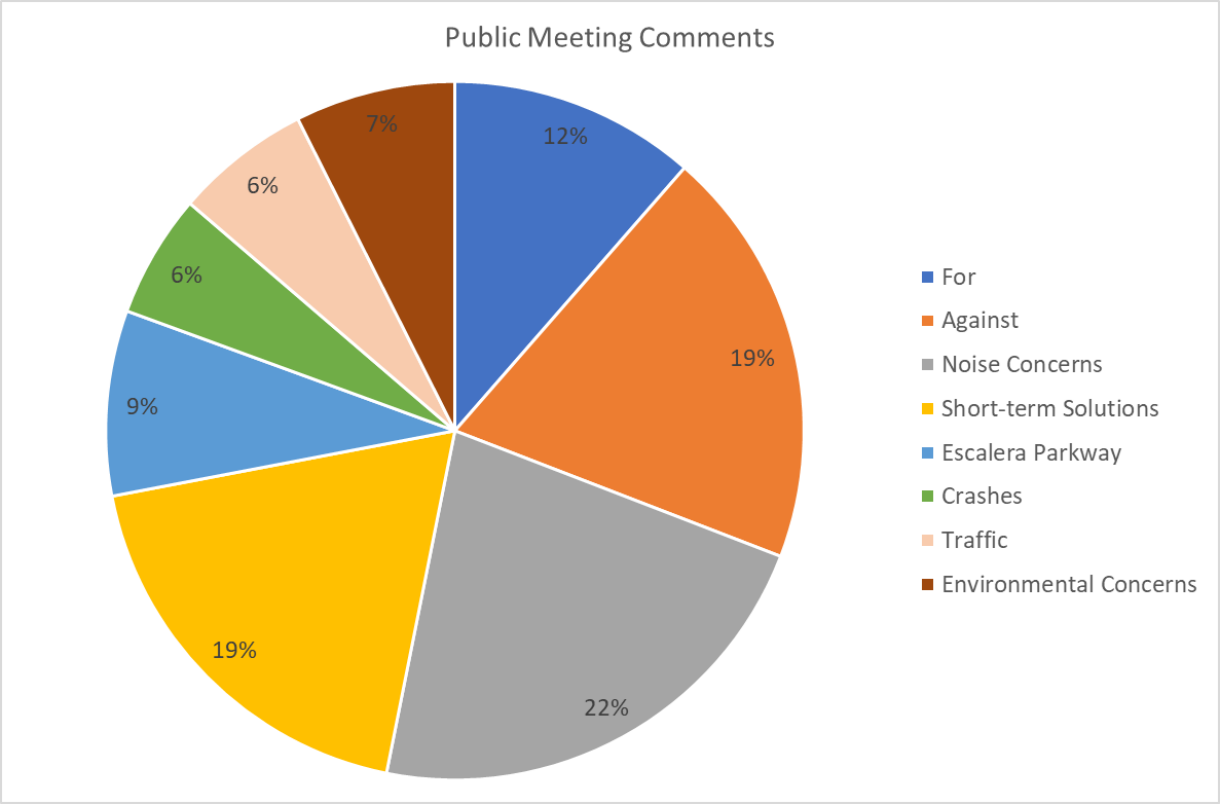


Figure 12. Summary of Public Meeting Comments Received

Approximately 22% of the comments from the public meeting were related to noise concerns from both the preliminary ultimate schematic, and from current traffic along RM 2243. While 12% of the comments expressed approval for the ultimate design, 19% of comments expressed concerns regarding the size of the ultimate build. Among this 19% concerned about the size, approximately 65% of them stated they want improvements along RM 2243, but believe the current preliminary ultimate schematic is too large and would rather see a smaller facility proposed. Approximately 19% of the comments expressed the need for short-term solutions, such as traffic lights at different intersections, turn lanes, and illumination. Regarding the preliminary ultimate schematic, 9% of the comments stated that the exit nearest Escalera Parkway was too close to Escalera Parkway, which would make it difficult for residents to turn onto the street.

7.0 Next Steps

The RM 2243 feasibility study is needed to address the future population and traffic growth of the surrounding area, and the safety issues that often accompany them. The goals of the study included determining the amount of ROW required for the RM 2243 facility based on the future projected volumes while also minimizing impacts to residential and commercial

parcels and utilizing state and county ROW when possible. The resulting preliminary ultimate schematic accomplishes these goals of the study, as well as avoiding/minimizing flooding issues with Brushy Creek, and would improve mobility along the RM 2243 facility (**Appendix B**).

The RM 2243 feasibility study is a planning level study and no construction funds have been identified as of June 2019 for the complete ultimate facility. However, comments, responses, and information gathered from this study will be utilized should the study be advanced into the NEPA phase of project development. During this phase of project development, additional environmental study, alternatives evaluation, schematic development, and public involvement would be undertaken, including additional public involvement. Furthermore, since the RM 2243 feasibility study examined the long-term needs of the corridor, and no construction funds have been found, the preliminary ultimate schematic designed for this study could be modified for a number of reasons. Should it be determined during the NEPA process that the best alternative is one that provides for a new location alternative, the existing RM 2243 facility would be left in place and maintained to provide access to adjacent property owners.

8.0 References

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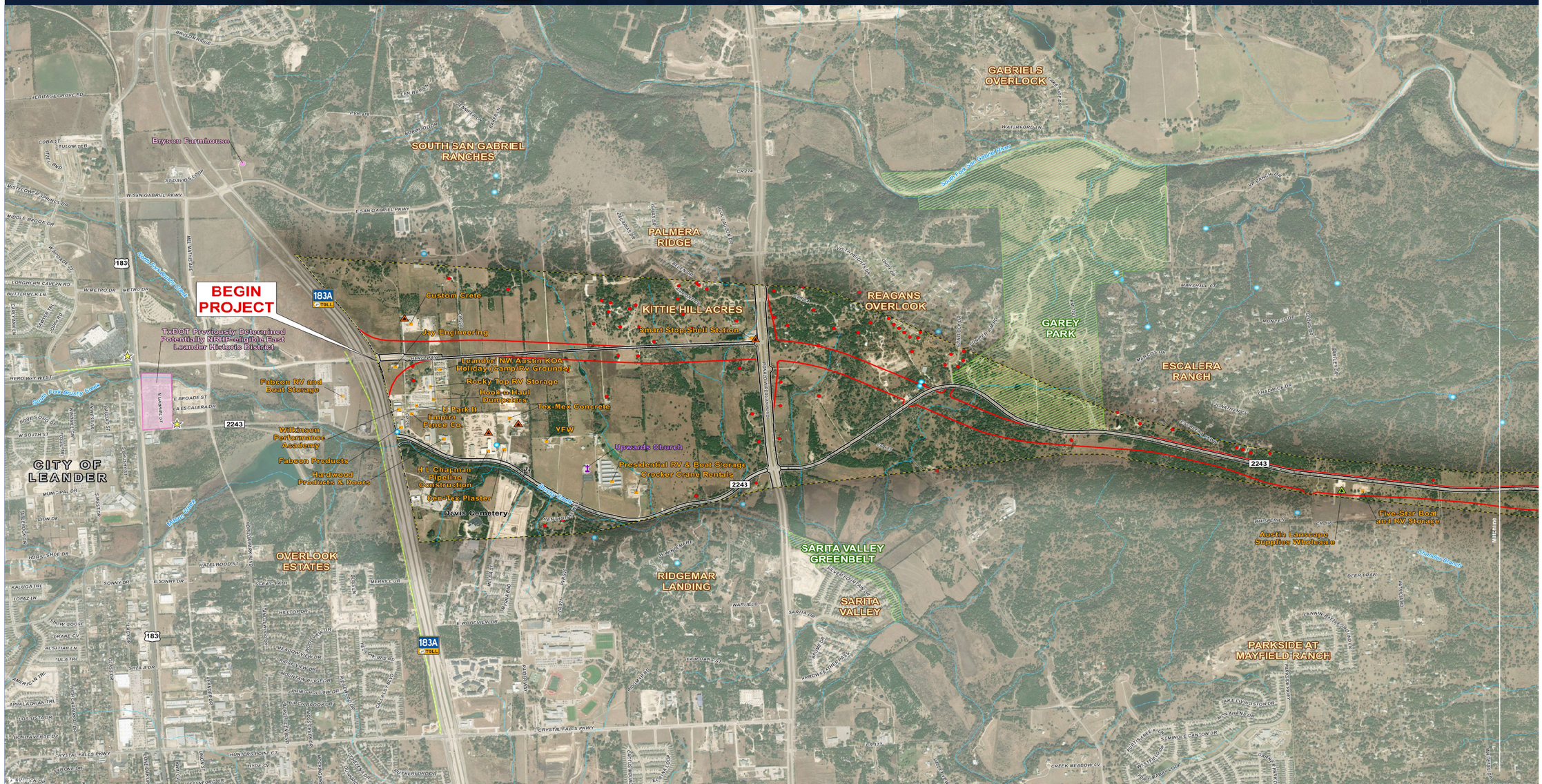
Appendix A

Constraints Maps

Texas Department of Transportation

RM 2243 from 183A to I-35
Constraints Map 1
Williamson County, Texas
CSJ: 2103-01-032



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

La revisión ambiental, consultas y otras acciones requeridas por las leyes ambientales federales correspondientes para este proyecto, han sido o se están llevando a cabo por TxDOT en cumplimiento a 23 U.S.C. 327 y un Memorando de entendimiento con fecha del 16 de diciembre de 2014, y ejecutado por FHWA y TxDOT.

