TEXRail Extension Environmental Assessment

November 1, 2021

TRINITY METRO

ENVIRONMENTAL ASSESSMENT

for

TEXRAIL EXTENSION PROJECT

Prepared by:

Federal Transit Administration (FTA)
and
Trinity Metro

_____ _____

Don Koski
Acting Regional Administrator
Federal Transit Administration, Region 6

Date of Approval

_____ _____

Chad Edwards
Vice President of Planning & Development
Trinity Metro

Date of Approval

Project Contact Information:

John Tipton, P.E.
Trinity Metro
801 Cherry Street, Suite 850
Fort Worth, Texas 76102
817-215-8629
Email: John.Tipton@ridetm.org

This page intentionally left blank.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

AA	Alternatives Analysis
ACS	American Community Survey
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
C.F.R.	Code of Federal Regulations
CAA	Clean Air Act
CMAQ	Congestion Mitigation and Air Quality
CO	Carbon monoxide
CWA	Clean Water Act
DART	Dallas Area Rapid Transit
dbA	A-weighted decibels
DEIS	Draft Environmental Impact Statement
DFW Airport	Dallas Fort Worth International Airport
DMU	Diesel Multiple Unit
e.g.	Exempli gratia, for example
E.O.	Executive Order
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMST	Ecological Mapping Systems of Texas
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FWISD	Fort Worth Independent School District
FWWR	Fort Worth & Western Railroad
HAER	Historic American Engineering Record
HOA	Homeowner Association
I	Interstate Highway
i.e.	Id est., in other words
ID	Identification
Ldn	Day-night noise level
Leq	Equivalent sound level
LOD	Limits of Disturbance
LOS	Level of Service
LPA	Locally Preferred Alternative
LPST	Leaking Petroleum Storage Tank
MOA	Memorandum of Agreement
MOS	Minimum Operable Segment
MTP	Metropolitan Transportation Plan
NA	Neighborhood Association
NAAQS	National Ambient Air Quality Standards
NCTCOG	North Central Texas Council of Governments

NEPA	National Environmental Policy Act
No.	Number
NO_x	Nitrogen oxides
NRHP	National Register of Historic Places
NTTA	North Texas Tollway Authority
O_3	Ozone
PA	Public Address
Pb	Lead
PM	Particulate matter
PM_{10}	Particulate Matter of 10 microns or less
$PM_{2.5}$	Particulate Matter 2.5 microns or less
ROW	Right-of-way
SAL	State Antiquities Landmark
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SOP	Standard Operating Procedure
SWPPP	Stormwater Pollution Prevention Plan
T&P	Texas and Pacific
TAC	Texas Administration Code
TASA	Texas Archeological Sites Atlas
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TMC	Turning movement counts
TOD	Transit-Oriented Development
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TRE	Trinity Railway Express
TX	Texas
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
U.S.	United States
UPRR	Union Pacific Railroad
USCB	United States Census Bureau
USFWS	United States Fish and Wildlife Service
VCP	Voluntary Clean-up Program
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

1.0 PROJECT BACKGROUND, PURPOSE OF AND NEED FOR ACTION

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential natural, cultural, and socioeconomic effects that may result from the proposed TEXRail Extension Project in Tarrant County, Texas (TX). Trinity Metro is the Project sponsor and the Federal Transit Administration (FTA) is the lead federal agency. A list of preparers of this EA is provided in **Appendix A**.

This EA has also been prepared in accordance with FTA's 2019 *Standard Operating Procedures for Managing the Environmental Review Process*. Per the Standard Operating Procedures (SOPs), EAs are concise public documents that include brief discussions of the need for the proposal, alternatives, environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted. Consistent with the FTA SOPs, data and supporting studies which support the analyses and findings summarized in this EA are provided in **Appendix B: Environmental Resource Technical Reports**.

1.1 Project Location

The TEXRail Extension Project is located within the City of Fort Worth and would extend commuter rail service from the Fort Worth Texas & Pacific (T&P) Station to the proposed Near Southside Station as illustrated on **Figure 1**. This extension project is part of the Locally Preferred Alternative (LPA) as a result of the Alternative Analysis (AA) performed for the 2014 Environmental Impact Statement (EIS) for the Southwest-to-Northeast Rail Corridor, now known as TEXRail (see **Section 1.3, Project Background**). TEXRail began operations in January 2019 and currently provides commuter rail service between Downtown Fort Worth and the Dallas Fort Worth International Airport (DFW Airport).

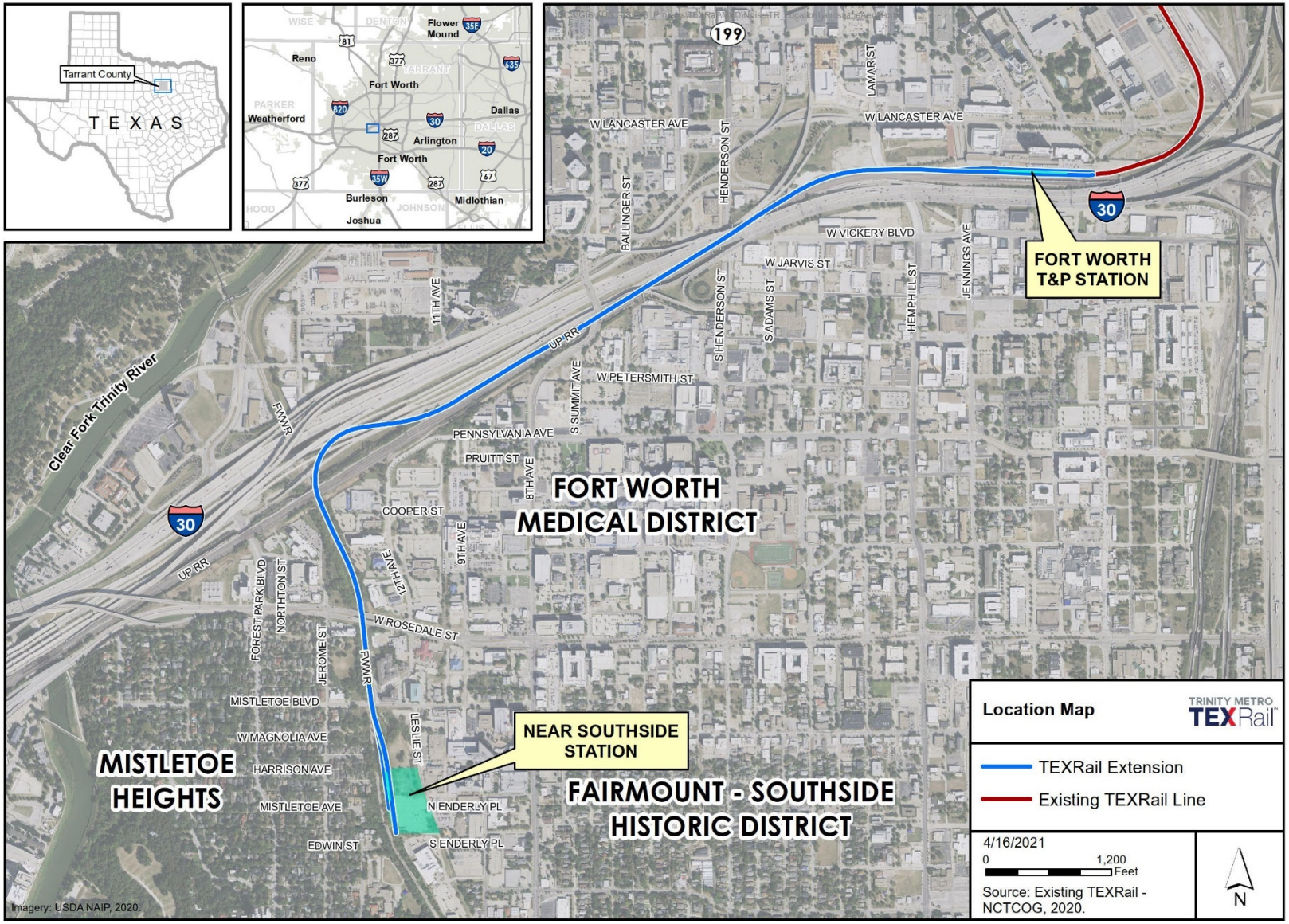
1.2 Project Description

Trinity Metro is planning to construct a 2.1-mile commuter rail extension from the Fort Worth T&P Station, where TEXRail currently terminates, to a proposed station in the Fort Worth Medical District known as the Near Southside Station (**Figure 1**). The TEXRail Extension Project would utilize Union Pacific Railroad (UPRR) right-of-way (ROW) and operate on an exclusive track traveling west from the Fort Worth T&P Station to a connection with the Fort Worth & Western Railroad (FWWR) ROW, where it would then turn south to transition onto its own alignment adjacent to the FWWR freight track in the FWWR ROW. The TEXRail Extension Project would utilize the same vehicles currently in use on the existing TEXRail line that operate between downtown Fort Worth and DFW Airport. Maintenance for the project would continue to occur at the existing maintenance facility located at 3801 Texrail Avenue in Fort Worth, TX, near the Mercantile Center Station.

1.3 Project Background

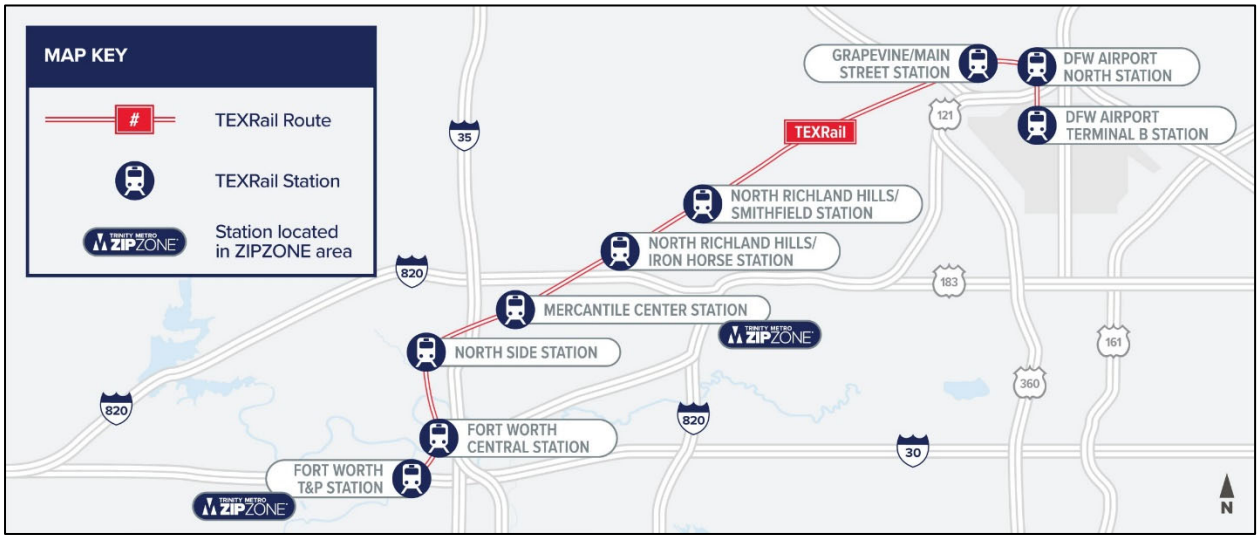
Trinity Metro's Board of Directors endorsed the TEXRail preliminary LPA in November 2006. In April 2007, Trinity Metro began a Draft Environmental Impact Statement (DEIS) for the 37.6-mile Southwest-to-Northeast Rail Corridor LPA known as the Commuter Rail Alternative. In 2011, the project was rebranded as TEXRail. In the Final EIS (FEIS), Trinity Metro included an approximately 27-mile Commuter Rail Minimum Operable Segment (MOS) Alternative which was evaluated and compared to the

Figure 1: TEXRail Extension Project Location



Commuter Rail Alternative. Trinity Metro chose the Commuter Rail MOS Alternative as the Preferred Alternative, which terminated in downtown Fort Worth at the Fort Worth T&P Station instead of the Summer Creek Station in southwest Fort Worth. The FEIS received a Record of Decision from FTA in May 2014 for the Preferred Alternative and TEXRail began operations in January 2019, providing commuter rail service between Downtown Fort Worth and the DFW International Airport (**Figure 2**).

Figure 2: Existing TEXRail System



Source: Trinity Metro, 2021.

The approximately 27-mile TEXRail commuter rail route was completed in January 2019 and was $80.6 million under budget, with roughly half of those funds coming from federal sources and the remainder from local sources. In March 2020, FTA authorized using the remaining $38.9 million in federal funds to extend TEXRail 2.1 miles to the proposed Near Southside Station located behind the Baylor Scott & White All Saints Medical Center, bringing commuter rail service to the Fort Worth Medical District, the Mistletoe Heights Neighborhood, and the Fairmount-Southside Historic District, as shown on **Figure 1**.

1.4 Project Purpose

As determined through consultation with the public, local stakeholders, and government agencies, the purpose of the TEXRail Extension Project is to:

- Provide high quality, safe, reliable, and direct commuter rail service to the Fort Worth Medical District; one of the region's most important employment centers; and
- Add connectivity to the region for residents in the surrounding neighborhoods including Mistletoe Heights and the Fairmount-Southside Historic District, providing direct rail service to points along the existing TEXRail commuter line; and service to the Dallas Area Rapid Transit (DART) service area via a transfer from the Trinity Railway Express (TRE) at the Fort Worth T&P Station, and at the DFW Airport Station (the northern terminus of the existing TEXRail line).

1.5 Project Need

The need for the TEXRail Extension Project includes growth and limited transit access for the businesses and residences within and surrounding the Fort Worth Medical District. Challenges include:

- Continued residential growth in the surrounding neighborhoods including Mistletoe Heights and the Fairmount-Southside Historic District, resulting in increased travel demand in the project vicinity;
- Continued employment growth in the Fort Worth Medical District, attracting increasing levels of journey-to-work trips; and
- A lack of direct transit access to DFW Airport and major activity centers beyond Trinity Metro's service area for the residents and employees within and near the Fort Worth Medical District.

2.0 ALTERNATIVES CONSIDERED

This EA documents the evaluation of the Build Alternative, the extension of commuter rail service from the Fort Worth T&P Station to the proposed Near Southside Station located adjacent to the Fort Worth Medical District. The EA also documents the evaluation of a No-Build Alternative for comparison of impacts and benefits to the Build Alternative.

2.1 No-Build Alternative

The No-Build Alternative was developed to assess the impacts and the benefits if nothing more is done beyond what is currently planned in the North Central Texas Council of Governments (NCTCOG) *Mobility 2045 Plan* (NCTCOG, 2018a), as well as programmed projects in the current *2021-2024 Transportation Improvement Program (TIP) for North Central Texas* (NCTCOG, 2018b). The environmental impacts as a result of the planned projects in Mobility 2045 and the TIP would be determined and mitigated through the environmental analysis processes for each individual project.

