

# Induced Growth Analysis

# 183A Toll Road, Phase III

Austin District From Hero Way to 1.1 miles north of State Highway 29 CSJ Number: 0914-05-192 Williamson County, Texas

February 2019

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

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#### Acronyms

AASHTO American Association of State Highway and Transportation Officials

ACC Austin Community College

AOI Area of Influence

CEQ Council on Environmental Quality
CFR Code of Federal Regulations

CR County Road

CTRMA Central Texas Regional Mobility Authority

ETJ Extraterritorial jurisdiction FM Farm-to-Market Road

mph mile per hour

NCHRP National Cooperative Highway Research Program

NEPA National Environmental Policy Act

RM Ranch-to-Market Road

ROW Right-of-way

TWC Texas Workforce Commission
TWDB Texas Water Development Board
TxDOT Texas Department of Transportation
WCAD Williamson County Appraisal District

## 1 Project Overview

The Central Texas Regional Mobility Authority (CTRMA) and Texas Department of Transportation (TxDOT) propose the extension of the 183A Toll Road main lanes from Hero Way in Leander, Williamson County, Texas, to State Highway (SH) 29 in Liberty Hill, Williamson County, Texas. The current proposed project is the third phase of the CTRMA planned 183A Toll project. Phase I of the 183A Toll initiative developed and constructed approximately 11.6 miles of the tolled facility from Ranch-to-Market Road (RM) 620 in northwest Austin to New Hope Drive in Cedar Park, and approximately 7.5 miles of non-tolled frontage roads from RM 1431 to the South Fork San Gabriel River. Phase I opened to traffic in March 2007. Phase II of the 183A Toll initiative extended the tolled main lanes approximately five miles north from RM 1431 to Hero Way and extended the toll roads to SH 29. Phase II opened in April 2012. The currently proposed 183A Toll Phase III project extends the tolled main lanes from Hero Way to SH 29 and extends the frontage roads to 1.1 miles north of SH 29. The overall proposed Phase III project length is 6.6 miles.

This report assesses the potential for the proposed project to induce growth and development. Since CTRMA anticipates financial support from the US Department of Transportation for the proposed project, this analysis is compliant with the National Environmental Policy Act (NEPA) (23 Code of Federal Regulations [CFR] 771) and TxDOT guidance provided by the Environmental Compliance Toolkits.

## 1.1 Existing Facility

Within the project limits, the current six-lane 183A tolled main lanes terminate approximately 0.4 mile north of Hero Way, where they merge with the existing non-tolled, four-lane, divided 183A frontage roads. The 183A four-lane divided roadway continues north for 1.4 miles to its intersection with US 183 at Bryson Ridge Trail. From this intersection—which is the current northern terminus of existing 183A—heading north, the existing four-lane divided roadway within the project limits is US 183.

From the terminus of the 183A main lanes to SH 29, the existing facility (183A frontage roads and US 183) continues north as a four-lane divided roadway comprised of two 12-foot-wide general purpose lanes in each direction, with 10-foot-wide outside shoulders, four-foot-wide inside shoulders, at-grade intersections, and open-ditch drainage. Lanes are divided by a median typically over 250 feet wide, which was preserved to allow for the currently proposed potential extension of the 183A main lanes, and consists mostly of grassy vegetation, some trees, and drainage features. Left-turn and right-turn bays are present at major arterial intersections and turnarounds are already in place at the intersections with San Gabriel Parkway, US 183/Bryson Ridge Trail, and SH 29. The existing facility traverses the South Fork San Gabriel River via bridges, and multiple box culverts provide crossings over three tributaries to the river. North of SH 29 to the projects northern terminus, the existing facility transitions to an undivided facility with two 10-foot-wide travel lanes in each direction, a 15-foot-wide center left-turn lane, six-foot-wide shoulders, at-grade intersections, and open-ditch drainage.