RM 2243 from 183A to I-35
Constraints Map 2
Williamson County, Texas
CSJ: 2103-01-032

Texas Department of Transportation

- Existing Right-of-way
- Proposed Right-of-way
- Study Area
- River/Stream
- Residence
- Commercial
- Government Office
- Hospital/Polyclinic
- Place of Worship
- School
- Historical Marker
- National Register of Historic Places-eligible or Listed Property
- National Register of Historic Places-eligible or Listed District
- Cemetery
- Water Well
- Spring
- Permitted Oil/Gas Well Location
- Petroleum Storage Tank
- Mine/Quarry
- Park
- Trail

1 Inch = 700 Feet

0 350 700 1,050 1,400 Feet

Base Map Imagery: 2018 Bing Imagery

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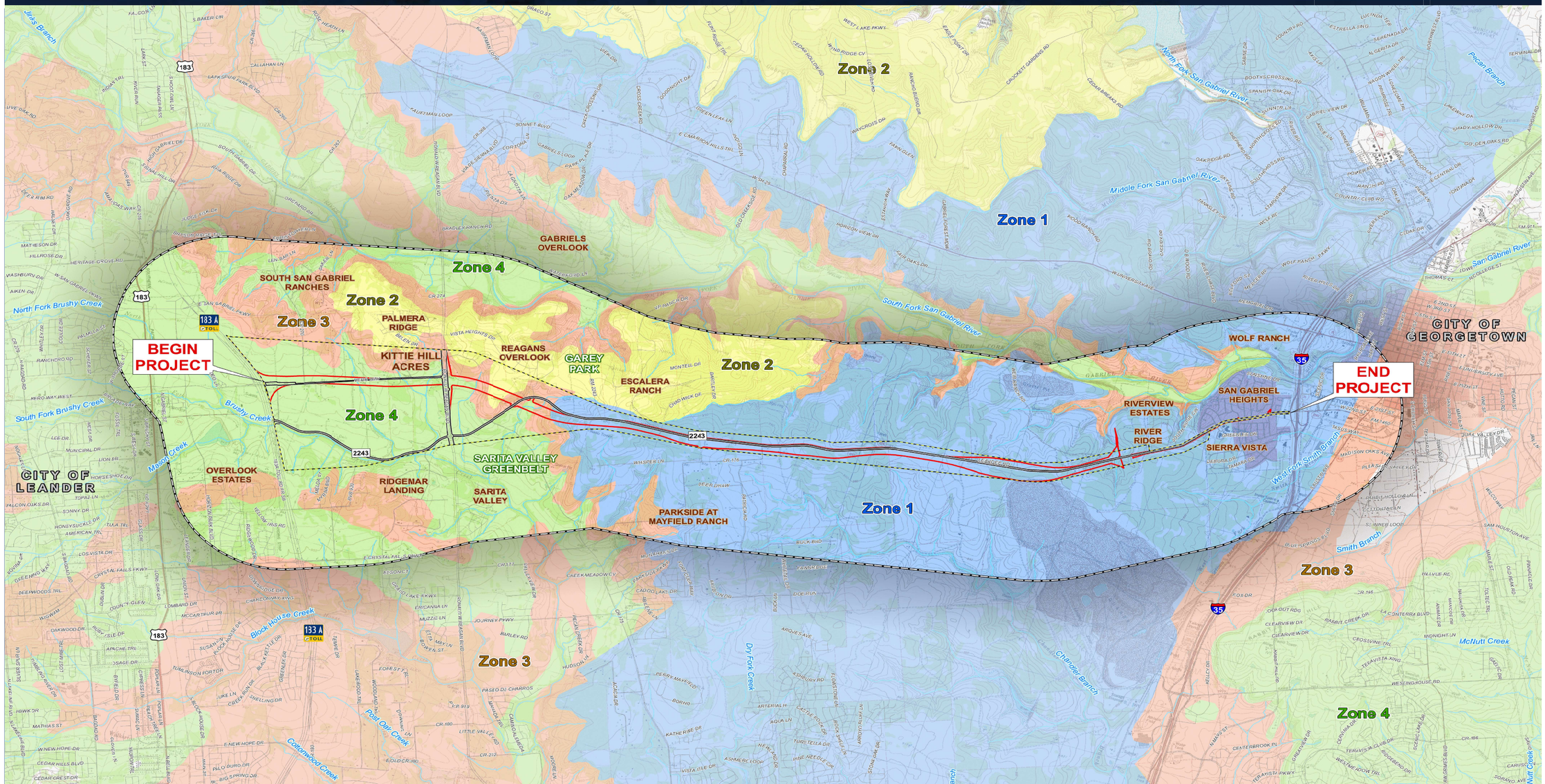
Texas Department of Transportation

RM 2243 from 183A to I-35
Karst Zone Map
Williamson County, Texas
CSJ: 2103-01-032



- Proposed Right-of-way
- Existing Right-of-way
- Study Area
- 1-mile Buffer of Study Area
- River/Stream

Karst Zone

- Zone 1: Known Endangered Cave Species
- Zone 2: High Probability Endangered Cave Species
- Zone 3: Low Probability Endangered Cave Species
- Zone 4: No Endangered Cave Species

1 Inch = 1,500 Feet

0 1,500 3,000 4,500
Feet

7.5' USGS Topographic Quadrangles:
Georgetown, Texas (1982 Map ID No. 30097-F6)
Leander, Texas (1987 Map ID No. 30097-E7)
Leander NE, Texas (1962, Map ID No. 30097-F7)
Round Rock, Texas (1987 Map ID No. 30097-E6)

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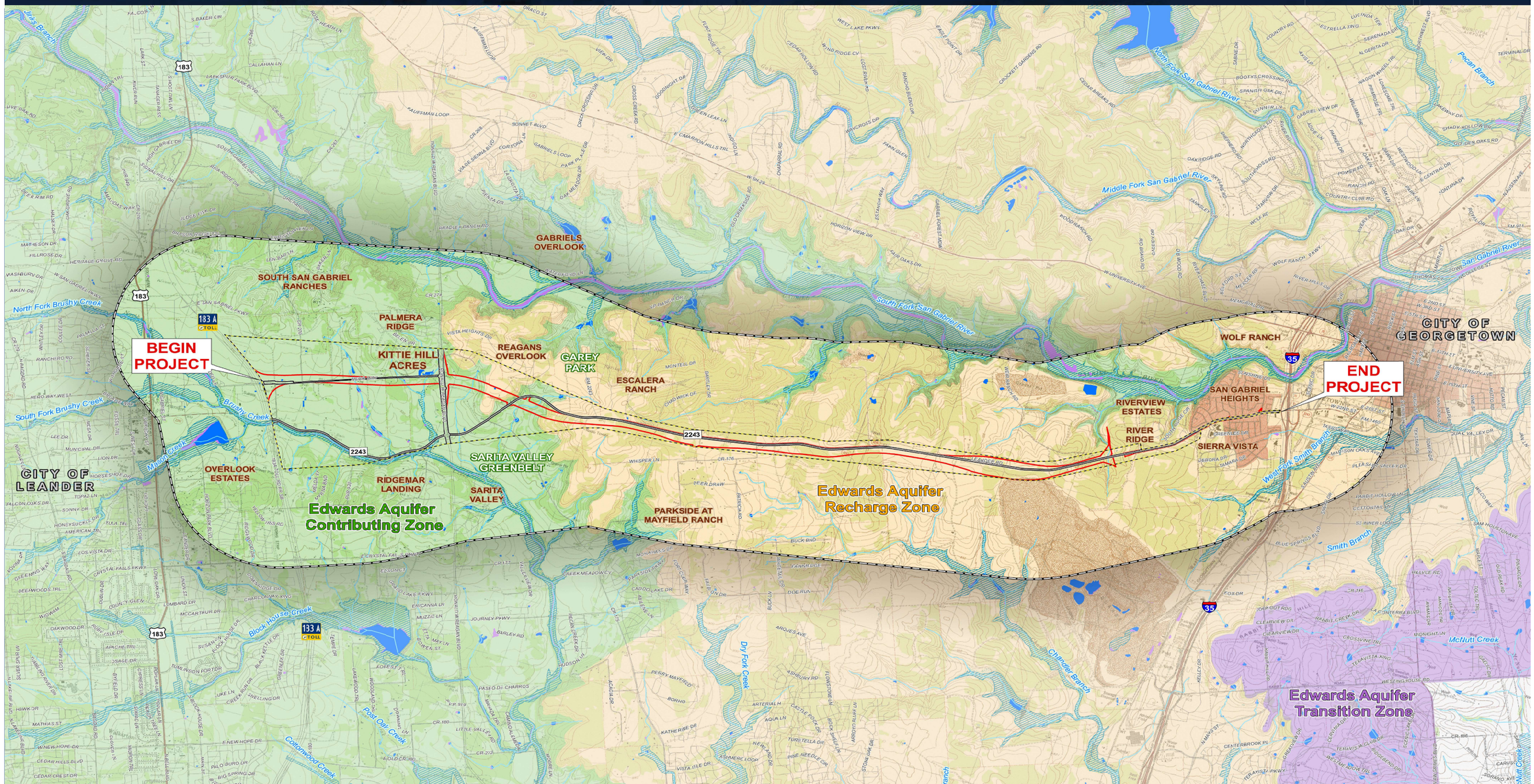
Texas Department of Transportation