The No-Build Alternative includes Trinity Metro's existing bus and commuter rail network. Currently from downtown, the Fort Worth Medical District is served by bus routes number 1 (along Hemphill/ Jennings Streets) and 4 and 6 (along 8th Avenue). The No-Build Alternative will generally have these bus services operate as they do today. No extension of the TEXRail commuter rail route will be provided. The No-Build Alternative will provide the baseline against which the Build Alternative will be compared.

2.2 Build Alternative

The TEXRail Extension Project would extend TEXRail commuter rail service approximately 2.1 miles south from the Fort Worth T&P Station to the proposed Near Southside Station. From the existing Fort Worth T&P Station, TEXRail would extend west using the northernmost track along the UPRR mainline that runs adjacent to Interstate Highway (I)-30/Chisholm Trail Parkway to approximately 11th Avenue where the TEXRail track would transition north off of the UPRR mainline alignment onto its own alignment heading underneath the Chisholm Trail Parkway lanes in what is known as a jug-handle configuration turning south to connect with the FWWR corridor. Trinity Metro met extensively with the North Texas Tollway Authority (NTTA) during the previously completed AA and EIS to ensure that adequate space would be preserved under the freeway bridge columns to allow for TEXRail to connect with the FWWR rail line under the Chisholm Trail Parkway freeway lanes. The new TEXRail track heading south would generally be located within FWWR ROW to Mistletoe Boulevard, with a minimum of 20 feet between the existing freight track (measured from centerline to centerline). Detailed plan and profile drawings of the TEXRail Extension Project are included as **Appendix C: Engineering Drawings**.

The proposed Near Southside Station would serve one of the largest employment centers in the region. The station would draw employees and business patrons from the surrounding medical and office complexes, including five major hospitals (Baylor Scott & White All Saints Medical Center, Cooks Children's Hospital, Harris Methodist Hospital – Fort Worth, and Plaza Medical Center) located within

one mile of the station. The station would also be in proximity to several established residential areas, and would draw residents from the Fairmount, Berkeley Place, and Mistletoe Heights neighborhoods. The station would also be in proximity to several regional roadways, including I-30, Rosedale Street, and Forest Park Boulevard. The concept for the proposed Near Southside Station as shown in **Figure 3** would provide space for 100 vehicles and three bus bays for transit users. As depicted in **Figure 3**, the proposed Near Southside Station would also provide multiple opportunities for transit-oriented development (TOD) as further described in **Section 3.2, Land Use and Economic Development**. With the implementation of the TEXRail Extension Project, Trinity Metro would re-route nearby local bus to feed into the station as further described in **Section 3.1, Transportation**.

Figure 3: TEXRail Extension Proposed Near Southside Station Concept

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3.0 summarizes the existing natural, physical, and cultural environments within the TEXRail Extension Project. The detailed evaluations for these resources are provided in **Appendix B: Environmental Resource Technical Reports**. Each section describes the Study Area for that particular resource area. Resource Study Areas vary from the footprint or limits of disturbance (LOD) of the TEXRail Extension Project, where construction would occur (for example [e.g.], acquisitions would only occur at properties within the LOD adjacent to the Project), to one-half mile from the project (e.g., transportation corridors could see traffic impacts a half-mile [or more] away as transit patrons drive to park at transit stations).

A summary of the evaluation results across all resources for the TEXRail Extension Project is provided in **Section 3.15 Summary of Environmental Analysis Resource Areas**.

3.1 Transportation

This section provides a summary of transportation infrastructure including transit, freight, pedestrian and bicycle facilities networks, as well as traffic and parking within the Study Area, which is defined as a one-half mile radius buffer from the project LOD. For a more detailed discussion of Transportation resources, please see **Chapter 1.0: Transportation, Appendix B2: Physical Resources Technical Report**.

3.1.1 Affected Environment

Transit: Trinity Metro currently provides bus and/or rail services to Fort Worth, Blue Mound, Grapevine and North Richland Hills in Tarrant County, Texas.

Trinity Metro operates several bus routes that serve the Fort Worth Medical District including Routes 1, 4, and 6 (Route 5 also serves the area, but operates along South Main Street, on the eastern edge of the Medical District). These routes currently operate on a 15- or 30-minute service through the Study Area. In 2020, Trinity Metro introduced ZIPZONE service in the Near Southside neighborhood, which is a ridesharing transit solution that uses smartphone technology and a fleet of dedicated vehicles to provide first- and last-mile trips within specific service boundaries. ZIPZONE allows passengers to request trips in real time through the app or over the phone by selecting a pickup point and destination. The service in the Near Southside neighborhood operates from 6:00 am to 8:00 pm and costs $3.00 per ride (or is included for free when transferring from a bus route or commuter rail line). ZIPZONE transfer service provided within the existing TEXRail system is shown in **Figure 2**.

Trinity Metro jointly operates TRE commuter rail service (with DART) to Union Station in downtown Dallas. TRE operates six days per week, operating every 30-minutes during peak periods and hourly during off-peak periods. Trinity Metro also operates the existing TEXRail commuter rail service between downtown Fort Worth and DFW Airport. TEXRail provides service seven days per week, operating on the same schedule every day with trains operating every 30-minutes during peak periods and hourly during off-peak periods. Both rail services currently terminate at the Fort Worth T&P Station.

Freight Rail: The freight railroad network in the Study Area includes the UPRR, a Class-1 railroad, and FWWR, a Class-2 short-lined railroad. The UPRR mainline runs along I-30 with four tracks through this segment of Fort Worth between UPRR's Davidson Yard on the west and Tower 55 (one of the nation's busiest and most congested rail intersections) on the east. FWWR is headquartered in Fort Worth with

trackage on the west side of downtown running south and crossing under I-30 on single tracks adjacent to the Fort Worth Medical District and then south along Granbury Road.

Pedestrian and Bicycle Facilities: The Fort Worth Active Transportation Plan (2019) is Fort Worth's first citywide trails master plan. Active transportation includes walking, bicycling, wheelchair use, and all non-motorized means of travel for transportation and recreation (City of Fort Worth, 2019). The plan emphasizes local, short trips and connections to transit. Principally, the plan prioritizes walking and biking-related projects that create comfortable and connected access to transit.

Existing pedestrian facilities in the Study Area include trails along the Clear Fork of the Trinity River and sidewalks along numerous streets including within the Mistletoe Heights and Fairmount neighborhoods. Existing sidewalks within the Study Area are generally in good condition with the exception of a few intersections (see **Chapter 1.0: Transportation, Appendix B2: Physical Resources Technical Report**). The Fort Worth Active Transportation Plan has outlined areas with sidewalk gaps (where sidewalks do not exist or are not adequate for pedestrian connectivity). The plan outlines network priorities and states that sidewalk networks should not have gaps and should be in good condition, as well as being Americans with Disabilities Act (ADA)-accessible. A few sections of poor sidewalk conditions are located east of the TEXRail Extension Project, south of Rosedale Street and north of West Myrtle Street. There are also sidewalk gaps in the Study Area along Mistletoe Boulevard, Beckham Place, and Leslie Street.

Existing bicycle infrastructure in the Study Area includes a combination of sharrows (shared lanes), wide shoulders, signage, bicycle lanes, and multi-use paths. Existing bicycle facilities include areas that have dedicated on-street bicycle infrastructure (in other words [i.e.], sharrows). Sidepaths include dedicated and marked bicycle-only lanes. In 2013, Fort Worth Bike Sharing launched a B-cycle system consisting of 300 bikes and 30 stations serving Downtown, Near Southside (with several locations including one in proximity to the Project at Enderly Place and West Allen Avenue), and the Cultural District. With 350 bikes and 46 stations, the organization provided over 58,000 bike trips accounting for 277,000 miles in 2019. The B-cycle system is now operated by Trinity Metro.

Traffic: Mistletoe Boulevard and Leslie Street are vital routes to the Near Southside Station, as they provide a direct connection to the TEXRail Extension from the surrounding Hospital District and neighborhoods. Existing traffic counts in the Study Area were taken on March 4, 2021. However, due to COVID-19 they were not considered typical counts and an adjustment factor was determined to account for this. See **Figure 4** for more detail on the COVID-19 factor and development of existing volumes. As traffic volumes return to normal, travel patterns in the corridor appear to be returning to pre-pandemic levels. Turning movement counts (TMCs) were collected at all intersections, excluding the railroad crossing, for 12 hours (7:00 am to 7:00 pm) to capture both the morning and evening peak periods. The intersection analysis revealed all intersection movements currently operate with an acceptable Level of Service (LOS). It should be noted that all movements are operating at LOS C or better except for the eastbound left at 8th Avenue which operates at LOS D in the am peak hour and LOS E in the pm peak hour. This movement is currently stop-controlled and vehicles must traverse two lanes and a center two-way left turn lane to complete the turning movement.

Traffic analyses further evaluated the existing corridor, defined as Mistletoe Boulevard between Forest Park Boulevard on the west and 8th Avenue on the east. The existing Mistletoe Boulevard corridor experiences slightly longer travel times and lower vehicle speed in the am peak hour compared to the PM peak hour. Additionally, in both peak hours, the westbound travel time was found to be longer than the eastbound. For additional information regarding traffic operations, see **Appendix E: Traffic Operations Report**.

Figure 4: COVID-19 Adjustment Factor

Excerpt from Transportation Memo – COVID-19 Adjustment Factor

The COVID-19 Pandemic has impacted typical traffic patterns. The repercussions on schools, commercial developments, businesses, and the expansion of telework have reduced the total amount of motor vehicle traffic. For the purposes of this study, the development of a COVID-19 adjustment factor was determined as an appropriate approach to account for the change in traffic patterns and estimate the expected 2021 traffic under normal traffic conditions. This factor will be developed using the following methodology:

- 12-hour traffic counts will be collected at the previously specified locations on the corridor (along Mistletoe Boulevard).
- Historic data at a TxDOT count location along Park Place Avenue East of Warner Road (220HP5727) will be used to estimate an average annual growth rate. This location was selected as it has a similar connectivity between Forest Park Boulevard and 8th Avenue and has both a 2014 and 2019 count available.
- Historic data at a TxDOT count location along Mistletoe Boulevard west of Beckham Place (220U1943) will be used to compare to the count data being collected. This location was chosen as it coincides with one of the approaches at an intersection for which data is being collected. Data at this location is only available for 2014 so the growth rate calculated along Park Place Avenue will be applied to adjust this count data to 2021. This COVID-19 adjustment factor will then be calculated on an hourly basis and applied to all collected traffic counts. This is done on an hourly basis as the daily travel patterns have shifted from typical travel patterns associated with pre-COVID-19 Pandemic conditions.

Parking: Within the Study Area, Trinity Metro provides approximately 100 free parking spaces at the Fort Worth T&P Station for transit patrons using TEXRail and TRE commuter rail service. No overnight parking is allowed. There is also paid parking available in the lots surrounding the Fort Worth T&P Station. The southern extent of the Study Area includes an approximately 2.4-acre parking lot for employees of the Baylor Scott & White All Saints Medical Center. The medical center provides parking to visitors in its parking structure located at 8th Avenue and Enderly Place. Other medical clinics in the surrounding area provide off-street parking for their employees and visitors. In addition, on-street parking is available on local streets in and around the Study Area.

3.1.2 Environmental Consequences

Transit: Under the No-Build Alternative, Trinity Metro's existing bus and commuter rail network would in large part remain as it is today, with regular modifications on individual routes based on ridership and other service planning measures. Currently from downtown, the Fort Worth Medical District is served by bus routes number 1 (along Hemphill/Jennings Streets), 4, and 6 (along 8th Avenue). The No-Build Alternative would generally operate these bus services as they operate today. No extension of the TEXRail commuter rail route to the Fort Worth Medical District area would be provided.

Under the Build Alternative, the TEXRail Extension Project would be implemented and is anticipated to enhance transit service in the Fort Worth Medical District area with the introduction of commuter rail service to the proposed Near Southside Station. TEXRail service would operate from 4:00 am to 1:00 am. Trinity Metro Routes 4 and 6 would be re-routed to allow buses to serve the proposed Near Southside Station, which will include three bus bays. There would be only minimal impacts to travel times for the existing bus service. However, this would be offset by providing a direct connection to commuter rail service in the Near South Side area. No other impacts to transit service are anticipated based on the implementation of the TEXRail Extension Project. Minor construction impacts would occur at the Mistletoe Boulevard intersection, where new tracks would be placed to connect the proposed Near Southside Station to the railroad ROW.

Freight Rail: Under the No-Build Alternative, UPRR and FWWR freight rail operations within the Study Area would run as they do today.

Under the Build Alternative, TEXRail would extend west using the northern most track along the UPRR mainline that runs adjacent to Interstate Highway (I)-30/Chisholm Trail Parkway to approximately 11th Avenue where the TEXRail track would transition north off of the UPRR mainline alignment onto its own alignment heading underneath the Chisholm Trail Parkway lanes in what is known as a jug-handle configuration turning south to connect with the FWWR corridor. The new TEXRail track would generally be located within FWWR ROW to Mistletoe Boulevard, with a minimum of 20 feet between the existing freight track (measured from centerline to centerline). Trinity Metro has worked extensively with both the UPRR and FWWR to ensure existing freight operations would be maintained as a result of the TEXRail Extension Project.

The proposed project includes the replacement of the existing 1925 UPRR Steel Trestle Bridge spanning the FWWR ROW that supports the UPRR Mainlines 3 and 4. The replacement of the bridge is required to accommodate the track alignment for the proposed TEXRail Extension south into the Medical District. Replacing the bridge will require construction of a shoofly bridge (a temporary bridge that will allow trains to continue to operate along this segment while the bridge is reconstructed) to the north in order to maintain UPRR operations of all four tracks on the Dallas Subdivision. Approximately two miles of UPRR mainline track will be shifted temporarily to accommodate the new bridge construction. At the conclusion of the bridge replacement, the mainline tracks, turnouts, crossovers, and signal equipment will be shifted to their original location and the temporary shoofly bridge will be removed. With the construction of the shoofly bridge, there would be only minimal potential impacts to freight rail operations.

Pedestrian and Bicycle Facilities: Under the No-Build Alternative, sidewalk and bicycle facilities would continue to be implemented city-wide in accordance with the *Fort Worth Active Transportation Plan* (2019) (City of Fort Worth, 2019).

Currently, there are sidewalks on much of the north side of Mistletoe Boulevard but there is a missing segment between Beckham Place and just west of the FWWR tracks. Additionally, there are no sidewalks on the south side of Mistletoe Boulevard. Under the Build Alternative, the missing segment on the north side of Mistletoe Boulevard between Beckham Place and just west of the FWWR tracks would be completed by the City of Fort Worth as part of the implementation of the planned quiet zone project at Mistletoe Boulevard. A new sidewalk on the south side of Mistletoe would be constructed by Trinity Metro. Additionally, sidewalks would be built along both sides of Leslie Street to connect to the proposed Near Southside Station.