## 1.2 Proposed Project

The proposed action (Build Alternative) would extend the six-lane, controlled-access, grade-separated 183A tolled main lanes from their current terminus approximately 0.4 mile north of Hero Way to approximately 0.4 mile north of SH 29. The 183A tolled main lanes would be located in the median between the existing northbound and southbound US 183 four-lane divided roadway. The existing US 183 four-lane divided roadway within the proposed project limits would serve as frontage roads north to SH 29, and transition back to the existing, undivided US 183 approximately 1.1 miles north of SH 29. This transition would allow the 183A tolled main lanes to merge with the proposed non-tolled, four-lane, divided frontage roads and, eventually, with the existing four-lane, non-divided US 183 at the project's northern terminus. Project design would include bridges over the South Fork San Gabriel River and multiple box culverts providing for tributary streamflow. A paved, 10-foot-wide pedestrian/bicycle shared use path would be provided within existing ROW along the west side of the project from Hero Way to the Seward Junction Loop South (approximately 4.6 mi.).

The proposed 183A main lanes would include three 12-foot-wide lanes in each direction, with 10-foot-wide paved shoulders and a 38-foot wide grassy median. The main travel lanes would be tolled as an extension of the existing 183A tollway currently in place south of Hero Way. As previously noted, the existing US 183 facility would serve as frontage roads and, along with the existing 183A frontage roads between Hero Way and US 183, would remain in use as a non-tolled facility. The transition from the 183A main lanes to existing US 183 north of SH 29 would comprise two 12-foot-wide lanes, divided, in each direction, with 10-foot-wide outside shoulders and 4-foot-wide inside shoulders. The 183A main lanes would be depressed under SH 29 and elevated over intersections with:

- Seward Junction South (planned facility);
- Whitewing Drive/Larkspur Park Drive;
- South Gabriel Drive/Green Valley Drive (South Fork San Gabriel River bridge);
- US 183/Bryson Ridge Trail; and
- San Gabriel Parkway.

The existing main lanes are already elevated over Hero Way. The proposed divided US 183 section north of SH 29 would have an at-grade intersection at CR 213/258 with turnarounds in each direction.

Most of the proposed Build Alternative would be constructed within the existing ROW of 183A and US 183. The existing ROW comprises approximately 338 acres and is typically 400 feet wide. Approximately 19.3 acres of additional ROW are proposed to provide sufficient area for constructing the transition of US 183 from a divided to an undivided facility for approximately 1.1 miles north of SH 29.

## 2 Induced Development and Indirect Impacts

The Council on Environmental Quality (CEQ) regulations define indirect effects as those "...which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other

effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8[b]).

The indirect impacts analysis for the proposed project is based on TxDOT's 2016 Guidance: Indirect Impacts Analysis (TxDOT 2016) and supporting TxDOT resources on preparing indirect and cumulative impacts analyses. Additional guidance was derived from the National Cooperative Highway Research Program (NCHRP) Report 466 entitled Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (NCHRP 2002); the NCHRP Project 25-25, Task 22 report entitled Forecasting Indirect Land Use Effects of Transportation Projects (NCHRP 2007); and the American Association of State Highway and Transportation Officials (AASHTO) Practitioner's Handbook on Assessing Indirect Effects and Cumulative Impacts under NEPA (AASHTO 2011).

In accordance with TxDOT guidance, this indirect effects analysis focuses on the potential of the proposed project to induce growth based on the nature of the proposed improvements and the population, land use, and economic trends of the surrounding area. Encroachment-alteration indirect impact effects are also considered a type of indirect impact. These effects are described as effects "...that alter the behavior and functioning of the physical environment are related to project design features but are indirect in nature because they can be separated from the project in time or distance (NCHRP 2002)". TxDOT considers encroachment-alteration effects as being more closely related to direct impacts. These impacts are addressed in the specific resource and subject matter technical reports and/or the Environmental Assessment. Therefore, this analysis focuses specifically on the potential of the proposed project to induce growth, along with effects related to potential induced growth.

The induced growth analysis for this project follows the TxDOT Indirect Impacts Analysis Guidance (2016). The process involves six steps noted below.

- 1. Define the methodology
- 2. Define the Area of Influence (AOI) and study timeframe
- 3. Identify areas subject to induced growth in the AOI
- 4. Determine if growth is likely to occur in the induced growth areas
- 5. Identify resources subject to induced growth impacts
- 6. Identify mitigation, if applicable

The following sections discuss the steps used in the analysis and document the outcome as it relates to the current proposed project. These sections of the report lay out the likelihood of the proposed project inducing growth within the AOI and any impacts and mitigation. Overall, this report discusses the steps used in the analysis and documents the outcome for the proposed project.