RM 2243 from 183A to I-35
Waters Map
Williamson County, Texas
CSJ: 2103-01-032



Existing Right-of-way
Proposed Right-of-way
Study Area
1-mile Buffer of Study Area
River/Stream
Waterbody
National Wetlands Inventory Feature
100-year Floodplain
Edwards Aquifer Contributing Zone
Edwards Aquifer Recharge Zone
Edwards Aquifer Transition Zone

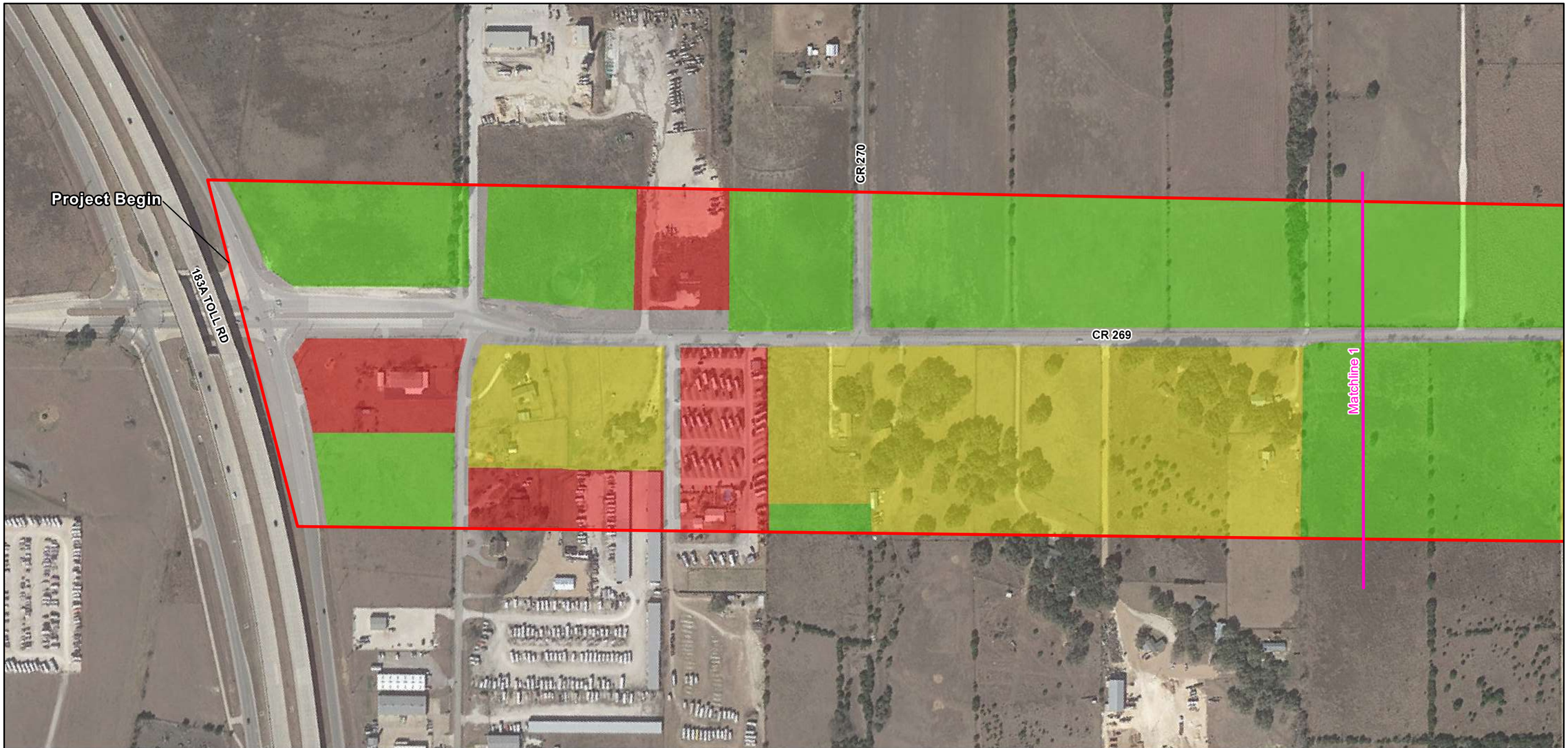
1 Inch = 1,500 Feet

0 1,500 3,000 4,500
Feet

7.5' USGS Topographic Quadrangles:
Georgetown, Texas (1982 Map ID No. 30097-F6)
Leander, Texas (1987 Map ID No. 30097-E7)
Leander NE, Texas (1962, Map ID No. 30097-F7)
Round Rock, Texas (1987 Map ID No. 30097-E6)

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

La revisión ambiental, consultas y otras acciones requeridas por las leyes ambientales federales correspondientes para este proyecto, han sido o se están llevando a cabo por TxDOT en cumplimiento a 23 U.S.C. 327 y un Memorando de entendimiento con fecha del 16 de diciembre de 2014, y ejecutado por FHWA y TxDOT.



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

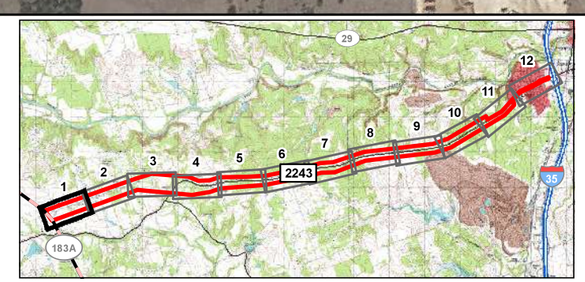
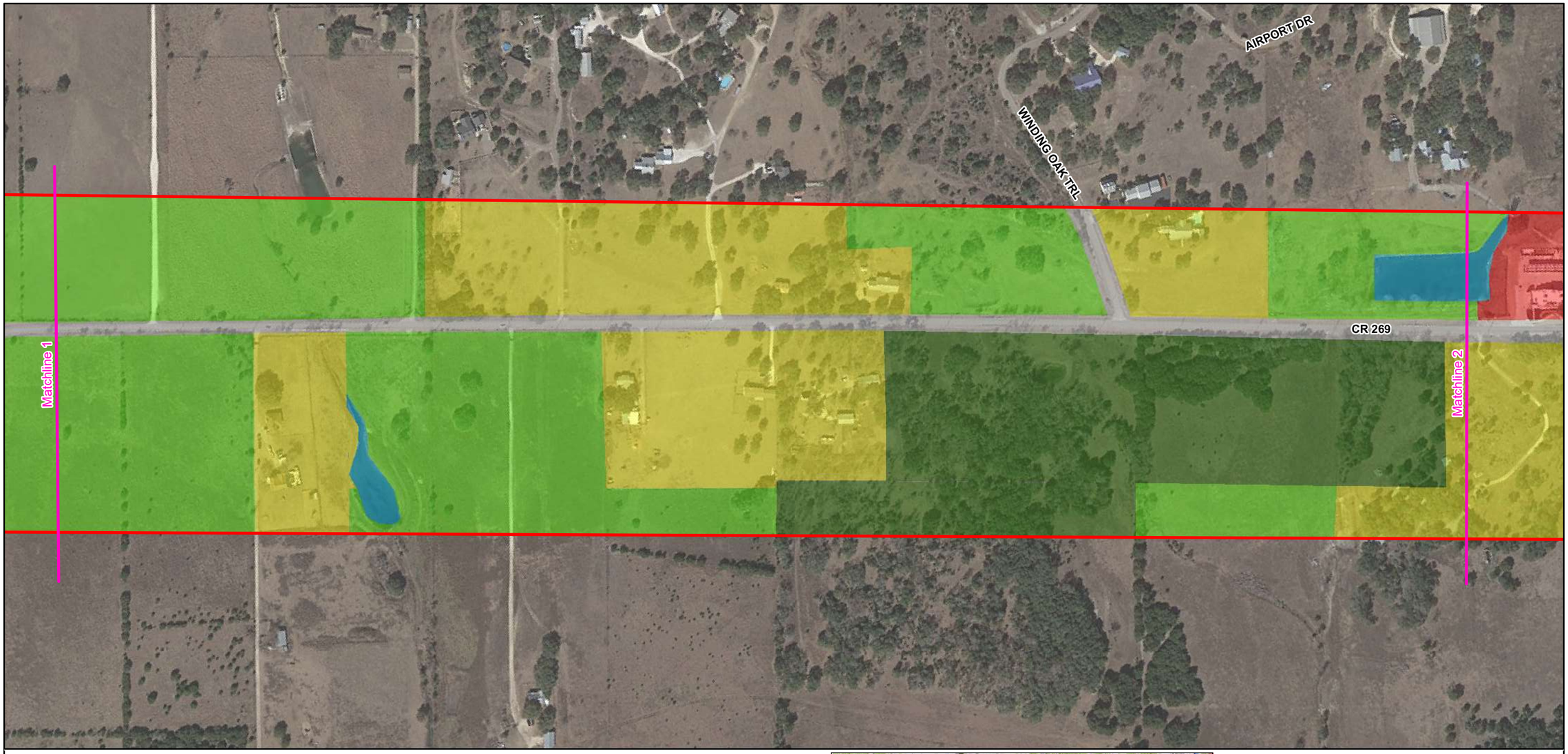