Finally, as Mistletoe Boulevard is currently signed as a bicycle route, bicycle-friendly track crossings would be implemented into the design of the new crossing at Mistletoe Boulevard. Furthermore, the proposed Near Southside Station would offer bicycle racks as an amenity at the station, consistent with other TEXRail Stations increasing regional access for bicyclists in the area.

Traffic: An operational analysis was completed in June 2021 and updated in August 2021 (as part of the TEXRail Extension EA) for the No-Build Alternative opening year (2025) and horizon year (2045) and the Build Alternative opening year (2025) and horizon year (2045) scenarios adjacent to the proposed Near Southside Station and along Mistletoe Boulevard from Forest Park Boulevard to 8th Avenue in Fort Worth (See **Appendix E: Traffic Operations Report**).

Under the No-Build Alternative, nothing more would be done to the existing transportation network beyond what is currently planned in the NCTCOG *Mobility 2045 Plan* (NCTCOG, 2018a), as well as

programmed projects in the current *2021-2024 TIP for North Central Texas* (NCTCOG, 2018b). The impacts to traffic as a result the planned projects in Mobility 2045 and the TIP would be determined and mitigated through the environmental analysis processes for each individual project.

Under the No-Build Alternative, all intersections along the Mistletoe corridor between Forest Park Boulevard and 8th Avenue are projected to operate with acceptable LOS in the 2025 opening year and in the 2045 horizon year. While each of the full intersections would operate and acceptable LOS, the eastbound left turn from Mistletoe Boulevard at 8th Avenue in the PM peak hour is currently operating at LOS E. The eastbound approach at 8th Avenue is stop-controlled and left-turning vehicles currently have difficulty finding adequate gaps to make this turning movement. Initial modeling results showed that this turning movement would continue to worsen into the future, and a signal would be warranted at this location. However, based on coordination with City of Fort Worth traffic engineering staff, a signal at this location would not be feasible due to spacing requirements of signalized intersections. Instead, the City has plans to reconfigure the eastbound approach to prohibit left turns (to northbound 8th avenue). With this improvement, traffic projections show this intersection to operate at acceptable LOS in both 2025 and 2045.

Under the Build Alternative, all intersections along the Mistletoe corridor are projected to operate with acceptable LOS in both 2025 and in 2045. The Mistletoe Boulevard and 8th Avenue intersection would continue to operate with an acceptable LOS in both 2025 and 2045 under the Build Alternative, with the prohibited left turn onto northbound 8th Avenue. Both Trinity Metro bus routes 4 and 6 would be re-routed to travel to the Near Southside Station along Mistletoe Boulevard between Leslie Street and 8th Street, and then back out to 8th Avenue likely via 9th Avenue and Rosedale Street. The addition of buses along this segment would not have a significant impact on traffic operations along Mistletoe Boulevard. The TEXRail Extension Project would not impact the LOS at intersections within the Study Area. As previously discussed, despite the increases in traffic demand generated by the proposed Near Southside Station, all intersections would continue to operate at an acceptable LOS (A-C). Mistletoe Boulevard travel times would also remain similar to existing travel times under the Build Alternative.

Access to the proposed Near Southside Station would be from Leslie Avenue, which would be realigned for the project. Leslie Avenue would be reconstructed from Mistletoe Boulevard to the proposed Near Southside Station and would include a sidewalk on both sides to provide pedestrian access to the station.

Parking: Under the No-Build Alternative, there would be no extension of the existing TEXRail service to the Fort Worth Medical District, thus no change to the parking spaces currently reserved for Baylor Scott & White All Saints Medical Center employees.

There are currently 264 parking spaces on 2.4 acres reserved for hospital employees behind Baylor Scott & White All Saints Medical Center. For the Build Alternative, 100 new parking spaces would be provided at the proposed Near Southside Station for transit patrons. Trinity Metro would acquire a portion of the 2.4-acre medical center parking lot adjacent to the proposed station to accommodate the required 100 parking spaces. In addition, Trinity Metro would acquire a portion of the medical center parking lot to accommodate the station platform and tail tracks. The area required to accommodate the station would impact 55 employee parking spaces. Trinity Metro would replace the employee parking spaces that the project displaces by reconfiguring the remaining portion of the parking lot that is located closer to the medical center and by building two new parking lots to the north of the existing lot. To connect the parking lots, Trinity Metro would remove approximately six additional parking spaces in the rear of the existing parking lot to build new sidewalks between the parking lots. The lots could also provide parking

for future TOD if implemented (as previously shown in **Figure 3**). With the replacement of the impacted medical center parking spaces, there would be no loss of employee parking.

3.1.3 Mitigation Measures

As previously discussed, for the transit, freight, pedestrian and bicycle facilities, and traffic transportation resources in the Study Area, no mitigation measures would be required as a result of the TEXRail Extension Project due to the following:

- Changes to the transit network are anticipated to be positive with the implementation of the TEXRail Extension Project providing an enhanced transit service for the Fort Worth Medical District;
- UPRR and FWWR operations would run as they do today;
- new sidewalks would be constructed to connect the proposed Near Southside Station to the surrounding community and the completion of the missing sidewalk segment on the north side of Mistletoe Boulevard between Beckham Place and just west of the FWWR tracks by the City of Fort Worth as part of the planned quiet zone project at Mistletoe Boulevard, on the south side of Mistletoe Boulevard between Leslie Street and the FWWR track, and along Leslie Street would be completed by Trinity Metro; and
- vehicle travel times along Mistletoe Boulevard between Forest Park Boulevard and 8th Avenue would be minimally impacted with the implementation of the Build Alternative.

For parking mitigation measures, impacted parking spaces for Baylor Scott & White All Saints Medical Center employees would be reconfigured but replaced within the same area and at a location closer to the medical center. In addition, while parking is generally allowed on most local streets in the area, the implementation of signage and enforcement would be used to discourage all-day parking by transit users if this should become a problem.

3.2 Land Use and Economic Development

The TEXRail Extension Project is located within the limits of the City of Fort Worth, which is the municipal agency responsible for land use planning. For a more detailed discussion of Land Use and Economic Development, please see **Chapter 3.0: Land Use and Economic Development, Appendix B2: Physical Resources Technical Report**.

3.2.1 Affected Environment

The land use Study Area, defined as one-half mile on either side of the TEXRail Extension Project LOD, is located west and south of downtown Fort Worth. This area is consistent with the urban downtown and primarily consists of office buildings, government buildings, light industrial, mixed-use residential and transportation uses. The eastern and northern portions of the Study Area are more densely developed due to their proximity to downtown. The western and southern portions are generally less dense and include more single-family residential uses.

The southern portion of the Study Area consists of predominantly high-density, mixed-use, pedestrian-oriented developments that are part of the City of Fort Worth's Near Southside "NS" Mixed-Use/Form Based zoning. The northern portion of the Study Area, located north of I-30, abuts downtown Fort Worth and is zoned Central Business High Intensity. This zoning designation allows intensive commercial uses and high-density residential and office uses.

Other land uses in the Study Area include parklands and open space, namely Newby Park, which is located directly west of the FWWR ROW between West Rosedale Street and Mistletoe Boulevard. Newby Park is a neighborhood park located at 1105 Jerome Street that features a playground, swings, baseball fields, basketball courts, and covered pavilions, and serves the Mistletoe Heights neighborhood.

There have been several new developments that have occurred in recent years in the Near Southside area, including several new apartment buildings, new medical facilities, a transitional care facility and a new hotel.

3.2.2 Environmental Consequences

Under the No-Build Alternative, forecasted growth trends will continue as forecasted. Nothing more would be done beyond what is currently planned in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the current 2021-2024 TIP for North Central Texas (NCTCOG, 2018b). Changes to land use as a result the planned projects would be determined and mitigated through the environmental analysis processes for each individual project.

As a result of the Build Alternative, current transportation land use would largely remain the same, considering the existing UPRR and FWWR railroad corridors that would be utilized for the TEXRail Extension Project. However, the existing land use surrounding and including the proposed Near Southside Station area would be converted to transportation use. This would include 26 parcels considered vacant by the Tarrant County Appraisal District land use codes (2021), but currently owned by Baylor Health Care Systems, including the parking lot currently utilized for Baylor Scott & White All Saints Medical Center employee parking, as discussed in **Section 3.1, Transportation**.

In addition to the 26 parcels mentioned above, the Build Alternative would require the partial acquisition of seven properties along the east side of the FWWR alignment where additional property would be required to maintain the 20-foot distance between the proposed TEXRail passenger track and the existing FWWR freight track and meet minimum clearance from the bridge columns at Rosedale Street.

Trinity Metro has been in discussions with Baylor Health Care Systems about acquiring these parcels required for the TEXRail Extension Project station area through a purchase by Trinity Metro. Parking areas may be acquired as an easement to allow Baylor Scott & White to utilize for future TOD on the property surrounding the proposed Near Southside Station. The addition of a commuter rail station to the area would likely increase market demand and could spur denser TOD in the area. TODs typically require compact development and can vary by their location, size, composition and function to fit the respective market needs for housing, retail and/or commercial space. The proximity to the Baylor Scott & White All Saints Medical Center, a major employer, would provide connections to daily riders who would likely commute to and from work using transit. TOD at the proposed Near Southside Station area has the potential to create a destination hub, where complementary land uses to the current medical land uses could be used to create a “neighborhood” focus. The “NS” zoning designation would support a high-density and walkable TOD in this area. Additionally, while parking at both the station for transit riders and at the Baylor Scott & White All Saints Medical Center employee parking is currently a surface parking lot, a TOD development would have the potential reconfigure these parking areas in the future if a parking structure is built at this location to support all uses. While TOD remains a possibility at this location, there are no specific plans for a new development at this location at this time.

Minor construction impacts could occur as a result of construction noise, dust, and construction work that requires the closure of traffic lanes.

3.2.3 Mitigation Measures

The vacant land currently owned by Baylor Health Care Systems would need to be acquired either through a purchase or as an easement for the proposed Near Southside Station. To minimize disruption to the Baylor Scott & White All Saints Medical Center and other nearby businesses during construction, Trinity Metro will continue ongoing coordination during final design and through construction. Additionally, to minimize disruption to the medical center's employees, coordination will continue between the Baylor Health Care Systems and Trinity Metro to ensure parking needs are addressed during all periods of construction.

3.3 Neighborhoods

This section summarizes socioeconomic conditions within the Study Area through a demographic assessment and an assessment of adjacent communities, community facilities, and environmental justice. For a more detailed discussion of Neighborhoods, please see **Chapter 4.0: Neighborhoods, Appendix B2: Physical Resources Technical Report**.

3.3.1 Affected Environment

Demographic Characteristics: For the neighborhoods Study Area, which was defined as a quarter-mile buffer from the TEXRail Extension Project LOD, data was gathered from the United States (U.S.) Census Bureau's (USCB's) 2019 American Community Survey (ACS) 5-year estimates (USCB, 2019) and the NCTCOG 2045 Demographic Forecast (NCTCOG, 2019). **Table 1** displays population characteristics within the select block groups with the Study Area and the greater Tarrant County.

Table 1: Demographic Characteristics of the Study Area and County

Demographic Characteristic	Study Area		Tarrant County	
	Number	Percent	Number	Percent
Total Population	**14,011**		**2,049,770**	
Hispanic or Latino Origin	2,994	21.4%	590,485	28.8%
White Alone	11,097	79.2%	1,374,182	67.0%
Black or African American Alone	1,490	10.6%	338,378	16.5%
American Indian and Alaska Native Alone	32	0.2%	10,343	0.5%
Asian Alone	396	2.8%	111,274	5.4%
Native Hawaiian and Other Pacific Island Alone	0	0.0%	3,946	0.2%
Some other race alone	682	4.9%	146,177	7.1%
Two or more races	314	2.2%	65,470	3.2%
Two races include some other race	44	0.3%	1,1993	0.6%
Two races excluding some other race, and three or more races	270	1.9%	53,477	2.6%
Poverty	1,100	7.9%	241,703	11.8%
Limited English	602	4.3%	114,267	5.6%

Note: Numbers do not add to total
Source: USCB, ACS 2019 5-Year Estimates

Communities and Environmental Justice (EJ): Communities can generally be defined by their geography, characteristics and cohesion. Drivers of these factors include typology, diversity, and special location of physical structures, population density, aesthetic and visual appearance, and general assortment of land uses. Additionally, a community's cohesion is reflected in the neighborhood's ability to function and be recognized by its residents and visitors. Cohesion can be a function of density, mobility, and

connectivity. Linear transportation infrastructure has historically created localized barriers that can hinder community cohesion.

Seven communities or neighborhoods were identified within the Study Area including Berkley Place, Fairmount, Mistletoe Heights, Sunset Terrace, Texas and Pacific Lofts, Bricktown, and Near Southside Inc. In addition, multiple community facilities are in the Study Area including schools, fire stations, and hospitals (see **Table 4-6** in **Chapter 4.0: Neighborhoods, Appendix B2: Physical Resources Technical Report)**.

As discussed in the demographic assessment in **Chapter 4.0: Neighborhoods, Appendix B2: Physical Resources Technical Report**, communities within the Study Area range in diversity and income levels. Minority and/or low-income populations, as well as limited English-speaking populations can be found throughout the Study Area; however, higher densities of communities were identified in the eastern portions of the Study Area. Per *FTA Circular 4703.1, Environmental Justice Policy Guidance for FTA Recipients* (FTA, 2012), EJ analysis requires both demographic research and public engagement to determine how the proposed project would affect minority and/or low-income populations. In the block group closest to proposed Near Southside Station, median home prices are nearly $93,000. Additionally, this block group has 1 percent of the population classified as low-income and 4 percent identified as a minority population. Other surrounding block groups have similar statistics (see the **Neighborhoods Chapter** of the **Appendix B2: Physical Resources Technical Report**). Finally, a virtual public meeting for this TEXRail Extension Project was conducted on Thursday, April 15, 2021 (see **Appendix D: Public and Agency Involvement Materials**).

3.3.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built or have impacts to existing neighborhoods in the Study Area. Existing and future planned projects would likely continue, and current economic trends would occur within the Study Area. Under this alternative, an extension of the existing TEXRail commuter rail service would not be built, thus not providing an enhanced transit service for the local neighborhoods and EJ populations in the Study Area.

Under the Build Alternative, potential long-term impacts analyzed as a result of the TEXRail Extension Project to the surrounding community including minority, low-income, and/or limited populations could include impacts to community cohesion, parcel acquisition/displacement, noise and vibration, and economic impacts, as discussed below.