## 2.1 Step 1: Methodology

This report utilizes three methods for determining potential induced growth impacts from the proposed project. The methods include:

- Planning Judgment, a technique relying on "experience, professional literature, data collected from knowledgeable persons, and assessment of local conditions – trends and forecasts – to make judgments about impacts" (TxDOT 2016).
- Cartographic Techniques, which overlays aerial imagery, geographic and planning data, information obtained from windshield surveys to identify developable and undevelopable areas.

## 2.2 Step 2: Area of Influence and Study Timeframe

The AOI includes the proposed project area and surrounding areas that could be influenced by the project and can be delineated using political or geographical boundaries. For the proposed project, major parallel roadways and the North Fork San Gabriel River were identified as boundaries for the AOI (Figure 1). The eastern and western boundaries of the AOI were identified as major parallel roadways from which improvements to US 183/183A could likely draw travelers. These roadways are North Bagdad Road, CR 279, and CR 200 to the east and Ronald Reagan Boulevard to the west. The southern boundary was identified as Hero Way since the roadway marks the southern extent of proposed improvements with travelers south of this location being unlikely to access 183A farther to the north. The northern boundary was identified as FM 3405 and the North Fork San Gabriel River since development north of this area is growing at a slower pace than communities to the south, likely because of current access to I-35 provided by FM 3405 via RM 2338/Williams Drive and the natural boundary provided by the North Fork San Gabriel River. Other major roadways within the AOI include RM 1869, SH 29, and FM 3405.

Area of Influence (AOI) for Induced Growth Impacts 183A Phase III - From Hero Way to 1.1 miles north of SH 29 30 60 Miles CSJ No 0914-05-192 Project Location BURNET WILLIAMSON TRAVIS BASTROP HAYS CALDWEL Legend Freshwater Pond 100 Year Flood Zone 183 Sources: Texas Historical Commission (cemeteries); US Fish and Wildlife Service National Wetlands Inventory; National Hydrography Dataset; Federal Emergency Management Agency National Flood Hazard Layer; City of Austin (parks, roads); Capital Area Council of Governments (city limits); Williamson County (county limits); Texas Department of Transportation Roadway Inventory

Figure 1. Area of Influence for 183A Phase III

The study timeframe is from 2020, which is the project letting year, to 2040, which was chosen because it is the transportation horizon year for the current version of the Capital Area Metropolitan Planning Organization's Metropolitan Transportation Plan available at the time. In addition, the year 2040 was used for analysis of other resources and traffic projections.

## 2.3 Step 3: Areas Subject to Induced Growth in the AOI

The next step of the process included determining undevelopable areas. Undevelopable areas were considered those that had existing development, such as residential areas and commercial properties that were unlikely to be redeveloped, and areas named and identified in conceptual or master plans as developments already under way or planned for future development. In addition, undevelopable areas were also considered areas with social or environmental constraints, including floodplains, parks, cemeteries, and community facilities.

The remaining parcels were potentially developable and found throughout the AOI, particularly in the northern portion of the AOI. The number of developable parcels was limited due to the existing and planned development found throughout. The developable parcels within the AOI were determined by reviewing Williamson County Appraisal District (WCAD) data, 2017 aerial photography, windshield surveys, and interviews with local officials. These parcels mainly consist of large lots used for agricultural purposes or vacant land identified by the WCAD and are shown in **Figures 2 – 5**.

The analysis determined that there are over 300 parcels within the AOI that are potentially developable out of a total of approximately 8,300 parcels. These parcels make up approximately 43 percent of the total acreage within the AOI and were taken through to Step 4 to determine the likelihood of the proposed project inducing growth in these areas.