Fig 3.1
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450
Feet

Base Map: 2018 Google Imagery

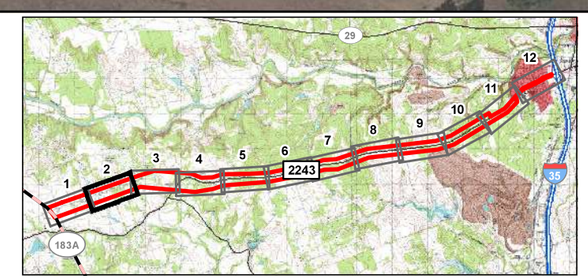
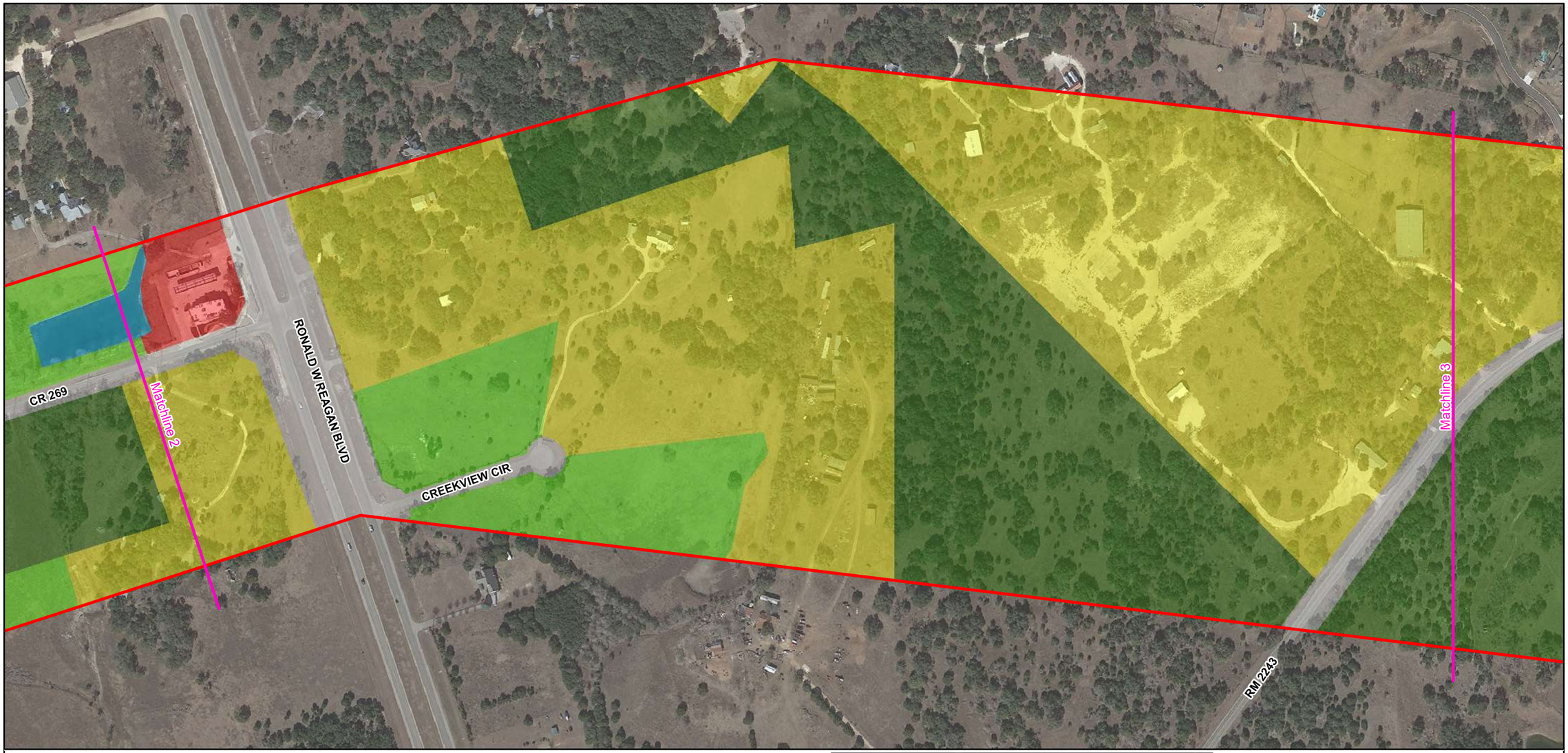


Fig 3.2
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

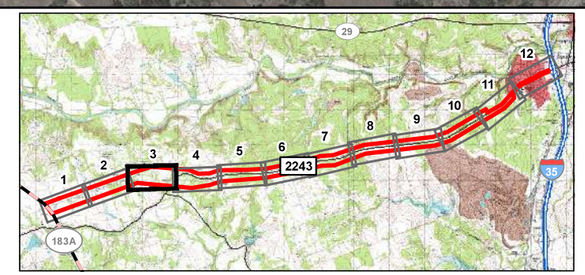
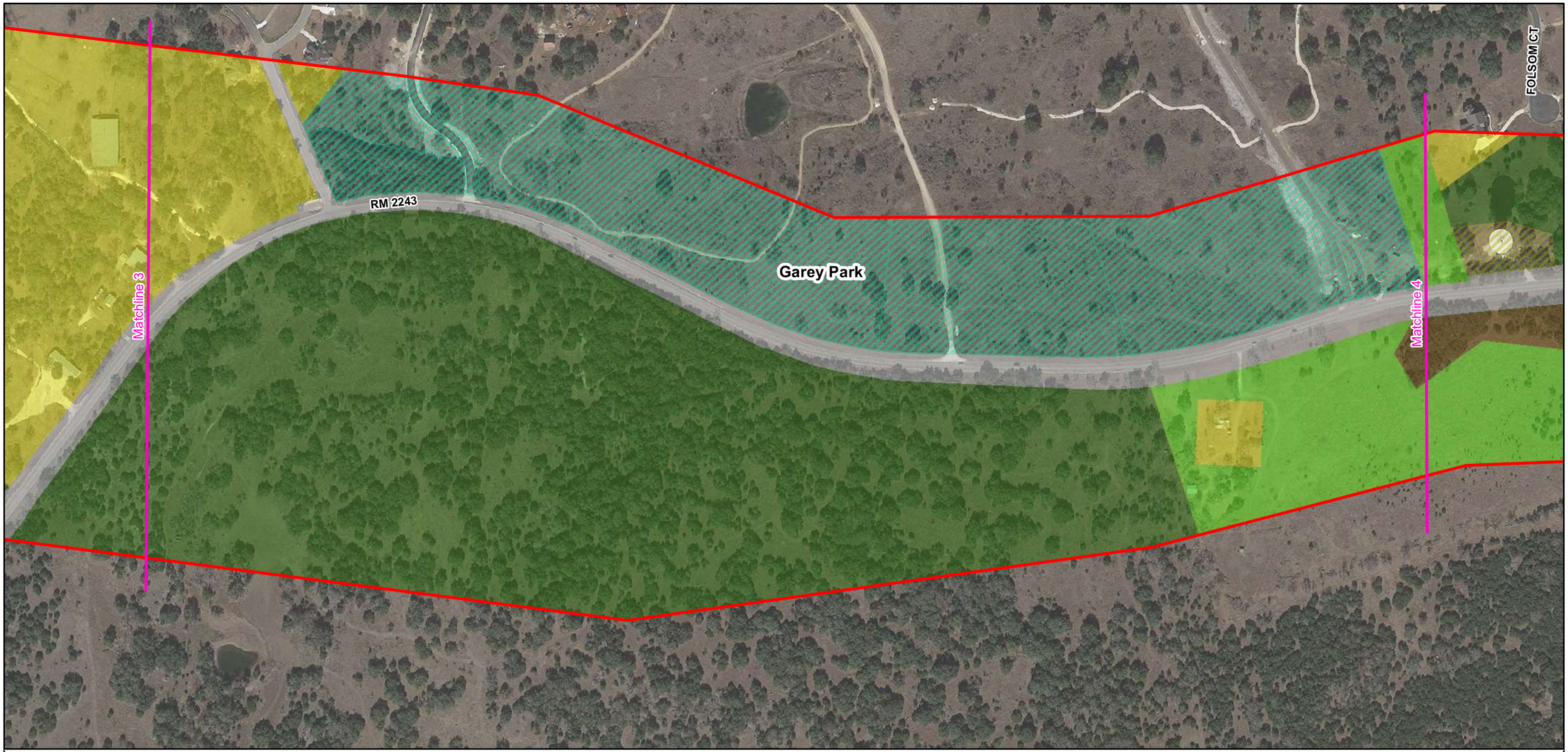