Under the Build Alternative, the TEXRail Extension Project would primarily occur within existing transportation ROW adjacent to the communities presented in **Section 3.3.1**. Potential impacts to community cohesion as a result of the Build Alternative would be minimal. The introduction of new linear commuter rail infrastructure into the existing freight railroad ROW would not constitute a new linear barrier that would inhibit neighborhood function or mobility within the Study Area. The project would have the potential to minimally increase commuter vehicle traffic in and around the proposed Near Southside Station specifically during morning and evening peak commute periods. However, as previously discussed, the project would not have a significant impact on the current LOS at nearby intersections and the addition of mobility options within the community would represent a beneficial impact by increasing regional connectivity and travel options.

Noise impacts would occur near the proposed Near Southside Station including a moderate noise impact at Story Stage School (see Section **3.6, Noise and Vibration**). The majority of the noise impacts as a

result of the TEXRail Extension Project are projected to result from trains sounding horns as they approach the Mistletoe Boulevard at-grade crossing.

For the Build Alternative, most of the property (except for the southern terminus of the LOD) would be within existing freight railroad ROW. Trinity Metro would operate commuter rail service through railroad agreements between both the UPRR and FWWR. TEXRail passenger rail service would operate within the freight rail ROW through permanent easements as outlined in the forthcoming railroad agreements. Additionally, there are seven properties along the east side of the FWWR alignment where additional property would need to be required to maintain the 20-foot distance between the proposed TEXRail passenger track and the existing FWWR freight track. These would all be partial acquisitions totaling 0.7 of an acre located along the FWWR freight rail alignment. No displacements would be required.

At the southern terminus of the LOD, at the site of the proposed Near Southside Station area, the project would require additional ROW outside of the existing railroad ROW. Specifically, Trinity Metro would acquire all or a portion of 26 parcels of property.

No disproportionate or adverse impacts from displacements or acquisitions would occur to minority, low-income, and/or limited English speaking populations in the Study Area.

Potential impacts to the local economy as a result of the TEXRail Extension Project could include delay or deferment of planned projects and conversely the implementation of new projects due to a new passenger rail station and transportation possibilities.

Positive effects between residential and commercial property values and rail and transit stations are documented with examples seen around the U.S. and in the Dallas-Fort Worth region. Potential impacts relating to property values nearby the proposed Near Southside Station area could potentially increase as a result of the additional mobility options provided by the TEXRail Extension Project.

Parcels to be acquired through a purchase by Trinity Metro for the proposed Near Southside Station are owned by Baylor Health Care Systems; therefore, potential impacts due to deferment, adjustment, or cancellation would not be disproportionate and adverse to minority and/or low-income populations or adjacent neighborhoods. No potential projects outside of the LOD would be anticipated to be impacted. Therefore, potential economic impacts to minority and/or low-income populations as a result of the TEXRail Extension would not be anticipated.

During the construction period, potential impacts may include temporary disruption of traffic, temporary noise, and localized air quality impacts. However, with the mitigation measures outlined in **Section 3.1, Transportation**, **Section 3.5, Air Quality**, and **Section 3.6 Noise and Vibration,** potential impacts would be minimized and/or mitigated by best management practices (BMPs). In addition, construction period impacts would not be predominantly borne by minority, low-income, and/or limited English speaking populations and therefore not be disproportionate and adverse.

3.3.3 Mitigation Measures

Potential impacts to communities and minority and/or low-income populations within the Study Area would primarily be related to noise impacts; however, Trinity Metro intends to avoid the routine sounding of commuter train horns near this location by working with local, state, and federal agencies (as needed) to establish a quiet zone in the vicinity of this grade crossing (see **Section 3.6 Noise and Vibration**). Therefore, noise impacts to the surrounding community, including minority, low-income, and/or limited populations, with quiet zone mitigation would not have residual noise impacts.

3.4 Visual Quality

This section describes the general visual characteristics of each landscape unit. These characteristics help determine the visual quality through the lens of vividness, natural harmony, and cultural order. Vividness is the degree of memorable, dramatic, or distinctive components of the landscape. Natural harmony describes the visual coherence and compositional harmony of the Study Area. Cultural order describes how viewers perceive the organization of the cultural visual environment, or the man-made built environment. The built environment is seen as orderly or disorderly. For a more detailed discussion of Visual Quality, please see **Chapter 5.0: Visual Quality, Appendix B2: Physical Resources Technical Report**.

3.4.1 Affected Environment

This section describes the general visual characteristics of each Landscape Unit delineated within the visual quality Study Area, which was defined as the area within one-half mile of the TEXRail Extension Project LOD. Each Landscape Unit was identified by determining areas of scenic distinction within and surrounding the LOD. The visual quality analysis establishes the existing visual quality based on vividness, natural harmony, and cultural order. Vividness is the degree of memorable, dramatic, or distinctive components of the landscape; natural harmony describes the visual coherence and compositional harmony of the Study Area; and cultural order describes how viewers perceive the organization of the cultural visual environment, or the man-made built environment.

Table 2 summarizes the visual characteristics within the three delineated Landscape Units within the Study Area.

Table 2: Existing Visual Quality Summary

Landscape Unit #	Location	Vividness	Natural Harmony	Cultural Order	Visual Quality
1	Fort Worth T&P Station to Henderson Street	Moderate (3)	Moderate (3)	Moderate (3)	**Moderate (3)**
2	Henderson Street to Rosedale Street	Moderately low (2)	Moderately low (2)	Moderate (3)	**Moderately low (2.3)**
3	Proposed Near Southside Station area, Mistletoe Heights neighborhood west of the FWWR corridor, and the Fort Worth Medical District	Moderately low (2)	Moderate (3)	Moderate (3)	**Moderately low (2.3)**

Source: AECOM, 2021

3.4.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to the existing visual quality in the Study Area. Any impacts to visual quality as a result of currently planned projects in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the current 2021-2024 TIP for North Central Texas (NCTGCOG, 2018b) would be determined and mitigated through the environmental analysis processes for each individual project.

The Build Alternative would be within proximity to single-family homes, Newby Park, and Lily B. Clayton Elementary School. However, the residences, Newby Park, and the elementary school are generally oriented away from the TEXRail Extension Project and buffered by mature trees. An increase in train

frequency with additional commuter trains could impact the viewers by adding trains to their views. The vehicles associated with the extended TEXRail service, however, would be shorter and faster than the existing freight vehicles.

As previously discussed, the proposed Near Southside Station and parking area would be located on currently vacant parcels. While employees and patients of the Baylor All Saints Medical Center would have views of the proposed station, all surrounding residential areas, as well as Newby Park, would not have direct views of the station as those views would be shielded by the buffer of mature trees as discussed above. Therefore, impacts to visual quality as a result of the TEXRail Extension Project are anticipated to be minimal.

3.4.3 Mitigation Measures

While no adverse impacts were identified in the analysis, the following BMPs would be used by Trinity Metro to minimize any visual impacts as a result of the TEXRail Extension Project. The measures are related to designing stations to adapt to the local character and preserving and using vegetation as a screen.

- **Design Stations to Adapt to Local Context**: Trinity Metro shall coordinate with the City of Fort Worth to design a station which is visually integrated into and complements the character of the surrounding area.
- **Preserve Existing Vegetation**: During construction, in areas which require clearing for temporary or permanent use, Trinity Metro shall minimize the clearing of vegetation and only partially clear the ROW, where feasible.

3.5 Air Quality

This section documents existing conditions and summarizes results of the air quality assessment for the proposed TEXRail Extension Project in Tarrant County, Texas. For a more detailed discussion of Air Quality, please see **Chapter 2.0: Air Quality, Appendix B1: Natural Resources Technical Report**.

3.5.1 Affected Environment

Ambient Air Quality Standards: For the air quality analysis, the Study Area includes all of Tarrant County as federal and state ambient air quality compliance designations are determined at the county level. The DFW Metropolitan area represents the air basin or air quality control region for the TEXRail Extension Project. The area is home to numerous industries, commercial areas, aviation activity, and a robust transportation system, all of which contribute to local air quality degradation.

The U.S. Environmental Protection Agency (EPA) promulgated and adopted National Ambient Air Quality Standards (NAAQS), that define the allowable concentrations of pollutants that may be reached but not exceeded during a given period of time, for six criteria pollutants (ozone [O_3], carbon monoxide [CO], nitrogen dioxide [NO_2], sulfur dioxide [SO_2], particulate matter [PM}of 10 microns or less PM_{10}, PM of 2.5 microns or less [$PM_{2.5}$], and lead [Pb]). Transportation currently contributes to four criteria pollutants including O_3, CO, NO_x, and PM_{10}.

The EPA designates counties with respect to meeting the NAAQS as attainment (meets or is better than requirements), nonattainment (did not meet requirements), and unclassified (cannot be classified). Tarrant County is designated as nonattainment for eight-hour O_3.

Conformity Status: Transportation conformity requires mass transit projects to conform to the applicable State Implementation Plan (SIP); and transportation activities cannot cause new air quality violations, worsen existing violations, or delay timely attainment of NAAQS. The TEXRail Extension Project is outlined in NCTCOG's *2018 Transportation Conformity* (NCTCOG, 2018c) document and contains conformity determinations conducted for the *Mobility 2045 Metropolitan Transportation Plan (MTP)* and *2021-2024 TIP* (NTCOG, 2018b) which meet the requirements of the Clean Air Act (CAA).

As an element of *Mobility 2045*, the project was developed as part of NCTCOG's Congestion Management Process, a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. In addition, the TEXRail Extension Project meets the criteria for Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding, which is directed to projects that contribute to meeting NAAQS.

3.5.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built or have positive impacts to the existing air quality levels in the Study Area. The No-Build Alternative would not be consistent with the area's most recent financially constrained and conforming long range MTP known as *Mobility 2045*.

Based on the air quality analysis, the Build Alternative would reduce vehicle miles traveled (VMT)-related 2035 regional emissions of CO, volatile organic compounds (VOC), and PM. Total combined VMT and Diesel Multiple Unit (DMU) emissions would be lower for all pollutants except NOx compared to the No-Build Alternative. Although NOx emissions are known precursors to the formation of ozone (O_3), it is not anticipated that O_3 levels would increase as a result of the project. The TEXRail Extension Project would not cause or exacerbate a violation of any NAAQS and, with respect to emissions and conformity, has been found to conform to the SIP. There would be no adverse air quality impacts associated with the implementation of the TEXRail Extension Project.

3.5.3 Mitigation Measures

Construction activities have the potential to produce short-term, localized air quality impacts. Potential impacts include increased vehicle emissions near congested areas affected by construction activities and temporary impacts due to fugitive dust emissions from project construction activities.

Mitigation measures to alleviate temporary impacts from construction activities would be done to include BMPs such as requiring appropriate emission-control devices on all construction equipment powered by gasoline or diesel fuel, proper construction sequencing activities, wetting of exposed earth areas, sweeping to remove accumulated dirt on local roadways, covering of dust-producing materials during transport, and limiting construction during periods of high winds would minimize dust impacts.

3.6 Noise and Vibration

This section presents a noise and vibration impact assessment for the TEXRail Extension Project. For a more detailed discussion of Noise and Vibration, please see **Chapter 6.0: Noise and Vibration, Appendix B2: Physical Resources Technical Report**.

3.6.1 Affected Environment

The existing noise and vibration environment surrounding the TEXRail Extension Project was investigated based on a review of current project and land use information, data from 2014 EIS for the existing TEXRail system, and measurements conducted during March of 2021. A description of the existing noise and vibration conditions in the Study Area (defined as an area 375-750 feet of the LOD, except for areas near grade crossings where land uses within 1,200 feet from the alignment were considered) is provided below. The vibration study area for the project was typically limited to within 200 feet of the TEXRail Extension Project LOD, except for highly vibration-sensitive land uses where facilities within about 600 feet of the LOD were considered. Sensitive receptors located within the Study Area include single-family and multi-family residences, hospitals, a hotel, and a park, as well as a number of medical clinics.

Existing noise sources in the Study Area include roadway traffic on I-30 and major arterial roads, freight and passenger operations on the UPRR and FWWR ROW, and local activities. The existing ambient sound levels vary by location, depending on the proximity to major noise sources, and are typical of an urban environment. Results of the existing ambient noise measurements at points within the Study Area are summarized in **Table 3**.

Table 3: Summary of Existing Ambient Noise Measurement Results

Measurement Location Description	Start of Measurement		Meas. Duration (hours)	Noise Exposure (A-weighted decibel [dBA])	
	Date	Time		Day-night noise level (Ldn)	Equivalent sound level (Leq)
2101 Harrison Avenue (Single-Family Residential)	3/9/21	15:00	24	67	581
Mistletoe Station Apartments (Multi-Family Residential)	3/9/21	15:00	24	74	591
Magnolia at Mistletoe Heights Apts. (Multi-Family Residential)	3/8/21	14:00	24	68	591
Homewood Suites (Hotel)	3/8/21	14:00	24	63	581
Harris Gardens Apartments (Multi-Family Residential)	3/10/21	11:00	24	73	691
Fort Worth Transitional Care Center	3/9/21	13:03	1	572	59
Baylor Scott & White Surgicare	3/10/21	16:06	1	662	68
Texas Rehabilitation Hospital of Fort Worth	3/9/21	16:07	1	612	63
Trinity Pain Medicine Associates	3/9/21	17:11	1	692	71
Cooks Children's Home Health	3/10/21	17:22	1	652	67

Source: Cross-Spectrum Acoustics, 2021

[1] Represents the average Leq measured during the peak transit hours (5:00 am - 9:00 am and 3:00 pm - 7:00 pm).

[2] The Leq measurement data were used to estimate the Ldn Using FTA methodology. This approach tends to be conservative and underestimate the existing noise levels, which can result in the assessment of higher levels of noise impact for a project.

Vibration-sensitive land use within the Study Area is essentially the same as the noise-sensitive land use, except that parks and other outdoor sites are excluded. In addition, there is one especially vibration-sensitive receptor near the LOD (Midtown Medical Imaging).

Existing vibration sources in the Study Area include heavy vehicle (truck) traffic as well as freight and passenger train operations. However, vibrations from roadway traffic are not generally perceptible at receivers in the Study Area (unless streets have significant bumps, potholes, or other uneven surfaces)

and thus the only significant sources of existing ground vibration along the project alignment are train operations.

3.6.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built or have any noise and vibration impacts in the Study Area. Any impacts noise and vibration impacts as a result of the planned projects in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the environmental analysis processes for each individual project.

As a result of the Build Alternative, noise impacts without mitigation would occur at a total of 208 residences, with severe impact at 206 residences and moderate impact at two residences. The pre-mitigation noise impact assessment assumes that train horns would be sounded in the vicinity of the at-grade crossing at Mistletoe Boulevard. The impact analysis also included train idling noise at the proposed Near Southside Station and squeal noise for trains traversing the 500-foot radius between the FWRR ROW and the UPRR ROW.