Parcels Developable and Undevelopable for Induced Growth Impacts 183A Phase III - From Hero Way to 1.1 miles north of SH 29 60 Miles CSJ No. 0914-05-192 AOI Limits Developable Waterbody 100 Year Flood Zone

Figure 2. Developable and Undevelopable Parcels within the AOI

Sources: ESRI (aerial, July 2018); Texas Historical Commission (cemeteries); US Fish and Wildlife Service National Wetlands Inventory; National Hydrography Dataset; Federal Emergency Management Agency National Flood Hazard Layer; City of Austin Parks; Capital Area Council of Governments (city limits); Williamson County (county limits); Texas Department of Transportation Roadway Inventory; Williamson County Appraisal District (parcels)

Parcels Developable and Undevelopable for Induced Growth Impacts 183A Phase III - From Hero Way to 1.1 miles north of SH 29 60 Miles CSJ No. 0914-05-192 AOI Limits Developable Waterbody 100 Year Flood Zone

Figure 3. Developable and Undevelopable Parcels within the AOI (continued)

Sources: ESRI (aerial, July 2018); Texas Historical Commission (cemeteries); US Fish and Wildlife Service National Wetlands Inventory; National Hydrography Dataset; Federal Emergency Management Agency National Flood Hazard Layer; City of Austin Parks; Capital Area Council of Governments (city limits); Williamson County (county limits); Texas Department of Transportation Roadway Inventory; Williamson County Appraisal District (parcels)

Parcels Developable and Undevelopable for Induced Growth Impacts 183A Phase III - From Hero Way to 1.1 miles north of SH 29 60 Miles CSJ No. 0914-05-192 AOI Limits Developable Waterbody 100 Year Flood Zone

Figure 4. Developable and Undevelopable Parcels within the AOI (continued)

Sources: ESRI (aerial, July 2018); Texas Historical Commission (cemeteries); US Fish and Wildlife Service National Wetlands Inventory; National Hydrography Dataset; Federal Emergency Management Agency National Flood Hazard Layer; City of Austin Parks; Capital Area Council of Governments (city limits); Williamson County (county limits); Texas Department of Transportation Roadway Inventory; Williamson County Appraisal District (parcels)

Parcels Developable and Undevelopable for Induced Growth Impacts 183A Phase III - From Hero Way to 1.1 miles north of SH 29 60 Miles CSJ No. 0914-05-192 AOI Limits Developable Waterbody 100 Year Flood Zone Sources: ESRI (aerial, July 2018); Texas Historical Commission (cemeteries); US Fish and Wildlife Service National Wetlands Inventory; National Hydrography Dataset; Federal Emergency Management Agency National Flood Hazard Layer; City of Austin Parks; Capital Area Council of Governments (city limits); Williamson County (county limits); Texas Department of Transportation Roadway Inventory; Williamson County Appraisal District (parcels)

Figure 5. Developable and Undevelopable Parcels within the AOI (continued)

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#### 2.4 Step 4: Likelihood of Development in Identified Areas

Regional trends, particularly population, employment, and development trends, can help determine the likelihood of development occurring in an area. If population and employment are growing at a local and regional level, then development can generally be assumed to continue in an area. The rate of growth and future projections aid in the determination of an individual project's influence on that growth. For instance, a larger project at the urban fringe would have a higher influence on growth than a smaller project surrounded by urban development. Additionally, if a city and the region are experiencing tremendous growth, continued development would likely be influenced more by other factors (e.g. major employers, low cost of living, etc.) than a single, smaller transportation project. With that understanding, it can be reasoned that the induced growth influence of a single transportation project in an area of high growth would be more localized, such as affecting adjacent parcels, or having no effect at all.

To determine if established development patterns outweigh the ability of the currently proposed 183A/US 183 corridor transportation improvement to induce new development in the AOI, local planners were consulted to provide input on the project's potential influence on growth within the AOI (Section 2.4.1). In addition, regional population, employment and land development trends were analyzed (Section 2.4.2) to supplement the information and assessments provided by local planners.