Fig 3.3
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

N W E S

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

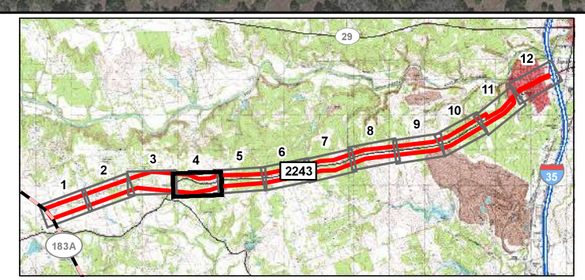
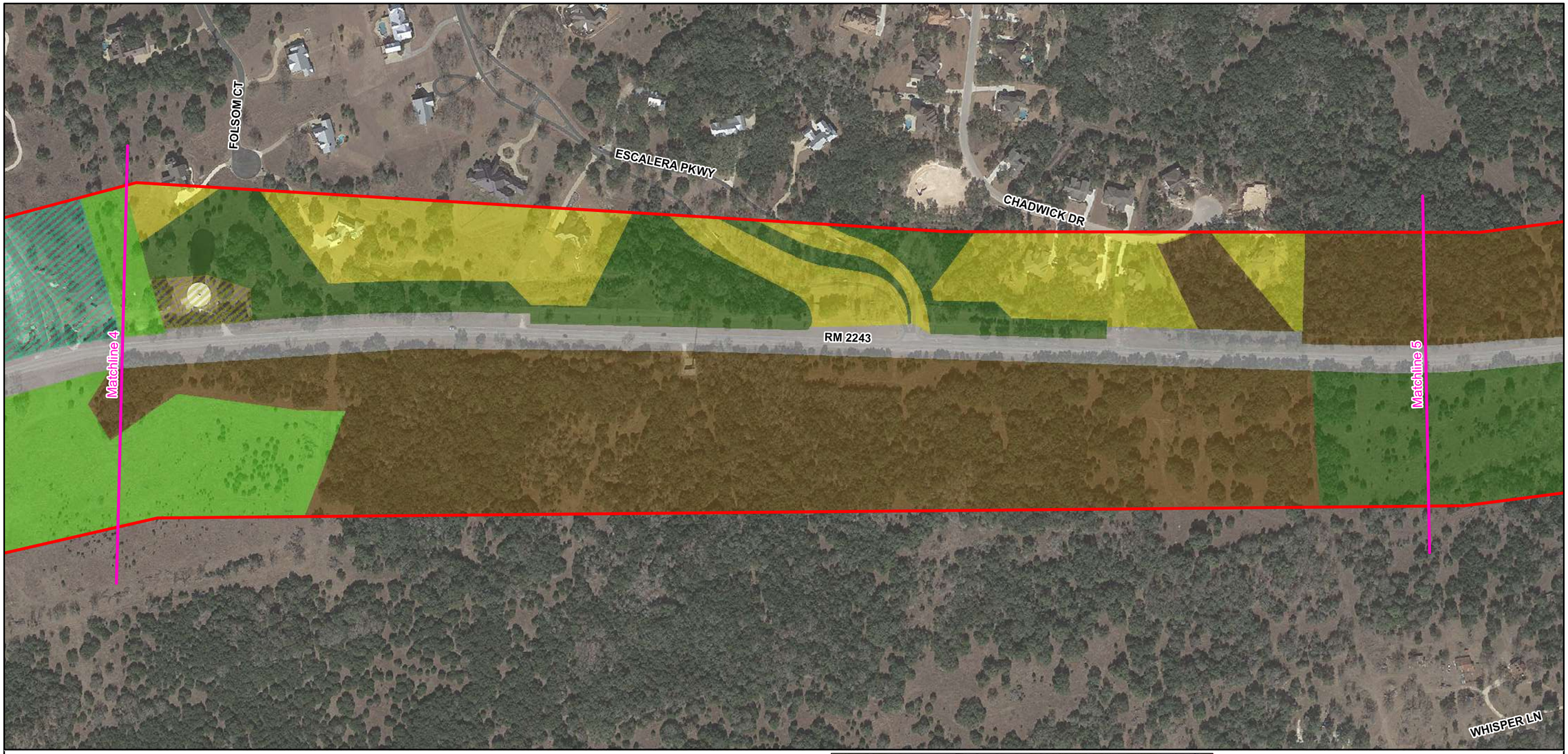


Fig 3.4
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

N W E S

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

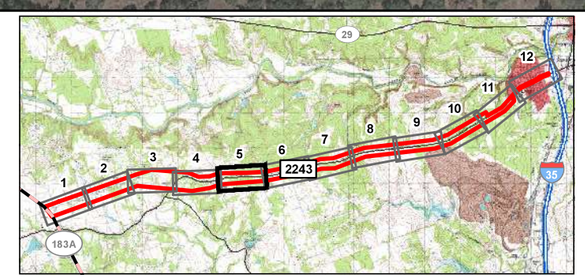
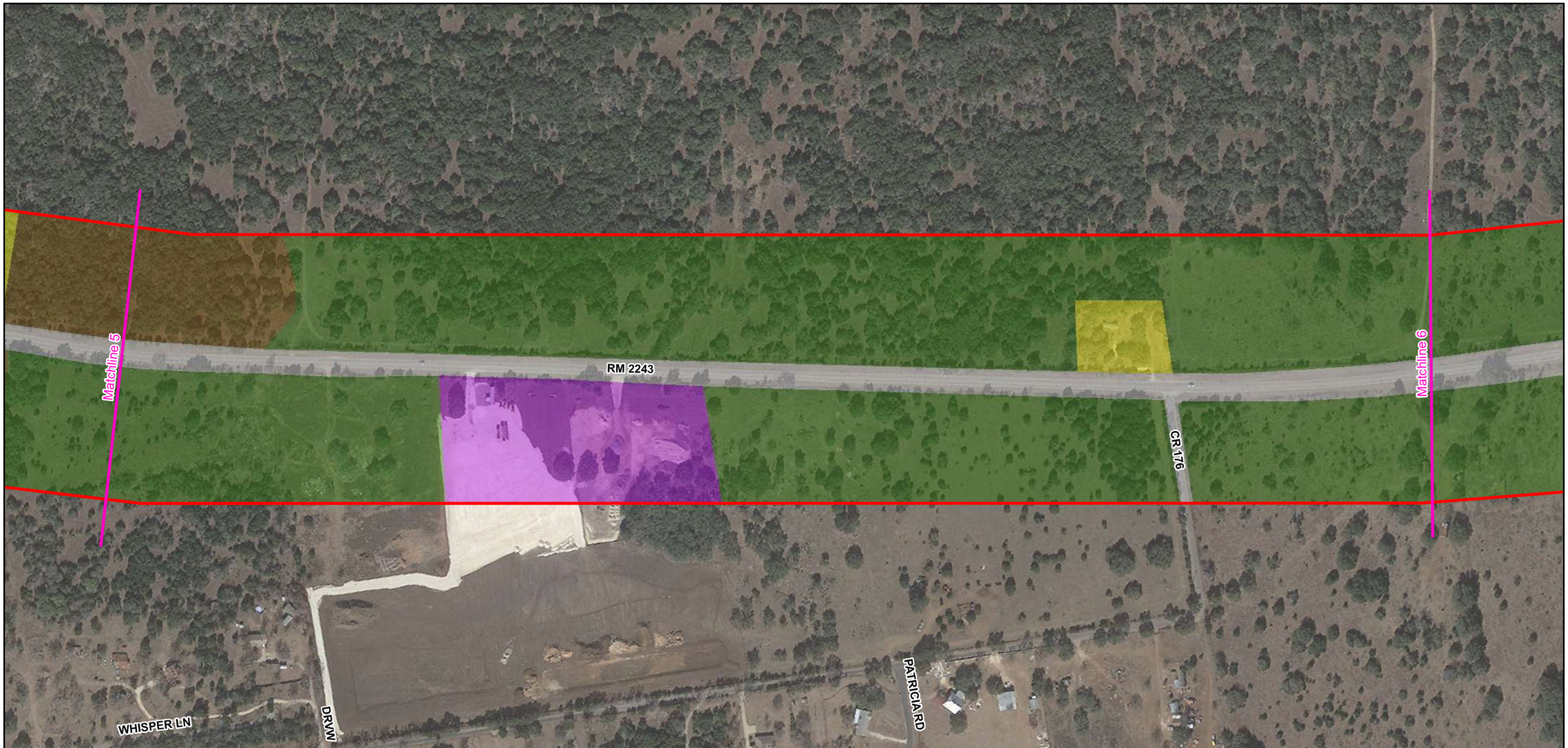