The results show that vibration levels under maximum-speed conditions are expected to exceed the applicable FTA criterion for a general assessment only at locations within about 45 feet from the track. Because no residences or other sensitive receptors are located within this distance, vibration impacts are not anticipated.

Temporary noise and vibration impacts could result from activities associated with the construction of new tracks and the station, including utility relocation, grading, excavation, track work, demolition, and installation of systems components. Such impacts may occur in residential areas and at other noise-sensitive land uses located within several hundred feet of the rail alignment. The potential for noise impact would be greatest at locations near pavement breaking, and at locations close to any nighttime construction work. The potential for vibration impact would be greatest at locations close to vibratory compaction operations. A quantitative assessment of construction noise and vibration impacts will be conducted during final design when detailed construction scenarios are available.

3.6.3 Mitigation Measures

Consistent with the 2014 EIS, Trinity Metro proposes to mitigate all severe noise impacts and to mitigate moderate noise impacts at locations where the existing noise exposure (Ldn) exceeds 65 dBA as well as at locations where the projected impacts are in the upper 50 percent of the moderate impact zone. Other moderate impacts would be evaluated on a case-by-case basis. Two mitigation measures have been identified to eliminate the projected noise impacts as described in **Section 3.6.2**: (1) a quiet zone and (2) wheel/rail lubrication along a curved section of track. The City of Fort Worth is working with the Federal Railroad Administration (FRA) and FWWR to implement a quiet zone at Mistletoe Boulevard. The quiet zone is expected to be implemented on the FWWR crossing before the TEXRail Extension Project is constructed. Trinity Metro is working with the City of Fort Worth to ensure allowances are made for the TEXRail Extension tracks, and Trinity Metro would upgrade the crossing to include TEXRail Extension tracks within the quiet zone during construction. Because all but two of the noise impacts along the proposed TEXRail Extension Project would result from trains sounding horns as they approach the Mistletoe Boulevard at-grade crossing, Trinity Metro would avoid the routine sounding of commuter train horns near this location by working with local, state, and federal agencies (as needed) to establish a quiet zone at this grade crossing, which is currently in development as of Summer 2021. This measure would provide the additional benefit of eliminating horn noise from existing freight trains, resulting in a

reduction of the overall noise exposure in the area. It should be noted that quiet zones do not eliminate the use of locomotive bells at the crossing. Additionally, sound walls are not proposed along this segment because the quiet zone is projected to mitigate the severe noise impacts in this area, which are caused by the routine sounding of train horns. With quiet zone mitigation, only two residual noise impacts would remain in the Study Area.

Residual noise impacts after quiet zone mitigation would remain at two locations along the segment of the TEXRail Extension Project between West Rosedale Street and the UPRR freight corridor. These noise impacts, which include severe impact at the Homewood Suites Hotel and moderate impact at the Fort Worth Transitional Care Center, would result from squeal noise as trains traverse the 500-foot radius curve between the FWRR ROW and the UPRR ROW. Wheel/rail lubrication along this curved section of track will be provided to mitigate the two remaining noise impacts.

Finally, although public address (PA) announcements at the proposed Near Southside Station are not expected to cause noise impact based on the FTA noise exposure criteria, maximum noise levels from the announcements may exceed background noise levels at the nearest residences to the station. Considering the intrusive character of the PA noise, the announcements could be disturbing to nearby residents without mitigation. The most effective mitigation approach is to ensure the volume of the announcements, from the speakers on both the platforms and the trains, is at a reasonable volume. Trinity Metro will adjust the PA volume to an acceptable volume to ensure that it fits in with the existing noise in the surrounding area.

As previously discussed, vibration levels under maximum-speed conditions would exceed the applicable FTA criterion for a general assessment only at locations within about 45 feet from the track. Because no residences are located within this distance, vibration impacts are not anticipated. The actual calculations indicate that all projected ground-borne vibration levels are below the applicable FTA criteria for a detailed analysis. Therefore, mitigation for vibration impacts would not be required.

The noise and vibration analysis will be updated during final design to account for more detailed information and additional mitigation measures re-considered at that time, if warranted.

3.7 Ecosystems

This section describes the existing ecosystems found within the Study Area. For a more detailed discussion of Ecosystems, please see **Chapter 3.0: Ecosystems, Appendix B1: Natural Resources Technical Report**.

3.7.1 Affected Environment

Vegetation: According to the Ecological Mapping Systems of Texas (EMST) data, the entire ecosystem Study Area, defined as the TEXRail Extension Project LOD, is mapped as Urban High Intensity and Urban Low Intensity (Elliott et al., 2014). Urban High Intensity is described as developed areas within cities and towns mostly consisting of impervious cover. Urban Low Intensity vegetation generally consists of maintained grasses in yards and transportation ROW, along with various ornamental plantings and small patches and rows of native and introduced trees (Elliott et al., 2014).

The TEXRail Extension Project would be constructed within and adjacent to existing railroad and roadway ROW, which generally consists of maintained vegetation, as well as areas completely devoid of vegetation. Small patches of native and introduced trees are located within the Study Area at the proposed Near Southside Station. Additional tree rows are located within and adjacent to the Study

Area along the FWWR ROW. Vegetation adjacent to the Study Area is generally consistent with the EMST mapped types.

Wildlife: The majority of wildlife species inhabiting the Study Area would be expected to be those which are generally associated with urban and suburban areas. No Bald Eagles or Golden Eagles were observed within the Study Area during field investigations; however, evidence of migratory birds was observed. Several nests were observed within wooded areas in the vicinity of the proposed Near Southside Station and along the FWWR and UPRR ROWs. These nests were not active during field investigations; however, migratory birds, including the red-tailed hawk (*Buteo jamaicensis*), northern cardinal (*Cardinalis cardinalis*), blue jay (*Cyanocitta cristata*), Carolina wren (*Thyrothorus ludovicianus*), and northern mockingbird (*Mimus polyglottos*) were observed on-site and would be expected to nest in suitable habitat within the Study Area.

Threatened and Endangered Species: United States Fish and Wildlife Service's (USFWS) endangered species list for Tarrant County and Texas Parks and Wildlife Department's (TPWD) Annotated County List of Rare Species for Tarrant County were examined to determine whether the project would be likely to have an effect on listed species or their habitats (TPWD, 2020a and USFWS, 2021). In addition, TPWD's Texas Natural Diversity Database (TXNDD) was reviewed to determine previously recorded occurrences of any of the listed species within 10 miles of the Study Area (TPWD, 2020b).

Two federally-listed threatened species, two federally-listed endangered species, nine state-listed threatened species, and 43 state rare species and/or Species of Greatest Conservation Need (SGCN) (which are tracked by TPWD for monitoring purposes, but do not currently receive regulatory protection) are listed as having potential to occur in Tarrant County (TPWD, 2020a). **Table 3-1** in **Chapter 3.0, Ecosystems, Appendix B1: Natural Resources Technical Report** contains a listing of these species, along with habitat descriptions, information about recorded occurrences of each species, and a determination of whether habitat exists within the Study Area. No habitat for any federally-listed or state-listed species was observed within or adjacent to the Study Area. In addition, according to data obtained by TPWD's TXNDD, no federally-listed or state-listed threatened or endangered species have been reported to occur within or immediately adjacent to the Study Area. Fourteen state rare species and/or SGCN have the potential to occur within the Study Area; these include the American bumblebee, big brown bat, big free-tailed bat, cave myotis bat, hoary bat, Mexican free-tailed bat, tricolored bat, eastern red bat, eastern spotted skunk, plains spotted skunk, long-tailed weasel, common garter snake, Texas garter snake, and the Texas milk vetch.

3.7.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to ecosystems in the Study Area. Impacts to ecosystems as a result of the planned projects in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b) would be determined and mitigated through the environmental analysis processes for each individual project.

Vegetation: The Build Alternative would have the potential to impact trees and herbaceous vegetation within the ROW. Trees close to the ROW and large trees with branches overhanging the ROW would be removed or trimmed. Areas designated for new tracks and fill embankment would be impacted to a greater extent as these areas would be cleared and graded. The extent of these impacts will be determined during final design via a tree survey to quantify the number, size, and species of any trees to be removed. As the current project design is not sufficiently advanced to accurately assess areas of

impact, the impact analysis for the Build Alternative utilizes a conservative approach, assuming that all vegetation within the Study Area would be impacted.

Construction activities would primarily occur along existing UPRR and FWWR ROW, as well as the maintained ROW of I-30. The proposed action would comply with E.O. 13112 on Invasive Species. Sanitation and equipment cleaning practices would be required by the contractor prior to allowing any construction activity that could spread invasive species. Overall, impacts to vegetation as a result of the TEXRail Extension Project are not anticipated to be significant.

Wildlife: Minor impacts to common wildlife species and their associated habitats would be anticipated within the Study Area for the Build Alternative. As previously discussed, implementation of the TEXRail Extension Project would result in trees being removed or trimmed within the proposed ROW and proposed Near Southside Station area. As a result, wildlife currently nesting or foraging in these trees may be displaced.

Construction activities may also impact wildlife from noise and increased human presence. Wildlife species may be temporarily or permanently displaced as a result of these activities, particularly along the FWWR ROW, southwest portion of the UPRR ROW, and in the vicinity of the proposed Near Southside Station, where most of the trees within the Study Area are located. Some wildlife species may return to the Study Area once construction is complete to forage within the ROW.

The operation of the TEXRail Extension Project would be anticipated to have minor impacts on wildlife in the immediate vicinity of the project. Common wildlife species within the Study Area are currently exposed to the existing freight rail service; therefore, impacts as a result of the TEXRail Extension Project would be considered negligible. Impacts may include minimal adverse effects from the increased use of the tracks (i.e., more frequent disruption due to noise and presence of the trains) and thus a greater likelihood for wildlife to be struck by the trains. However, it is anticipated that the wildlife species currently nesting or foraging within these areas have acclimated and conditioned themselves to the presence of trains from UPRR and FWWR operations.

No migratory birds, their nests, eggs, or young would be harmed as a result of the TEXRail Extension Project with the implementation of BMPs (see **Section 3.7.3 Mitigation Measures**). No Bald Eagles or Golden Eagles would be impacted as a result of the proposed project.

Threatened and Endangered Species: The TEXRail Extension Project would have no effect/impact on federally-listed or state-listed species.

State-listed rare species and/or SGCN which have the potential to occur within the Study Area include the American bumblebee, big brown bat, big free-tailed bat, cave myotis bat, hoary bat, Mexican free-tailed bat, tricolored bat, eastern red bat, eastern spotted skunk, plains spotted skunk, long-tailed weasel, common garter snake, Texas garter snake, and the Texas milk vetch. These species are considered rare by TPWD and have no regulatory status. As further described in **Chapter 3.0, Ecosystems, Appendix B1: Natural Resources Technical Report**, no adverse impacts to these species as a result of the TEXRail Extension Project are anticipated.

3.7.3 Mitigation Measures

Vegetation: Vegetation clearing would be minimized by utilizing existing FWWR, UPRR, and roadway ROW to the greatest extent practicable. Any impacts to trees regulated by the City of Fort Worth, would comply with the Urban Forestry Ordinance (Number [No.] 18615-05-2009), including obtaining an Urban Forestry Permit, if necessary. Trinity Metro would use native and adapted plants suitable for the

environment for any reseeding or planting of vegetation. Sanitation and equipment cleaning practices would be required by the contractor prior to allowing any construction activity that could spread invasive species.

Wildlife: Wildlife species present within the Study Area are adapted to an existing urban environment. Due to the animals' mobile nature, it is anticipated that they would relocate in the event of habitat disturbance. Construction activities would temporarily disturb these species' habitat and cause some permanent loss of habitat. However, re-vegetation throughout the corridor would provide mitigation for some long-term impacts. No adverse impacts to wildlife are anticipated as a result of the proposed project with the implementation of BMPs.

Threatened and Endangered Species: No habitat for federally-listed or state-listed threatened or endangered species was identified within the Study Area; therefore, no specific avoidance, minimization, or mitigation measures are proposed for these species. However, if any federally-listed or state-listed threatened or endangered species are observed during construction of the proposed project, USFWS and/or TPWD would be contacted to request further assistance with appropriate avoidance measures, including relocation of individuals within active and proposed construction areas.

3.8 Water Resources

This section describes the existing water resources found within the Study Area. For a more detailed discussion of Water Resources, please see **Chapter 4.0, Water Resources, Appendix B1: Natural Resources Technical Report**.

3.8.1 Affected Environment

Waters of the U.S.: Based field investigation of the Study Area for water resources, defined as the TEXRail Extension Project LOD, two drainage features exist in the southwestern portion of the Study Area. The first feature enters the Study Area at the location of the proposed Near Southside Station. It then traverses in and out of the Study Area flowing north through a combination of culverts, rock riprap, and earthen channel. The second feature flows north adjacent to the first drainage feature, west of the existing FWWR ROW, and connects downstream to the first drainage feature at a bridge/culvert crossing. Both of these features were identified as man-made drainage features constructed to facilitate stormwater runoff from surrounding infrastructure. As a result, these features were determined to be potentially non-jurisdictional.

Surface Water Quality: The Study Area is located within the Trinity River basin, which drains approximately 17,969 square miles. The Study Area is located within the Lower West Fork watershed, specifically within the Lake Como-Clear Fork Trinity River and Marine Creek-West Fork Trinity River subwatersheds. Based on the 2020 Section 303(d) list, seven stream segments are located within a five-mile radius of the Study Area and contain various impairments such as dioxin and polychlorinated biphenyls in edible tissue, and bacteria in water (recreation use).

Groundwater: The Study Area is located over the subcrop portion of the Trinity Aquifer which serves as the primary source of groundwater in the area. Groundwater levels have historically dropped due to extensive development within the region. Subsequently, many wells have been abandoned for surface water supply. Tarrant County is currently experiencing water level drops due to increased development. The Trinity Aquifer has a very slow recharging process capturing only four to five percent of rainfall in the area. The main use of groundwater in the Study Area is municipal use. No groundwater wells are present within the Study Area.

Floodplains: Based on a review of the FEMA dFIRM panel number 48439C035L (effective March 21, 2019) for Tarrant County, Zone X (FEMA, 2019), the Study Area is defined as including areas of minimal flood hazard, which are the areas outside the special flood hazard area and built higher than the elevation of the 0.2-percent-annual-chance flood. In December 2015, a detailed hydraulic study was performed for Leslie Creek in accordance with the *FEMA Guidelines and Specification for Flood Hazard Partners* and the *City of Fort Worth Storm Water Management Design Manual*. Based on the results of the 2015 hydraulic study, the southwestern portion of the Study Area is located within the fully developed 100-year floodplain boundary (see **Figure 4-1** in **Chapter 4.0, Water Resources, Appendix B1: Natural Resources Technical Report)**.