#### 2.4.1 Local Planner Interviews

In an interview with the Liberty Hill Director of Planning, Sally McFeron, in March 2018, the Director indicated that Liberty Hill is rapidly growing, as evidenced in the large increase in building permits issued in 2017 and early 2018. She also noted that the city's corporate limits were expanding to accommodate its rapid growth and that several commercial and residential developments were slated for development. The Director indicated that growth was anticipated to occur with or without the proposed project, although a No Build scenario could slow growth due to the ultimate degradation of traffic along US 183. Additionally, the potentially developable parcels within and near Liberty Hill could be more attractive to new residents due to the anticipated travel time savings. The attractiveness would be due to the proposed project making traveling to and from Liberty Hill to employment and entertainment hubs, such as The Domain and downtown Austin, seem closer due to increased mobility. Although the Liberty Hill Director of Planning speculated that the proposed project may make the area north of the project more attractive, the current rapid growth rate makes it difficult to "reasonably assume" that any growth can be directly attributed to the proposed project.

An additional interview was conducted with City of Leander staff. The interview, held in June 2018, included Michael Lafferty, Engineer; Wayne Watts, City Engineer; and Terry Crauford, Assistant City Engineer. The staff noted that induced development occurred with the construction of the frontage roads along US 183, but they did not anticipate that the proposed project would be likely to induce further development in Leander. The city staff all agreed that the main function of the proposed project would be for drivers to "pass through" the area, limiting its impact on induced growth. In addition, there were few developable parcels identified within and surrounding Leander that could experience induced development due to

the proposed project. Furthermore, the Leander planners concluded that it is reasonable to assume that if there were any induced growth within the AOI, it would likely be attributed to the construction of the existing four-lane divided roadway that opened in 2012.

#### 2.4.2 Regional Trends

Williamson County and the cities of Cedar Park, Liberty Hill, and Leander surround the proposed project area and have experienced unprecedented growth for several years. Williamson County had the second largest county population growth in Texas between 2000 and 2012 and was ranked the 13<sup>th</sup> fastest growing county in the United States between 2000 through 2010. This growth continued after 2010 with Williamson County ranking as the 12<sup>th</sup> fastest growing county between 2010 through 2016. Between 2010 and 2016, the population of the county grew by approximately 25 percent from 422,537 to 528,718, respectively (US Census Bureau, 2018). Projections for Williamson County show a population of 825,127 by 2040, which is an estimated 56 percent increase in population over the next 24 years (Texas Demographic Center, 2014).

Cedar Park, which is south of the proposed project area along the southern part of existing 183A, is the third largest city in the Austin metropolitan area. Population in Cedar Park has grown approximately 33 percent between 2010 through 2016 (US Census Bureau, 2017). Liberty Hill, which is located at the northern extent of the proposed project area, has grown by an estimated 67 percent from 2010 to 2016. Although Liberty Hill's population estimated by the U.S. Census Bureau was 1,619 in 2016 (US Census Bureau, 2017), this estimate did not include the city's extraterritorial jurisdiction (ETJ). The City of Liberty Hill reported that the community had an estimated population of 9,341 in 2015 including its ETJ. Leander, where the majority of the proposed project is located, grew by an estimated 62 percent between 2010 and 2016. Additionally, according to the City of Leander, the city was the fastest growing in the nation from 2014 to 2015 for all cities with a population over 15,000 (US Census Bureau, 2017).

This growth for the three cities near the proposed project area is projected to increase through 2040 as projected by the Texas Water Development Board's (TWDB's) 2021 Regional Water Plan Population Projections. According to TWDB, Cedar Park's population is projected to increase to 90,287, an increase of approximately 31 percent over the 2016 population. Liberty Hill is predicted to see an increase of approximately 44 percent in the same time frame. Leander is projected to have a drastic 271-percent increase with a projected population of 158,728 in 2040 (TWDB, 2018). The anticipated growth is evidenced by the current rural-to-suburban transition within the AOI including the number of planned subdivisions.

In addition to population growth, the Texas Workforce Commission (TWC) anticipates that the Capital Workforce Development Area (Travis County) will experience a 27-percent increase in employment from 716,160 jobs to 906,080 for the period between 2014 and 2024. The Rural Capital Workforce Development Area (Williamson and eight other Central Texas counties) is projected to experience a 26-percent increase from 309,120 to 389,920 jobs between 2014 and 2024. Comparatively, the TWC anticipates the state of Texas to experience a 21-percent increase in the same time frame (TWC, 2018).