Fig 3.5
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450
Feet

Base Map: 2018 Google Imagery

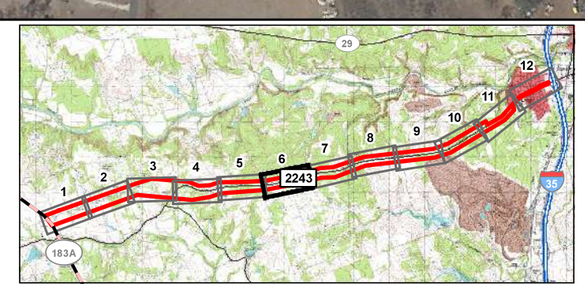
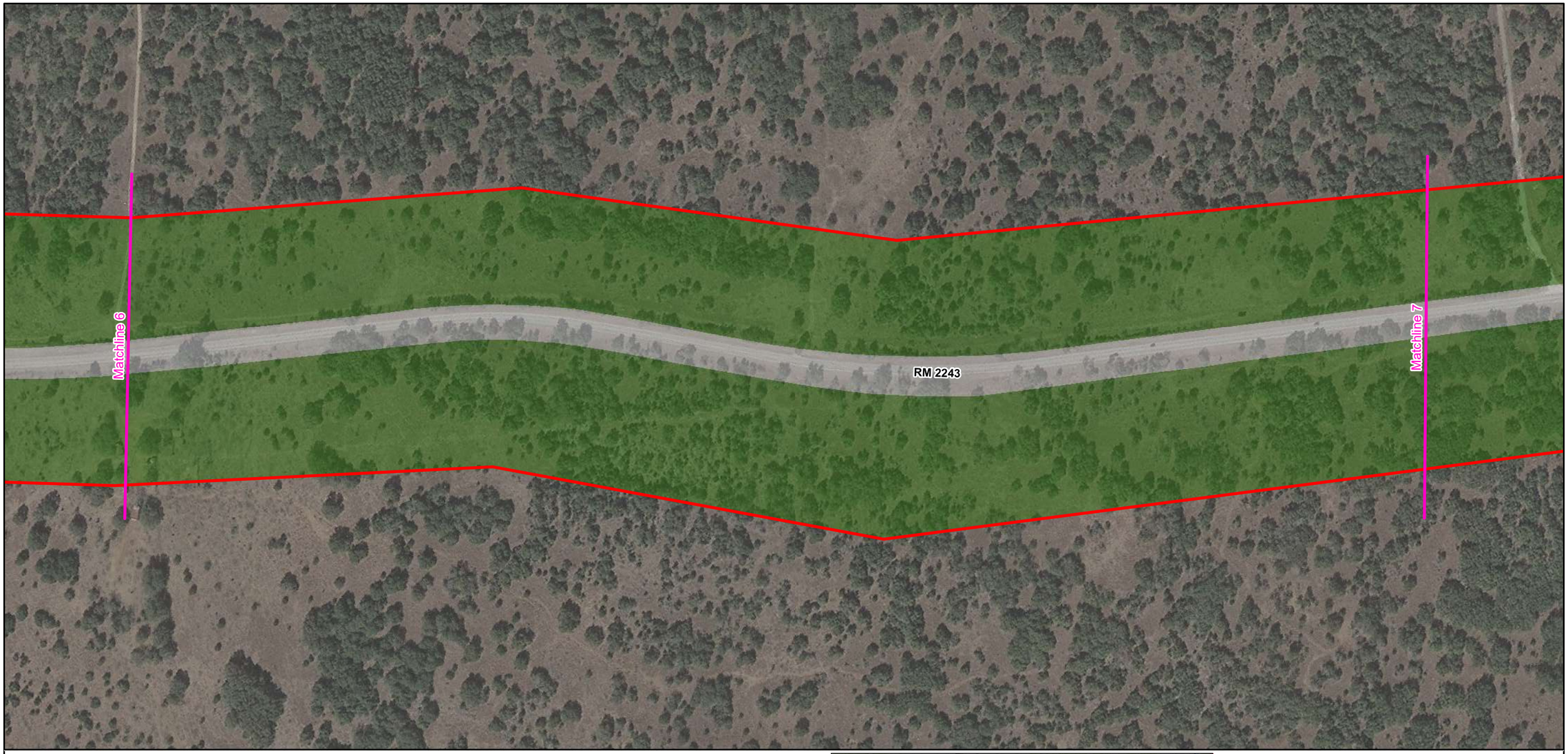


Fig 3.6
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

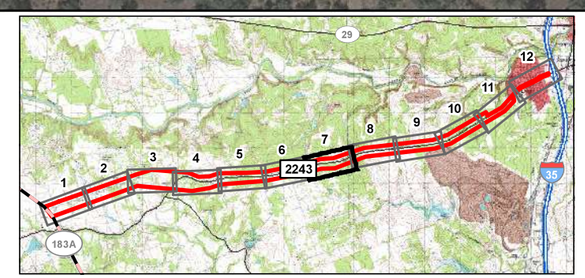
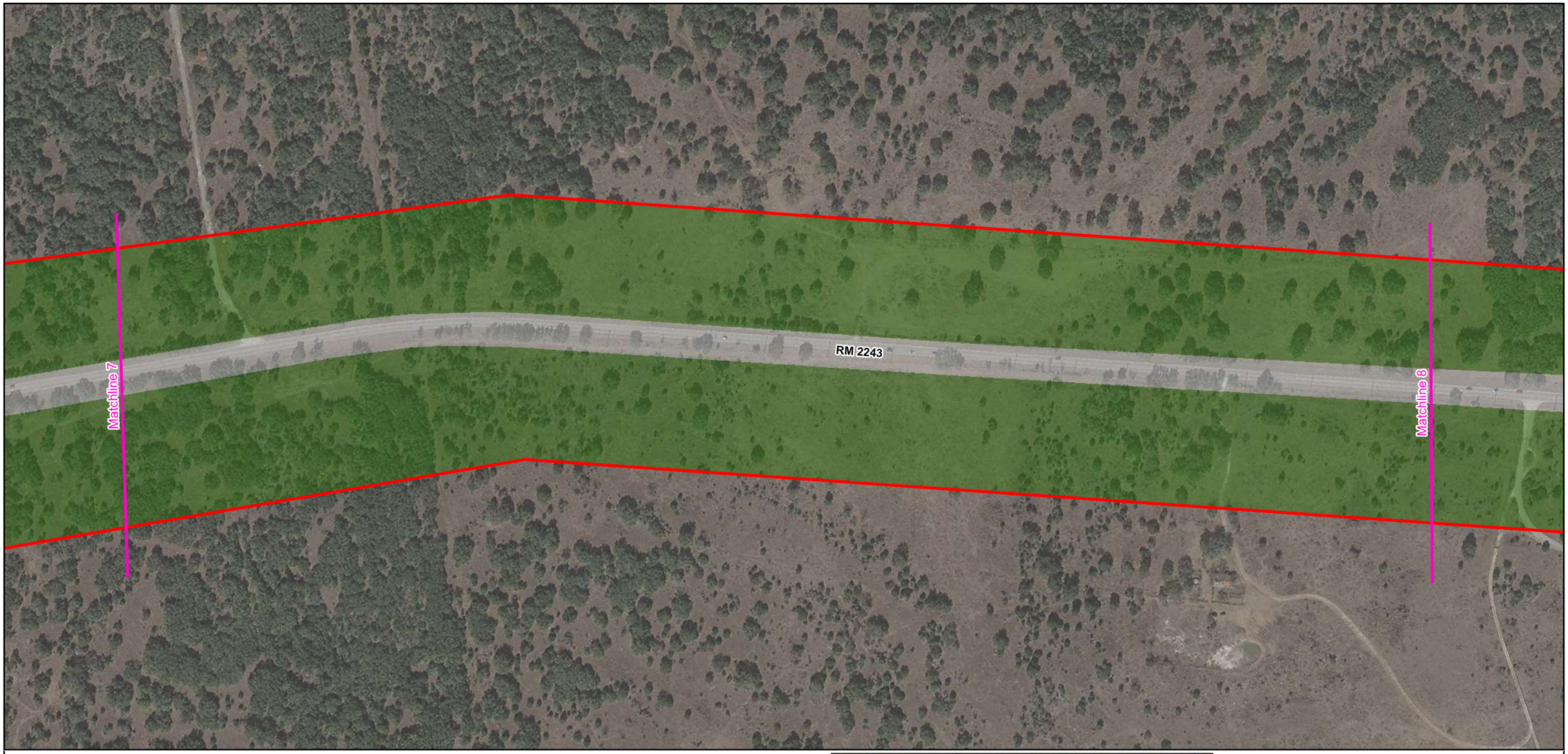