3.8.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to water resources in the Study Area. Impacts to water resources as a result of the planned projects in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the environmental analysis processes for each individual project.

Under the Build Alternative, no impacts to waters of the U.S. are anticipated as there are no streams or wetlands considered to be potentially jurisdictional waters of the U.S. present within the Study Area.

Regarding surface water quality, construction of the TEXRail Extension Project would involve ground disturbances which could contribute to short-term impacts from erosion and sedimentation. Soils may contain bacteria, nutrients, particles, and other constituents attached to sediment or carried separately by stormwater potentially contributing to pollutant loading. In addition, hazardous materials, such as petroleum and oil products used for fueling and maintenance of construction equipment, could contribute to pollutant loading if runoff from a spill reaches nearby waterbodies. Construction of the proposed Near Southside Station would increase the amount of impervious surface influencing stormwater runoff flow and increase potential pollutants. Erosion and sedimentation BMPs would be implemented to avoid and minimize impacts cause by soil erosion and sedimentation during and post construction (see **Section 3.8.3 Mitigation Measures**). In addition, due to the potential discharge of pollutants to surface water, a TPDES permit, issued by the Texas Commission on Environmental Quality (TCEQ), would be required to comply with Clean Water Act (CWA) Section 402.

No groundwater wells are located within the Study Area; therefore, potential sedimentation and runoff from construction of the project would not have a direct pathway to reach groundwater. Hazardous materials could impact groundwater if runoff from a spill reaches nearby waterbodies potentially leaching through soil into groundwater.

Floodplains: As a result of the detailed 2015 hydraulic study, the TEXRail Extension Project Study Area is located within a 100-year floodplain boundary; therefore, a floodplain development permit would be required. The TEXRail Extension Project would be constructed in accordance with the NFIP and local floodplain management ordinances. New drainage culverts are proposed to be constructed by Trinity Metro underneath TEXRail track to convey Leslie Creek floodwaters. In addition, two new culverts are proposed at the downstream of Leslie Creek where existing culverts are undersized. The additional culverts will be sized to lower the water surface elevations to improve the 100-year flooding issue. Impacts to floodplains would not be significant. No Trinity River CDC would be required.

3.8.3 Mitigation Measures

Prior to construction, a General Construction Permit would be obtained from the TCEQ. As part of the General Construction Permit process, a SWPPP would be prepared by Trinity Metro to address authorized discharges that may reach nearby waterbodies, including discharges to MS4s. As part of Stormwater Pollution Prevention Plan (SWPPP), Trinity Metro and/or its construction contractor would identify and implement temporary stormwater controls as described in more detail in **Chapter 4.0, Water Resource, Appendix B1: Natural Resources Technical Report**.

3.9 Mineral Resources, Geology, and Soils

This section identifies the mineral resources, geology, and soils within the Study Area, defined as the LOD, and assesses the potential for impacts to these resources as a result of the proposed TEXRail Extension Project. For a more detailed discussion of Miner Resources, Geology, and Soils, please see **Chapter 6.0, Mineral Resources, Geology, and Soils, Appendix B1: Natural Resources Technical Report**.

3.9.1 Affected Environment

Mineral Resources: There are no active open pit mines, gravel, sand, clay, or borrow pits, mine tunnels, cave entrances, mine shafts, or mine dumps within the Study Area. The Railroad Commission of Texas database was used to locate the presence of horizontal drainhole wells (oil/gas wells), sidetracks, and canceled well locations within the Study Area. Three horizontal wells are located within western portion, central portion, and eastern portion of the Study Area, as illustrated on **Figures 7-1** through **7-4** in **Section 7.0, Hazardous Materials, Appendix B2: Physical Resources Technical Report**.

Geology: The Study Area is underlain by four geologic formation types, including Alluvium, Fluviatile terrace deposits, Fort Worth Limestone and Duck Creek Formation undivided, and Pawpaw Formation, Weno Limestone, and Denton Clay undivided.

Soils: Soils found within the Study Area include, Sunev-Urban land complex (2 to 8 percent slopes), Urban Land, Sanger-Urban land complex (1 to 5 percent slopes), and Aledo-Bolar-Urban land complex (3 to 20 percent slopes). All of these soils are well drained and non-hydric with no restrictive conditions with respect to site development.

3.9.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to mineral resources, geology, or soils in the Study Area. Impacts to mineral resources, geology, and soils as a result of the planned projects in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the environmental analysis processes for each individual project.

Mineral Resources: All sub-grade utilities would be delineated prior to construction. Impacts to the three horizontal wells are not anticipated.

Geology: During construction, impacts to geology would include ground-disturbing activities, such as grading, which would permanently modify the local topography. The TEXRail Extension Project would be designed to follow local topography, where practicable, to minimize impacts. Since the proposed rail alignment and Near Southside station would not be built below-grade, there would be no measurable short- or long-term impacts to the geological resources within the Study Area.

Soils: Soil erosion could occur during construction and post-construction in areas that require grading and vegetation removal until these areas are reclaimed through implementation of long-term stabilization such as revegetation or other ground covering. In areas where construction activities would occur along slopes that vary in height and steepness, localized failures of these slopes could occur with the increasing risk as the slope steepness and height increases.

3.9.3 Mitigation Measures

Mineral Resources: Care would be taken to avoid construction in the immediate vicinity of the three horizontal wells described above. Trinity Metro or their contractors would delineate all sub-grade utilities and infrastructures associated with oil and gas activities prior to construction. No mitigation measures would be required.

Geology: Geotechnical analysis would be performed by Trinity Metro or their contractors to identify concerns and determine if unstable locations are in need of improvement so that mitigation measures, such as additional site stabilization, could be incorporated in the final design. Soil erosion measures would be implemented during and post construction to stabilize soils. No additional avoidance, minimization, or mitigation measures would be necessary.

Soils: While impacts due to soil erosion are not expected to be significant due to the relatively uniform topography in the Study Area, revegetation or other ground covering would be used by Trinity Metro to stabilize soils on slopes where grading or vegetation removal have occurred. No additional avoidance, minimization, or mitigation measures would be necessary.

3.10 Historic and Archeological Resources

This section identifies the historic and archeological resources within the Study Area (or Area of Potential Effects [APE] for cultural resources) and assesses the potential for impacts to these resources as a result of the proposed TEXRail Extension Project. For a more detailed discussion of Historic and Archeological Resources, please see **Chapter 2.0: Historic Resources** and **Chapter 3.0: Archeological Resources, Appendix B3: Cultural Resources Technical Report**.

3.10.1 Affected Environment

Historic Resources: A historic resources survey was conducted within the historic resources APE as an update to the previous historic resources survey conducted for the TEXRail corridor and documented an historic resources report included in the 2014 EIS. The EIS contained the National Register of Historic Places (NRHP) evaluations for 584 historic resources (buildings, structures, and objects built 1971 or earlier). Due to the passage of time, it was determined, in coordination with the Texas State Historic Preservation Office, formally known in Texas as the Texas Historical Commission (THC), the findings as documented in the 2014 EIS should be updated using a historic resources cutoff date of 1978, to reflect the letting date of the TEXRail Extension Project.

As part of the update, a background review was conducted of the APE, which included the review of historic aerial photographs and topographic maps, as well as a review of Tarrant County Appraisal District records. Based on the background review and field survey, only one location within the APE was found to contain historic resources not surveyed and evaluated for listing in the NRHP in the 2014 EIS effort. The location consists of an apartment complex containing three multi-family residential buildings (identified as Resources 585a-c) constructed in 1960-1961 (see **Chapter 2.0: Historic Resources, Appendix B3: Cultural Resources Technical Report**).

Although Resources 585a-c were found to retain most of their integrity and are associated with community development in the near southside of Fort Worth during the mid-twentieth century, the resources fail to illustrate any known association with significant historical events or a significant pattern of development in Tarrant County. The resources also do not embody the distinctive characteristics of a type, period, or method of construction, nor do they represent the work of a master or possess high artistic value. Furthermore, the resources are not likely to yield information important to history or prehistory. Therefore, Resources 585a-c are recommended not eligible for listing in the NRHP.

Although no undocumented historic properties were identified as part of the current investigation, there are 21 previously recorded historic properties in the current APE. All 21 of the historic properties were previously documented in the 2014 EIS. Of these historic properties, three are NRHP-listed and 18 are NRHP-eligible. Several of the properties are also located within historic districts, including the UPRR Railroad Thematic Corridor, the T&P Terminal Complex, Jennings-Vickery Historic District, and Mistletoe Heights Historic District.

Archeological Resources: The TEXRail Extension Project is located within a heavily urbanized setting, with nearly 100 percent of the archeological APE, defined as the TEXRail Extension Project LOD, located within existing UPRR and FWWR rail corridors, areas within the existing I-30 infrastructure, city streets, above and below ground utilities, and parking lots.

A background review of the Texas Archeological Sites Atlas (TASA) was conducted to identify previous investigations, previously recorded archaeological sites, NRHP listed and/or eligible archaeological sites, State Antiquities Landmarks (SALs), and cemeteries within 1,000 meters of the archeological APE.

While no known cemeteries are located within 1,000 meters (3,280 feet) of the archeological APE, the background review did fine five previous archaeological investigations within 1,000 meters of the archeological APE. According to the TASA, all five of the previous investigations are classified as areal survey projects conducted for the City of Fort Worth (2), Texas Department of Transportation (TxDOT) (1), and Tarrant County (1). No data was available for one project. The Tarrant County survey was conducted on behalf of the Fort Worth Transportation Authority (now Trinity Metro) and FTA for TEXRail in 2013 and encompassed the current archeological APE with exception of an approximate 6.5-acre segment from the westernmost terminus at the westbound I-30 entrance ramp at Worth Street.

The TASA review also identified four previously recorded archaeological sites within 1,000 meters of the archeological APE. Of these, three are historic sites; the fourth site is a Late Prehistoric campsite determined eligible for listing in the NRHP. This site was also designated as a SAL in 1992. One of the historic sites a mid-twentieth century historic neighborhood (the Frisco Addition neighborhood) fully encompassed within the footprint of the proposed Near Southside Station, and was determined ineligible for listing in the NRHP in 2013. Much of this site has been disturbed by construction. No additional previously recorded archaeological sites are intersected by the LOD.

3.10.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to historic and archeological resources. Impacts to historic and archeological resources as a result of projects currently planned in the NCTCOG Mobility 2045 Plan (NTCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NTCTCOG, 2018b), would be determined and mitigated through the environmental analysis and Section 106 process for each individual project, as necessary.

Historic Resources: The investigations conducted within the historic APE did not identify any newly recorded NRHP-listed or NRHP-eligible properties. However, as previously stated, of the 21 historic properties within the APE documented in the 2014 EIS, three are NRHP-listed and 18 are NRHP-eligible, and it was found the TEXRail Extension Project would adversely affect three historic properties eligible for listing in the NRHP (1931 Union Pacific Underpass, 1930 T&P Underpass, and 1925 Steel Trestle Bridge) and the Jennings-Vickery Historic District. Details of these NRHP-eligible resources are provided in **Chapter 2.0: Historic Resources, Appendix B3: Cultural Resources Technical Report**. **Section 3.1.2 Transportation, Environmental Consequences** describes the demoltion and construction process required for the 1925 Steel Trestle Bridge Replacement.

Archeological Resources: Based on the results of the current investigation, the development, construction, and operation of the TEXRail Extension Project would have no effect on archaeological historic properties or SALs. It is recommended construction could proceed without further archaeological resources investigations.

3.10.3 Mitigation Measures

Potential effects to the 1931 Union Pacific Underpass and the Jennings-Vickery Historic District would be concurrently resolved through the existing Memorandum of Agreement (MOA) executed in 2014 between the FTA, THC, and Trinity Metro to resolve potential adverse effects the TEXRail project could have on historical properties. However, the potential effects to the 1930 T&P Underpass and 1925 Steel Trestle Bridge were not included in the MOA. In consultation, FTA and THC determined the existing MOA executed between the FTA, THC and Trinity Metro should be amended to include stipulations for the mitigation of adverse effects to the two NRHP-eligible railroad bridges. FTA notified the Advisory Council on Historic Preservation of the adverse effects under 36 Code of Federal Regulation (C.F.R.) 800.6 and invited the Council to participate in consultation, which it declined in a letter dated July 19, 2021. FTA submitted a draft of the amended MOA to the THC for review on June 30, 2021 and provided a copy of the draft amended MOA to Consulting Parties for review and comment on August 18, 2021. Comments were received on August 24, 2021, with the revised draft amended MOA submitted to the THC, Trinity Metro, and Consulting Parties for a second comment period on September 22, 2021. A meeting with the THC, Trinity Metro, and Consulting Parties was held on October 14, 2021. Coordination with Trinity Metro, THC, Consulting Parties, and FTA regarding potential mitigation is ongoing.

Should any prehistoric or historic human remains or unmarked burials be encountered at any point during construction of the TEXRail Extension Project, the area of the remains should be avoided until a qualified person, as defined by §711.0105(a) under the Texas Health and Safety Code, can determine the status of the remains. Any area determined to contain the intentional burial of the remains is considered a cemetery under current Texas law. Cemeteries are protected under provisions of the Texas Health and Safety Code in Chapters 711-715 (Title 13, § 2, Chapter 22 of the Texas Administration Code [TAC]), and in Section 28.03(f) of the Penal Code. All cemeteries are protected and cannot be disturbed. The Texas Penal Code provides that intentional damage or destruction inflicted on a human burial site is a state jail felony. If a cemetery is identified in the APE, all work in the area of the discovery would cease and the THC would be notified. Following consultation with the THC, a treatment or avoidance plan would be developed and implemented.

3.11 Parklands

This section identifies the park and recreation areas located within and adjacent to the Study Area and assesses the potential for impacts to these resources as a result of the proposed TEXRail Extension

Project. For a more detailed discussion of Parklands, please see **Chapter 5.0, Parklands, Appendix B1: Natural Resources Technical Report**.

3.11.1 Affected Environment

One parkland, Newby Park, was identified adjacent the Study Area, which was defined as the TEXRail Extension Project LOD. This neighborhood park consists of 3.2 acres in central Fort Worth, just south of the downtown area. The park exists in an urban environment surrounded by the Fort Worth Medical District and Mistletoe Heights neighborhood. Along with being adjacent to the active FWWR rail alignment on the eastern edge of the park, the northern edge of the park faces Rosedale Street, a major arterial street to the area. The park has a playground, swings, a baseball field, basketball court, a covered pavilion, walking trails, and picnic tables.

3.11.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to parklands. Impacts to parklands as a result of projects currently planned in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the environmental analysis processes for each individual project.