In tandem with the population growth in the AOI and employment growth throughout the region, development has also grown and is projected to continue within the AOI and regionally. Review of future land use maps and discussions with local planners indicates that much of the vacant, transitional, or agricultural land available within the AOI is slated for development. **Table 1** is a representative table of some of the larger, locally recognized major planned, under construction, or partially developed developments and facilities within the AOI. This table is not comprehensive and does not include some of the smaller planned, under construction, or partially developed developments in the AOI; however, the table provides a general understanding of the scale of some of the developments and the related facilities.

Table 1. Anticipated Development within the AOI

Development	Description
	City of Leander
Austin Community College (ACC) San Gabriel	100-acre site located west of 183A and north of Hero Way with approximately 106,000 square feet of building floor space planned (and ultimately 16 or more buildings) and enrollment capacity of 2,500 students
St. David's HealthCare Leander Campus	143-bed hospital, a freestanding emergency center, and 350,000 square feet of medical office space (at full build out), located on 52 acres along the west side of SH 183A and north of San Gabriel Parkway
Bryson	Approximately 1,430-lot, planned residential and mixed use development, approximately 15 percent developed, east of project ROW between San Gabriel Parkway and High Gabriel Drive
Deerbrooke	588-lot residential development project located near Bagdad Road and Collaborative Way
Bar W Ranch	1,279 lots near Ronald Reagan Boulevard and SH 29 for a proposed retail center
	City of Liberty Hill
Larkspur	1,500-lot single-family development with a planned Liberty Hill Independent School District elementary school
Abbot Tract	550 single-family residences plus commercial development adjacent to west side of US 183 and north of the Summerlyn development
Orchard Ridge	660 planned, residential lots located east of US 183 and south of SH 29
Stonewall Ranch	Approximately 1,100 residential lots and is located east of US 183 and north of SH 29
Forman Financial Tract	Recently annexed and planned for planned unit development, includes mixed single-family residential (278 units) and retail commercial uses and is located on the east side of US 183

Many of the planned developments within the AOI are large subdivisions. It is anticipated that available parcels surrounding the subdivisions would likely be converted to uses that would service the influx of people in the new homes. These uses include retail, schools, places of worship, and restaurants. In addition, some of the planned developments create employment opportunities, such as the ACC San Gabriel Campus and St. David's HealthCare Leander Campus, that could spur additional commercial development oriented to employees and students.

#### 2.4.3 Determination of the Proposed Project's Influence on Development in Identified Areas

With the rapid regional and local growth in mind, a determination was needed on whether the proposed project had the potential to induce growth on parcels identified as developable within the AOI. As stated in the previous section, the area has been growing at an unprecedented rate and projections show the growth continuing through 2040. This continued community growth is reflected in projected traffic volumes along the 183A/US 183 corridor, necessitating the proposed project to accommodate these forecasted traffic volumes. The projected continued community growth was reinforced by local planners and their conclusion that the current growth trend would continue with or without the proposed project.

In addition to regional trends, induced growth effects are often related to changes in accessibility to an area for transportation projects. As stated in Section 1.2, the proposed project would add tolled main lanes between the existing four-lane divided roadway from Hero Way to one mile north of SH 29. The existing four-lane divided roadway would be maintained as non-tolled frontage roads with access via ramps to the proposed, tolled main lanes. Access from the existing four-lane divided roadway to intersecting roadways and adjacent properties would remain unchanged.

Overall, the project would accommodate projected traffic volumes attributed to the continued community growth and provide limited changes in access and travel patterns compared to current conditions. The current rapid growth rate makes it difficult to "reasonably assume" that any projected growth can be directly attributed to the proposed project. As regional trends and insight from local planners have concluded, the growth trend in the area is projected to continue regardless of whether the current proposed project is completed. Therefore, the current and projected growth and development in the area can be most reasonably attributed solely be to the rapid growth trends in the area.

# 2.5 Step 5: Resource Impacts

The proposed project is not anticipated to cause induced growth within the AOI; therefore, resource impacts are not anticipated.

## 2.6 Step 6: Mitigation

The proposed project is not anticipated to cause induced growth; therefore, mitigation is not proposed.

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