Fig 3.7
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

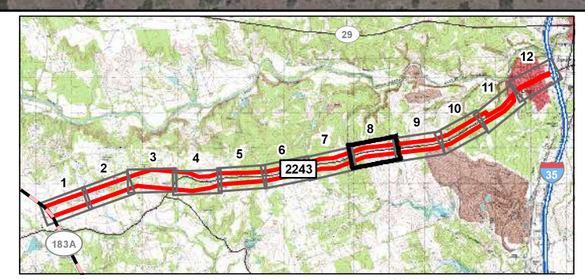
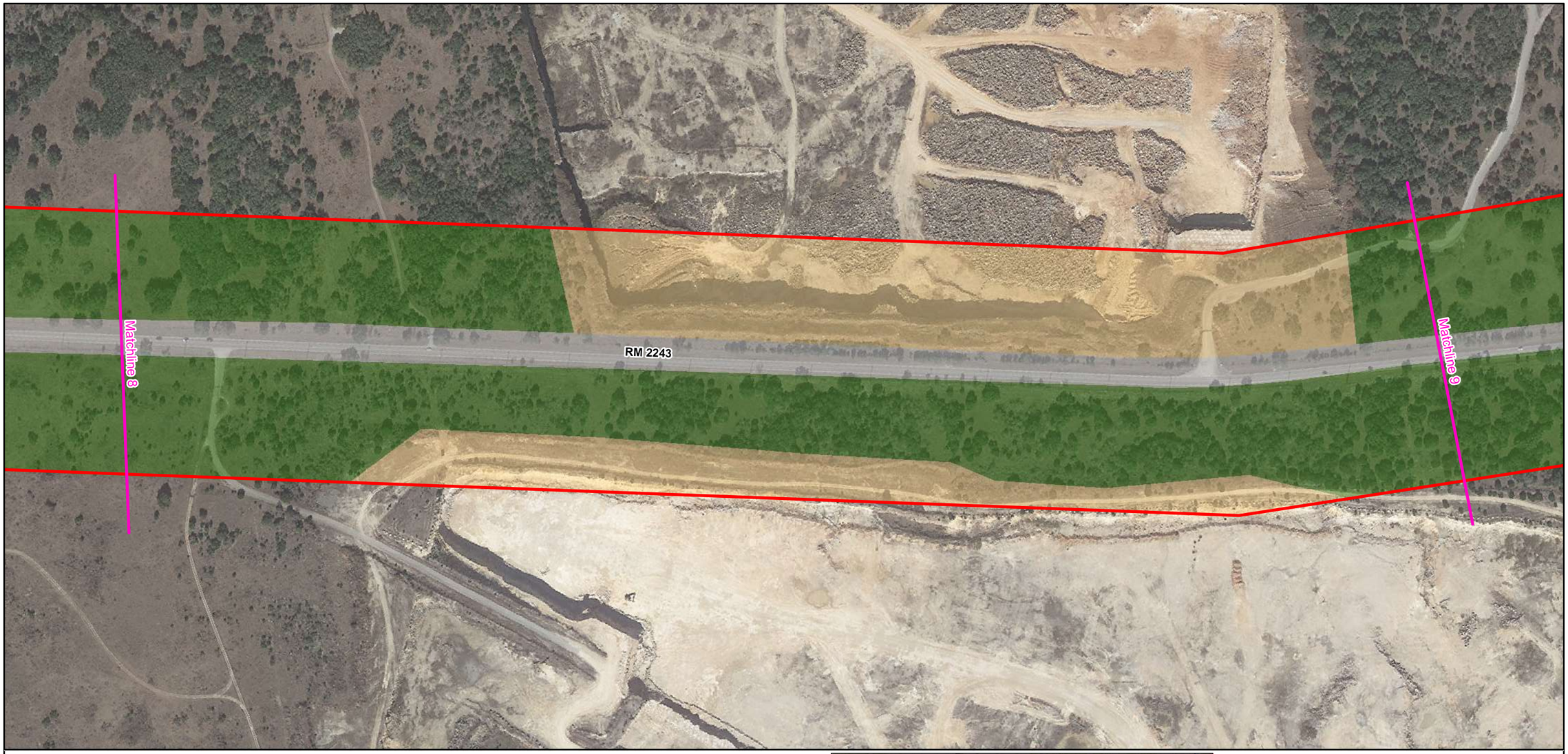


Fig 3.8
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

N W E S

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

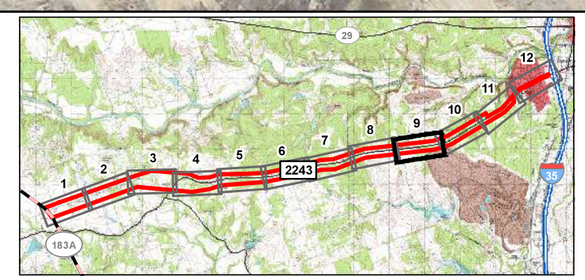
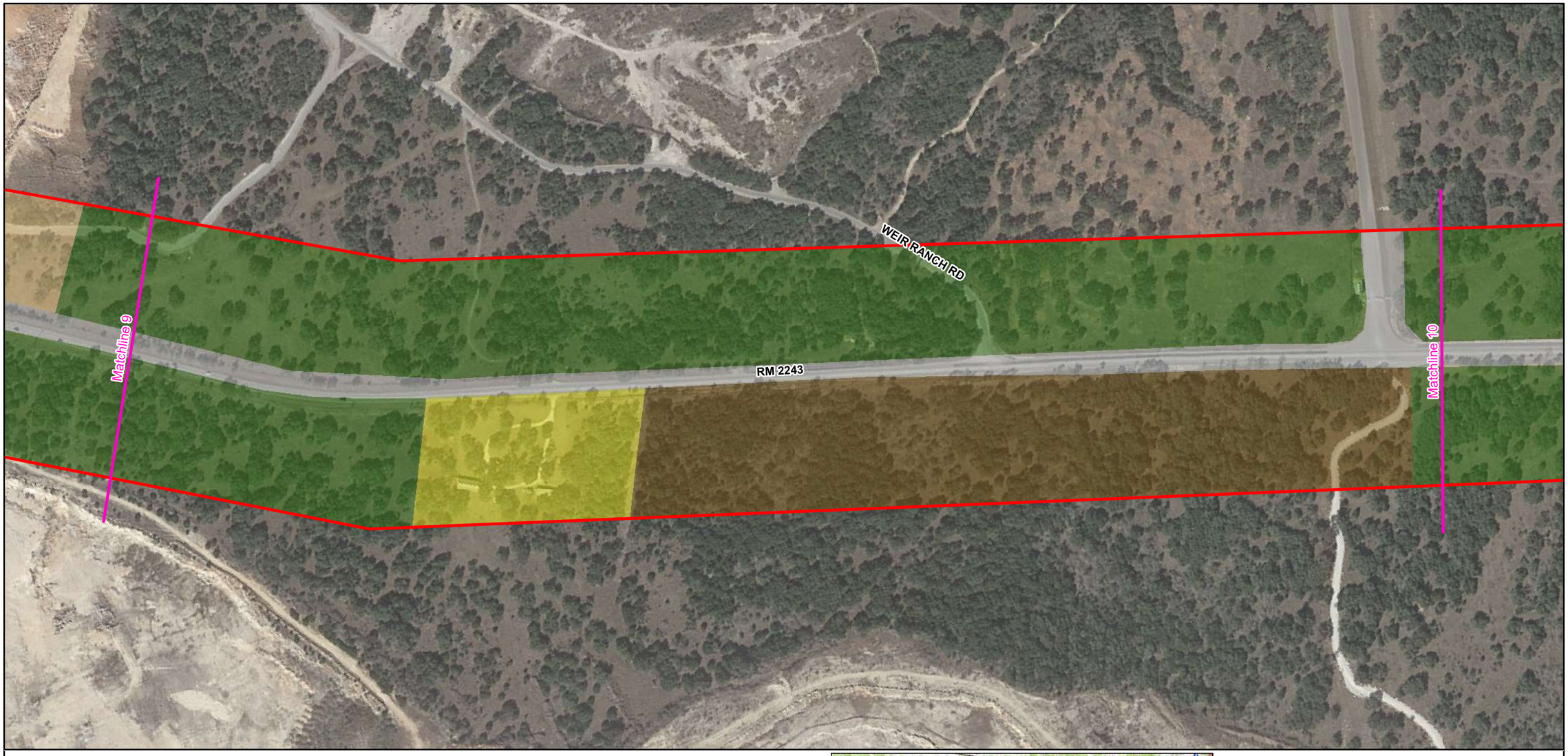


Fig 3.9
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

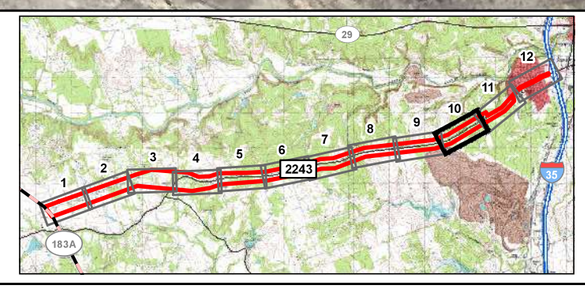
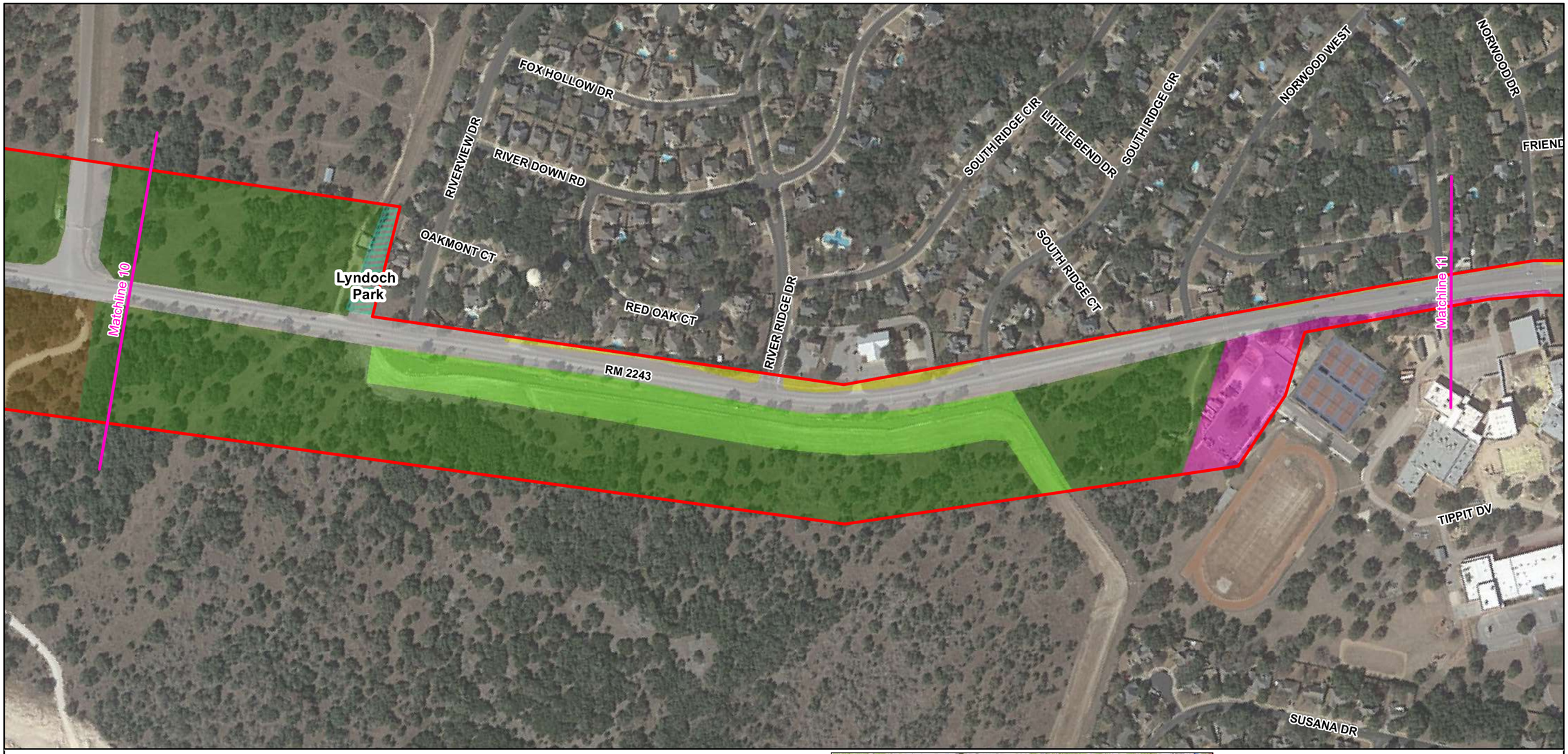