Under the Build Alternative, no parkland property would be acquired. No known activities would take place that would result in temporary or permanent use of the park as a result of the project. As the park is located to the west of FWWR's active freight rail alignment, the project would not restrict access to the park. Minor visual impacts would occur due to the increase in train frequency; however, these impacts would not be significant. In addition, no visual impacts as a result of the proposed Near Southside Station would occur to users of Newby Park due to a buffer of tall trees and vegetation between the parkland and the Study Area. Therefore, as there would be no direct or constructive use of Newby Park, there would be no use of Section 4(f) resources by the TEXRail Extension Project. One severe noise impact would occur at Newby Park as a result of the TEXRail Extension Project prior to mitigation (see **Section 3.6**).

3.11.3 Mitigation Measures

As described in **Chapter 6.0: Noise and Vibration, Appendix B2: Physical Resources Technical Report** Trinity Metro proposes to mitigate all severe noise impacts and to mitigate moderate noise impacts at locations where the existing noise exposure (Ldn) exceeds 65 dBA as well as at locations where the projected impacts are in the upper 50 percent of the moderate impact zone.

Trinity Metro would mitigate the severe noise impact to Newby Park through the implementation of a quiet zone at the Mistletoe Boulevard at-grade railroad crossing, which is currently in development by the City of Fort Worth at this location as of Summer 2021 (**Section 3.6**). Trinity Metro is working with the City of Fort Worth to ensure allowances are made for the TEXRail Extension tracks, and Trinity Metro would then upgrade the crossing to include TEXRail Extension tracks within the quiet zone during construction. No other impacts to parklands in the Study Area are anticipated; therefore, additional avoidance, minimization, and mitigation measures would not be required.

3.12 Hazardous Materials

This section provides a summary of properties with the potential to have recognized hazardous material issues associated with the proposed TEXRail Extension Project. Potential hazardous materials sites were identified within a half-mile of the Study Area and assessed to determine potential concerns. For a more detailed discussion of Hazardous Materials, please see **Chapter 7.0, Hazardous Materials, Appendix B2: Physical Resources Technical Report**.

3.12.1 Affected Environment

An EDR DataMap™ Corridor Study search was completed in accordance with American Society for Testing and Materials (ASTM) E 1527-13. Based on a review of the database, 279 sites were identified within a half-mile of the Study Area, which was defined as the TEXRail Extension Project LOD and a one-half mile radius buffer. Each of these sites is described in detail in **Table 7-1** and depicted in **Figures 7-1** through **7-4** in **Chapter 7.0, Hazardous Materials, Appendix B2: Physical Resources Technical Report**. Each of the sites was researched and categorized as having a high, medium, or low risk of environmental concern based on the following definitions:

- **High**: Facilities or areas of concern located in the Study Area with documented conditions of past or current contaminant release that has not been fully delineated or that is currently undergoing corrective action or remediation monitoring, exhibits obvious conditions that do not meet current regulatory standards, or is a site with a history of repeated regulatory noncompliance.
- **Medium**: Facilities or areas of concern immediately adjacent to or in proximity to the Study Area with documented conditions of past contaminant releases, is actively participating in a regulatory program, is working to address conditions that do not meet current regulatory standards, is at a significant distance from the Study Area but has a history of regulatory noncompliance, or there is a lack of information available classify the site as low.
- **Low**: Facilities or areas of concern for which there is no evidence to suggest that there has been a current or past release of hazardous substances or chemicals to the environment based on their regulatory compliance history or other knowledge.

3.12.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to hazardous materials in the Study Area. Impacts to hazardous materials as a result of projects currently planned in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the environmental analysis and ASTM processes for each individual project, as necessary.

Of the 279 sites located within the Study Area, one of which is considered as a high potential risk and three are considered as a potential medium risk to the TEXRail Extension Project, with the remaining 275 sites being rated as low risk. A summary of the high and medium risk sites is provided in **Table 4**.

Table 4: Summary of High and Medium Risk Hazardous Materials Sites

Map Identification (ID)*	Address	Risk Level	Description
13	300 South Lake Street, Fort Worth, TX	High	This site is located within the Study Area adjacent to the I-30 entrance ramp and listed in the Underground storage tank database for six tanks removed from the ground in 1990. The database has a current status of 'inactive'. The site also has two Leaking Petroleum Storage Tank (LPST) entries. One entry has a status of final concurrence issued, and the other is currently in the release determination phase. Due to the proximity of this active LPST to the Study Area as well as insufficient information on determining the current status of the site, this site was determined to pose a high risk to the project. An information request has been sent to TCEQ concerning this LPST entry; however, no response has been received to date.
29	2101 West Rosedale, Fort Worth, TX	Medium	This site is located 89 feet west of the Study Area on a vacant tract of land that abuts the Study Area. The site is listed in the Voluntary Clean-up Program (VCP) for soil contamination with metals. The site is currently listed as active; however, no construction is proposed in that area. Due to the proximity to the Study Area and the presence of soil contamination only, this site was determined to pose a medium risk to the project.
117	2222 West Rosedale, Fort Worth, TX	Medium	This site is located approximately 556 feet to the west of the Study Area on a tract of land currently developed as mixed-use commercial. This site is a former shooting range and landfill that is listed in the VCP and Groundwater Contamination Case databases. The site is currently in a monitoring phase for methane gas on the landfill portion of the property through the use of monitoring wells, gas venting trench, and venting turbines installed on site. Due to status, the fact that groundwater is impacted, and proximity to the Study Area, this site was determined to pose a medium risk to the project.
BJ275	2017 8th Avenue, Fort Worth, TX	Medium	This site is listed in the Drycleaner Remediation Database and located approximately 0.47 mile south of the Study Area. The site is currently active and in the assessment phase for potential groundwater contamination from chlorinated solvents. There is currently not a dry-cleaning business operating at the site. A request was made to TCEQ for information pertaining to this location; however, no response has been received to date. Due to the lack of information on this site and the potential for groundwater contamination, this site was determined to pose a medium risk to the project.

*Figures 7-1 through 7-4 in Chapter 7.0, Hazardous Materials, Appendix B2: Physical Resources Technical Report

All known hazardous materials sites would be avoided; therefore, impacts to the TEXRail Extension Project from hazardous materials are not anticipated to be significant. Additional investigation would be conducted on Map ID's 13, 117, and BJ275 including determining groundwater gradient, available TCEQ files, and construction activities in the area of the site during final design. No soil would be used from the Map ID 29 site.

Construction of the TEXRail Extension Project would involve transporting, using, storing, and disposing of hazardous materials and solid waste, such as petroleum and oil products used for fueling and maintenance of construction equipment. Therefore, construction activities would have the potential to result in hazardous materials spills or releases that might impact human health or the environment. Safe handling, use, storage, and disposal of these materials would be required during construction to avoid a potentially adverse effect.

Operation and maintenance of the TEXRail Extension project would involve handling, transporting, generating and disposing of hazardous and solid waste. The waste would be disposed of appropriately according to federal, state and local requirements. Impacts to the TEXRail Extension Project from hazardous materials are not anticipated to be significant.

3.12.3 Mitigation Measures

If unanticipated sources of hazardous or regulated materials are encountered during construction, the construction manager or designee would immediately notify Trinity Metro's Environmental Compliance Division. Specific mitigation activities, which address the type, level, and quantity of contamination encountered, would be immediately implemented. The handling, treatment, and disposal of any hazardous materials would occur in full compliance with all federal, state, and local requirements.

The discharge of any wastewater suspected of containing hazardous/regulated materials is prohibited without first obtaining a TPDES Permit issued by the TCEQ covering the one-time discharge of wastewater containing known and specific hazardous constituents. If fill material is required in construction of the project, the construction contractor would be required to ensure that the sources of any fill material are free of contamination.

Construction waste would be disposed of at approved sites. The contractor would comply with all applicable federal and state regulations. Handling and storage of fuels and other materials would follow Occupational Safety and Health Administration local standards. Preventive measures would be taken to protect the safety of the public, community residents, and construction workers to minimize exposure to hazardous materials. Provisions would also be made for the identification and management of known and unexpected buried tanks or contaminated materials that might be encountered during soil disturbance activities associated with construction.

BMPs shall be implemented as specified in the SWPPP and other site-specific plans during construction and operation activities to reduce or prevent potential impacts through actions such as dust control, construction safety procedures, equipment stockpiling methods, personal protective equipment and employee training on safe handling of hazardous materials. Additional mitigation measures may include developing a Spill Prevention Control and Countermeasure Plan prior to demolition, excavation or construction activities; conducting sampling of hazardous materials intended for disposal; and developing decontamination procedures.

3.13 Public Safety and Security

This section characterizes existing public safety and security conditions for pedestrians, motorists, and the community surrounding the TEXRail Extension Project and identifies potential safety and security impacts that could occur due to the transit improvements. For a more detailed discussion of Public Safety and Security, please see **Chapter 8.0, Public Safety and Security, Appendix B2: Physical Resources Technical Report**.

3.13.1 Affected Environment

Fire Protection and Emergency Medical Services: There are a total of 44 fire stations within the City of Fort Worth, of which two are located within the Study Area, which is defined as one-half mile on either side of the TEXRail Extension Project LOD. There are also 16 major hospitals in the Study Area which represent the locations where emergency medical services could be provided and emergency medical service vehicles could deliver patients. These fire stations and hospitals represent the initial responders for a fire or medical emergency within the Study Area.

Police Protection: There are no police stations in the Study Area; however, the nearest police station is less than two miles away. These facilities represent the primary police response capabilities within the Study Area. Police facilities and patrols located outside of the Study Area could respond to a large incident within the Study Area if support were necessary.

Vehicular and Pedestrian Rail Crossing Activity: The Study Area currently experiences freight activity on a regular basis. The Mistletoe Boulevard at-grade crossing of the freight railroad intersection is protected by flashing lights and swinging arms alerting vehicles, bicyclists, or pedestrians.

School children walking and biking to school could potentially cross the at-grade crossing at Mistletoe Boulevard. In support of local Safe Routes to School initiatives, this Section identifies schools with attendance zones that cross the Study Area. The purpose of the Safe Routes to School initiative is to address the issues of pedestrian and bicycle safety for children and empower communities to make walking and bicycling to school a safe and routine activity.

The Study Area is located within the attendance boundaries of one elementary school, two 6th grade centers, one middle school, and one high school (**Table 5**). The locations of schools and the neighborhoods within these school zones, relative to the proposed alignment, are important because children may need to cross the railroad tracks to travel between school and home. A map of nearby schools is provided on **Figure 8-2** in **Chapter 8.0, Public Safety and Security, Appendix B2: Physical Resources Technical Report**.

The TEXRail Extension Project is located within the Fort Worth Independent School District (FWISD) attendance boundaries of one elementary school, two 6th grade centers, one middle school, and one high school, as listed in **Table 5**.

Table 5: School Attendance Zones

School	Address
Lily B. Clayton Elementary School	2000 Park Place Avenue, Fort Worth, TX
W.P. McLean 6th Grade Center	3201 South Hills Avenue, Fort Worth, TX
Rosemont 6th Grade Center	3908 McCart Avenue, Fort Worth, TX
W.P. McLean Middle School	3816 Stadium Drive, Fort Worth, TX
R.L. Paschal High School	3001 Forest Park Boulevard, Fort Worth, TX

Source: (FWISD, 2021)

One of these schools, Lily B. Clayton Elementary School, is located within the Study Area. In addition, FWISD's Trimble Technical High School is located within the Study Area at 1003 West Cannon Street and, lastly, Story Stage School, a school not affiliated with FWISD, is located within the Study Area at 2120 Mistletoe Boulevard. All of these schools, including the schools outside of the Study Area but with attendance zones within the Study Area, are depicted in **Chapter 8.0, Public Safety and Security, Appendix B2: Physical Resources Technical Report**.

3.13.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to public safety and security. Any impacts to public safety and security as a result of projects currently planned in the NCTCOG Mobility 2045 Plan, (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b), would be determined and mitigated through the analysis of each individual project.

Fire Protection and Emergency Medical Services: Under the Build Alternative, it is not anticipated the TEXRail Extension Project would necessitate the hiring of additional fire protection personnel in the surrounding community. The concentration of passengers at the proposed Near Southside Station would create the potential for increased demands for emergency medical services. In addition, emergency vehicle response times could be slightly delayed at the Mistletoe Boulevard rail crossing when a commuter rail vehicle passes by approximately 35 to 50 seconds, the typical crossing gate down-time for the TEXRail Extension Project.

Police Protection: As a result of the Build Alternative, the presence of security personnel and other operations staff may serve to hinder crime near the proposed Near Southside Station. The Build Alternative would not be expected to cause any increased demand for municipal police protection or community services. Furthermore, security patrol services for Trinity Metro's Service Area are currently provided by off-duty police officers from the Fort Worth and Richland Hills Police Departments. Police officers patrol stations, board trains, and provide fare enforcement support on a regular schedule.

Vehicular and Pedestrian Rail Crossing Activity: Many of the schools in the Study Area, with the exception of Lily B. Clayton Elementary School and Story Stage School, are located more than 1/2 mile from the TEXRail Extension Project. It is assumed students attending those schools would choose another mode of transportation such as riding the bus versus walking or biking. Lily B. Clayton Elementary School is located within a 1/4 mile from the proposed Near Southside Station for the TEXRail Extension Project and Story Stage School is located adjacent to the project LOD, just south of Newby Park. However, both of these schools are located on the west side of the existing railroad ROW (i.e., on the opposite side of the railroad ROW from the proposed station). It is anticipated students walking or biking to attend these schools would largely be traveling to and from the schools from the Mistletoe Heights neighborhood and surrounding neighborhoods to the west of the existing railroad ROW.

A hazard for students is not anticipated where no residential units are located on the opposite side of a proposed at-grade crossing from the school. Furthermore, if the attendance zone bordered the project, it is assumed that a student walking or biking to school would not have to cross an at-grade crossing as their school would be located on the same side of the project in which they live.

It should also be noted that because freight rail currently operates within the Study Area, school children presently crossing the tracks are already aware of trains crossing their path and the security measures at the at-grade intersection. However, due to the higher frequency of trains when compared to the existing freight traffic, the at-grade crossing at Mistletoe Boulevard would present some increased level of risk for pedestrians at the at-grade crossing at Mistletoe Boulevard.

Furthermore, the at-grade crossing at Mistletoe Boulevard would be protected by flashing lights, bells, and gates alerting vehicles, bicyclists, and pedestrians of approaching trains. This at-grade crossing would be upgraded to a quiet zone prior to the implementation of the TEXRail Extension Project (see **Section 3.6 Noise and Vibration**). Therefore, the extension of commuter rail service would not introduce a new interaction for school children at this existing at-grade crossing. However, the increased

frequency of commuter trains compared to existing freight traffic would require increased awareness at the Mistletoe Boulevard at-grade crossing on the part of pedestrians and cyclists.

For the Build Alternative, due to the frequency of trains when compared to the existing freight traffic, the at-grade crossing at Mistletoe Boulevard would present some increased level of risk for vehicle versus train accidents, particularly when large trucks and tankers cross the intersection.