Fig 3.10
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450
Feet

Base Map: 2018 Google Imagery

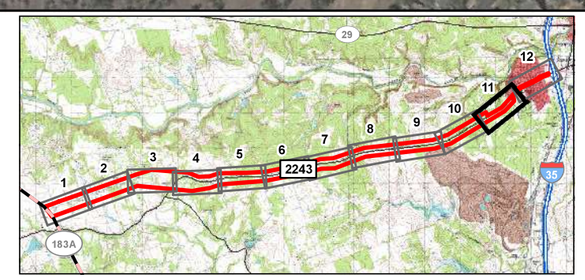
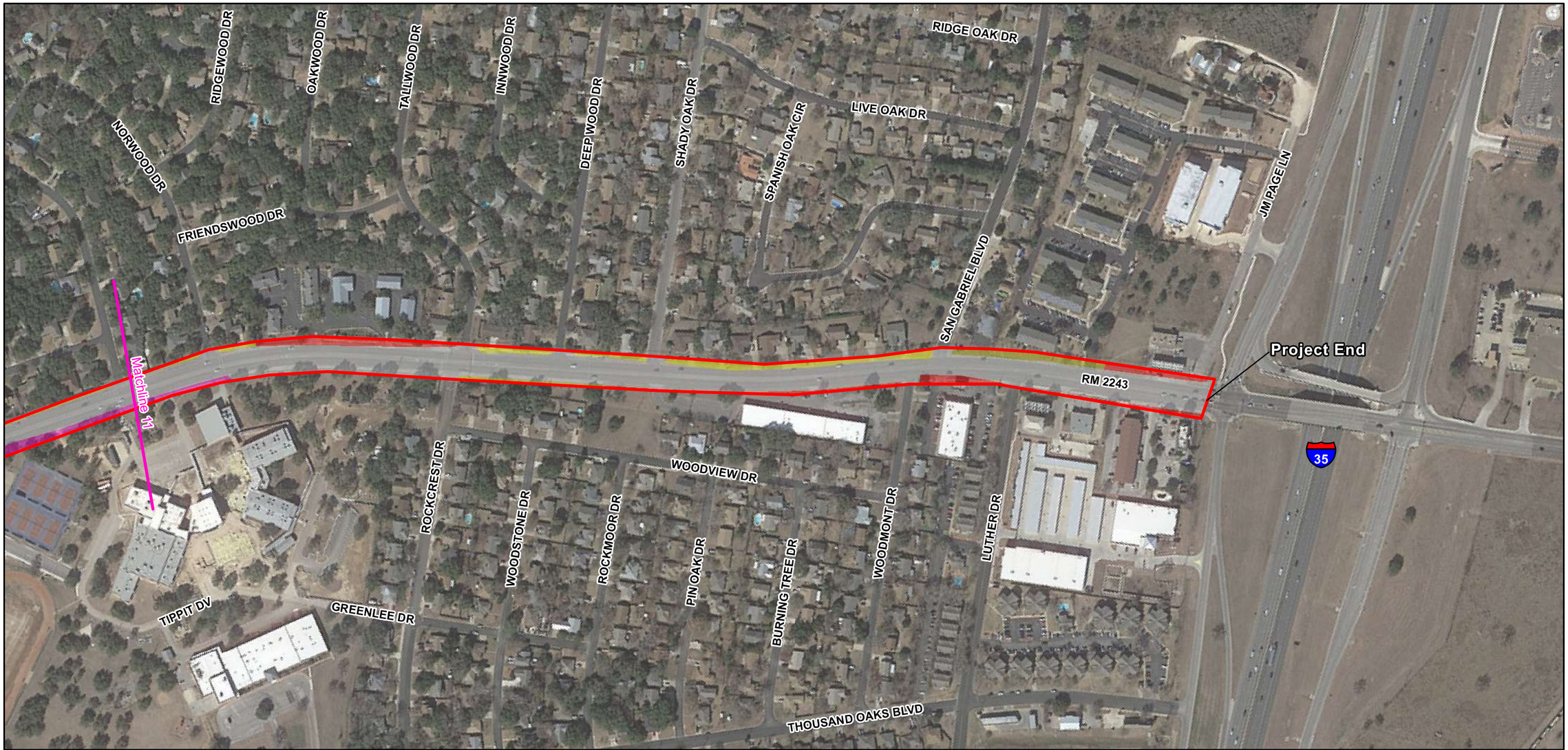


Fig 3.11
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032



Study Area

Land Use/Land Cover

- Commercial
- Grassland
- Industrial
- Mine/Quarry
- Multi-Family Residential
- Park
- Residential
- School
- Shrubland
- Transportation
- Utility
- Water
- Woodland

1:4,000

0 112.5 225 450

Feet

Base Map: 2018 Google Imagery

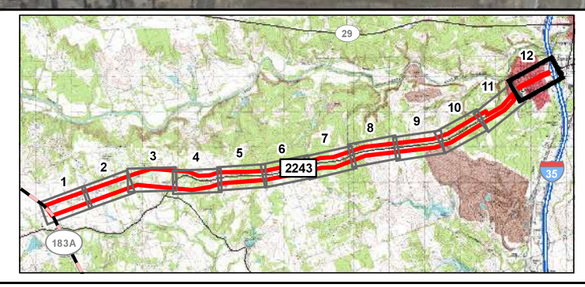


Fig 3.12
Land Use/Land Cover
RM 2243 from 183A to IH 35
Williamson County, Texas
CSJ: 2103-01-032

Appendix B

Project Schematic

Texas Department of Transportation

KCI KENNEDY CONSULTING
A JMT Company
TBPE REG. NO. F-926

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
KCI KENNEDY CONSULTING
JMT CONSULTING ENGINEERS INC DBA JMT CONSULTING
ENGINEER: WALTER J. MUNOZ
P.E. No. 125761 DATE: 10/29/2025

PRELIMINARY
SUBJECT TO CHANGE

LEGEND
- PARCELS
- PROPOSED ROW
- EXISTING ROW
- ETJ LINE
- REMOVAL
- BRIDGE
- SIDEWALK/SUP
- URBAN SECTION
- FRONTAGE ROAD
- RAMPS
- MAINLANE
- EXISTING ROADWAY
- DIRECT CONNECTOR
- DIRECT CONNECTOR

MATCHLINE 13+15+00

MATCHLINE 13+40+00

PRELIMINARY
SUBJECT TO CHANGE

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
KCI KENNEDY CONSULTING
JMT CONSULTING ENGINEERS INC DBA JMT CONSULTING
ENGINEER: WALTER J. MUNOZ
P.E. No. 125761 DATE: 10/29/2025

KCI KENNEDY CONSULTING
A JMT Company
TBPE REG. NO. F-926

Texas Department of Transportation

Texas Department of Transportation
KENNEDY CONSULTING
205 E. UNIVERSITY AVENUE, SUITE 450, GEORGETOWN, TX 78626, 512-864-2833
A JMT Company
TBPE REG. NO. F-926
PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
KENNEDY CONSULTING
A JMT Company TBPE REG. # F-926
ENGINEER MATTHEW J. WERNER
P.E. NO. 107847 DATE 11/29/2018
PRELIMINARY
SUBJECT TO CHANGE
MATCHLINE STA 340+00
MATCHLINE STA 471+00
LEGEND
PARCELS
PROPOSED ROW
EXISTING ROW
ETJ LINE
REMOVAL
BRIDGE
SIDEWALK/SUP
URBAN SECTION
FRONTAGE ROAD
RAMPS
MAINLANE
EXISTING ROADWAY
DIRECT CONNECTOR
DIRECT CONNECTOR