3.13.3 Mitigation Measures

Prior to construction, hazards, threats, and vulnerabilities would be identified and categorized, and integrative plans in place to resolve them. Each identified and management-approved hazard or vulnerability resolution or mitigation would be added to design and construction requirements and recorded on a tracking list. The list (TEXRail Certifiable Items List) would be used by Trinity Metro safety and security, designers, and construction managers to follow each through the design, construction, and testing process. The detailed procedures for hazard and vulnerability certification, within the design and construction certification requirements, would be included in Trinity Metro's Safety and Security Certification Plan. Once revenue service begins, the hazard management program would be governed by the operating System Safety Program Plan.

3.14 Utilities

This section describes existing utilities within the TEXRail Study Area. For a more detailed discussion of Utilities, please see **Chapter 9.0, Utilities, Appendix B2: Physical Resources Technical Report**.

3.14.1 Affected Environment

Within the Study Area for utilities, defined as the TEXRail Extension Project LOD, exists a diverse collection of utilities owned by 11 utility companies, including 50 underground utilities and 17 aerial utilities. Existing aerial utility lines crossing the Study Area are compatible with the freight cars utilizing the existing freight rail lines. **Table 9-4** in **Chapter 9.0**, **Utilities**, **Appendix B2: Physical Resources Technical Report** provides details of these utilities within the Study Area**.**

3.14.2 Environmental Consequences

Under the No-Build Alternative, the TEXRail Extension Project would not be built and would not have any impacts to utilities in the Study Area. Impacts to utilities as a result of projects planned in the NCTCOG Mobility 2045 Plan (NCTCOG, 2018a), as well as programmed projects in the 2021-2024 TIP for North Central Texas (NCTCOG, 2018b) would be determined and mitigated through the analysis of each individual project.

Under the Build Alternative, since there is no planned substantial excavation within the ROW, an impact to the buried utility lines would not be anticipated. The existing aerial utility lines crossing the Study Area are compatible with the freight cars utilizing the existing freight rail lines, and the existing TEXRail passenger vehicles are smaller than the existing freight cars. Therefore, relocations of aerial utilities would be minimal. In the event utilities must be rebuilt or new construction would be warranted, work would be designed in conformance with requirements of the owning/operating utility company and the jurisdictional agency. Locations and elevations of all existing utilities would be field-verified during final design and the proposed improvements coordinated with all utility companies prior to construction.

3.14.3 Mitigation Measures

Mitigation measures for potential utility impacts as a result of the TEXRail Extension Project may include, but are not limited to, the following:

- Prior to construction, all area utility companies would be contacted through one-call and requested to provide line location measures.
- Businesses and residences affected by utility disruptions during construction of the proposed project would be notified of the disruption at least two weeks in advance, unless there is an emergency situation requiring immediate attention.
- Disruptions in service to businesses would be scheduled during off-business hours and never exceed a 24-hour period except during unusual circumstances.
- Should utilities be discovered during construction that were not previously identified, work would cease in that area and the appropriate utility companies and agencies will be contacted to identify the line(s). The newly identified utilities would not be disrupted until businesses and residences are notified and the utility owner/operator has approved or made the required adjustment.
- Utility adjustment and protection would be closely coordinated with impacted companies and designed to avoid any disruption in service.

3.15 Summary of Environmental Analysis Resource Areas

This EA has been prepared to evaluate the affected environment, identify environmental consequences, and provide mitigation measures as a result of the TEXRail Extension Project. A summary of key findings as a result of the No-Build and Build Alternatives are provided by resource in **Table 6**.

Table 6: Summary of Impacts and Mitigation Measures

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
3.1 Transportation			
Transit	No change to existing Trinity Metro service	Transit service would be enhanced in the Fort Worth Medical District area with the introduction of commuter rail service to the proposed Near Southside Station.	None proposed
Freight Rail	No change from existing freight operations	UPRR and FWWR freight operations would not be impacted.	None proposed
Pedestrian and Bicycle	Sidewalk and bicycle facilities would continue to be implemented in accordance with the *Fort Worth Active Transportation Plan* (City of Fort Worth, 2019).	• The missing sidewalk segment on the north side of Mistletoe Boulevard between Beckham Place and just west of the FWWR tracks would be completed by the City of Fort Worth. A new sidewalk would be constructed along the south side of Mistletoe Boulevard and along both sides of Leslie Street by Trinity Metro to connect to the proposed Near Southside Station. • Bicycle-friendly track crossings would be implemented into the design and at the Mistletoe Boulevard intersection. • The proposed Near Southside Station would offer bicycle racks as an amenity at the station.	None proposed
Traffic	Intersections in the Study Area would operate with an acceptable LOS. Mistletoe Boulevard travel times would remain similar to existing travel times.	• Minimal impact on delay at most intersections in the Study Area. Intersections would operate with an acceptable LOS. • Vehicle travel times along Mistletoe Boulevard, between Forest Park Boulevard and 8th Avenue, showed little impact with the implementation of the Build Alternative.	None proposed

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
Parking	No change from existing parking	• Use of employee parking at Baylor Scott & White All Saints Medical Center. • Potential for on-street overflow parking on surrounding streets.	• Parking spaces for Baylor Scott & White All Saints Medical Center employees would be replaced within the same area. • Signage and enforcement would be used to discourage all-day parking by transit users. • No other mitigation proposed.
3.2 Land Use & Economic Development	May slow pace of development due to lack of an enhanced TEXRail system	A total of 26 parcels would be acquired for the proposed Near Southside Station, and 7 partial acquisitions for the alignment along the east side of the FWWR ROW.	Implement BMPs as described above. No other mitigation proposed.
3.3 Neighborhoods	No change	• Introduction of commuter rail infrastructure into the existing freight railroad ROW would not constitute a new linear barrier that would inhibit neighborhood function or mobility. • Beneficial impacts to the community by increasing regional connectivity and travel options. • Noise impacts to the surrounding communities, including a moderate noise impact to Story Stage School. • No disproportionately high and adverse effects from displacements or acquisitions to environmental justice populations. • Potential delay or deferment of planned projects and conversely the implementation of new projects due to the proposed transit station and enhanced transportation possibilities. • Property values nearby the proposed Near Southside Station area could potentially increase as a result of the additional mobility options. • Potential economic impacts to minority and/or low-income populations would not be anticipated. • During the construction period, potential impacts may include temporary disruption of traffic, temporary noise, and localized air quality impacts.	See mitigation measures in **Section 3.1, Transportation, Section 3.5, Air Quality,** and **Section 3.6 Noise and Vibration**.

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
3.4 Visual Quality	No change	• Low visual impacts since transitway would be compatible with existing transportation ROW. • No visual impacts to users of Newby Park or residents in the Mistletoe Heights neighborhood due to mature trees and vegetation.	Implement BMPs as described above. No other mitigation proposed.
3.5 Air Quality	No positive impacts to the existing air quality levels and not consistent with *Mobility 2045*.	• No adverse air quality impacts. • No exacerbation of a violation of any NAAQS, and with respect to emissions and conformity, project conforms to the SIP.	• No long-term measures proposed • Implement BMPs as described above during construction. No other mitigation proposed.
3.6 Noise & Vibration	No change	• Noise impacts without mitigation would occur at a total of 208 residences, with severe impact at 206 residences and moderate impact at two residences. • No vibration impacts	• Two noise mitigation measures have been identified to mitigate all severe and moderate noise impacts: (1) a quiet zone (already under development by the City of Fort Worth). Wheel/rail lubrication along a curved section of track will be provided to eliminate noise impacts. • No vibration mitigation measures proposed.
3.7 Ecosystems			
Vegetation	No change	• Potential to impact trees and herbaceous vegetation within the ROW. • Areas designated for new tracks and fill embankment would be impacted to a greater extent as these areas would be cleared and graded. • Impacts to vegetation as a result of the project would not be significant.	All necessary permits would be obtained. Implement BMPs as described above. No other mitigation proposed.
Wildlife	No change	• Minor impacts to common wildlife species and their associated habitats would occur. • No migratory birds, their nests, eggs, or young would be harmed. • No Bald Eagles or Golden Eagles would be impacted.	Implement BMPs as described above. No other mitigation proposed.

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
Threatened & Endangered Species	No change	No impacts anticipated.	None proposed (If any federally-listed or state-listed threatened or endangered species are observed during construction, USFWS and/or TPWD would be contacted to request further assistance with appropriate avoidance measures, including relocation of individuals within active and proposed construction areas.)
3.8 Water Resources			
Waters of the U.S.	No change (no potentially jurisdictional waters of the U.S. in the Study Area)	No impacts (no potentially jurisdictional waters of the U.S. in the Study Area).	None proposed
Water Quality	No change	• Construction of the proposed project would involve ground disturbances which may contribute to short-term impacts from erosion and sedimentation. • Hazardous materials, such as petroleum and oil products used for fueling and maintenance of construction equipment, could contribute to pollutant loading if runoff from a spill reaches nearby waterbodies. • Construction of the proposed Near Southside Station would increase the amount of impervious surface influencing stormwater runoff flow and increase potential pollutants.	All necessary permits would be obtained. Implement BMPs as described above. No other mitigation proposed.

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
Groundwater	No change	• No groundwater wells are located within the Study Area. • Potential sedimentation and runoff from construction of the proposed project would not have a direct pathway to groundwater. • Hazardous materials could impact groundwater if runoff from a spill reaches nearby waterbodies potentially leaching through soil into groundwater.	Implement BMPs as described above. No other mitigation proposed.
Floodplains	0 acres	0 acres	None proposed
3.9 Mineral Resources, Geology, and Soils			
Mineral Resources	No change	• Impacts to the three horizontal wells within the Study Area are not anticipated. • All sub-grade utilities would be delineated prior to construction.	None proposed
Geology	No change	No anticipated impacts.	Geotechnical analysis would be performed to identify concerns and determine if unstable locations are in need of improvement so that mitigation measures could be incorporated in the final design.
Soils	No change	Soil erosion could occur during and post construction in areas that require grading and vegetation removal. Impacts would not be significant.	Revegetation or other ground covering would be used to stabilize soils on slopes where grading or vegetation removal have occurred.
3.10 Historic and Archeological Resources			

Historic	No change	Potential to adversely effects to three historic properties (1931 Underpass, 1930 T&P Underpass, and 1925 Steel Trestle Bridge), and the Jennings-Vickery Historic District.	• Potential effects to the 1931 Union Pacific Underpass and the Jennings-Vickery Historic District would be resolved through the existing MOA executed in 2014. • Mitigation for 1931 Underpass and 1925 Steel Trestle Bridge is provided within the draft amended MOA and will likely include: • Historic American Engineering Record (HAER) Level III-like documentation to the SHPO of the 1930 T&P Underpass and 1925 Steel Trestle Bridge, consisting of high-resolution digital photographs and prints, a brief engineering data form, and a brief historic context on the history of railroads in Tarrant County. • Develop and install interpretive signage, one for each resource, regarding the history of railroads in Fort Worth at or near the TEX Rail Near Southside Station. The design content and placement of the signage will be coordinated with the THC and the consulting parties, who will be given the opportunity to review and comment on two drafts of the sign design and content. The THC must approve final design, content, and placement of signs. • Develop a virtual component of historic railroad resources, to include historic context of railroad development, surrounding the TEXRail corridor. The format of the virtual component will be such that it can be accessed by the public at the interpretive signage at stations and potentially in train cars. A draft of the virtual component content will be submitted to FTA and the SHPO in pdf. format, for which a 30-day period will be provided for their review and approval for final online development. Documentation of the installation of the virtual component access and webpage will be provided to FTA and SHPO upon

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
			completion. Produce a historic context and inventory of rail-related resources dating from 1976 or earlier that are located along the TEXRail corridor within a 175-foot buffer. A draft of the documentation will be submitted to the FTA and the SHPO, for which a 30-day period will be provided for their review and approval. Trinity Metro will also provide final documentation to local organizations, including the Tarrant County Historical Commission, City of Fort Worth Historic Preservation Office, and Historic Fort Worth, Inc. • Coordination with Trinity Metro, THC, and FTA regarding this potential mitigation is ongoing.
Archeological	No change	No anticipated effect on archaeological historic properties or SALs.	If any prehistoric or historic human remains or unmarked burials are encountered at any point during construction, the area of the remains should be avoided until a qualified person, as defined by §711.0105(a) under the Texas Health and Safety Code, can determine the status of the remains. No other mitigation is proposed.
3.11 Parklands	No change	• No activities would take place that would result in temporary or permanent use of Newby Park as defined by Section 4(f).). • Access to the park would be maintained. • Noise impact to the park would be severe pre-mitigation. • No visual impacts to park users.	Two noise mitigation measures have been identified to avoid all projected severe and moderate noise impacts: (1) a quiet zone (already under development by the City of Fort Worth) and (2) wheel/rail lubrication (**Section 3.6**) No other mitigation measures proposed.

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
3.12 Hazardous Materials	No change	• One site is considered as a high potential risk and three sites are considered as a medium potential risk. • Impacts from hazardous materials are not anticipated to be significant. All hazardous materials sites would be avoided.	• Additional investigation would be conducted including determining groundwater gradient, available TCEQ files, and construction activities in the area of the site during final design. • If unanticipated sources of hazardous materials are encountered during construction, the construction manager would immediately notify Trinity Metro's Environmental Compliance Division. • Construction waste would be disposed of at approved sites.
3.13 Public Safety and Security	No change	• The project would not necessitate additional fire protection personnel. • Emergency vehicle response times could be slightly delayed at the Mistletoe Boulevard intersection. • Presence of security personnel and other Trinity Metro operations staff may serve to hinder crime at the proposed Near Southside Station. • Impacts to students walking to or from schools in proximity to the project would not be anticipated. • The at-grade crossing at Mistletoe Boulevard would be protected by flashing lights, bells, and gates alerting vehicles, bicyclists, and pedestrians of approaching trains. This at-grade crossing would also be upgraded to a quiet zone. • The at-grade crossing at Mistletoe Boulevard may present some increased level of risk for vehicle versus train accidents due to train frequency and speed.	• Prior to construction, hazards, threats, and vulnerabilities will be identified and categorized. • Each identified and management-approved hazard or vulnerability resolution or mitigation would be added to design and construction requirements and recorded on a tracking list. The list (TEXRail Certifiable Items List) would be used by Trinity Metro safety and security, designers, and construction managers to follow each through the design, construction, and testing process. • No other mitigation would be required.

Resource	No-Build Alternative	Build Alternative	Mitigation Measures
Utilities	No change	• Since there is no planned substantial excavation within the ROW, an impact to the buried utility lines would not be anticipated. • Existing aerial utility lines crossing the TEXRail Extension ROW are compatible with the freight cars utilizing the existing freight rail lines. • Relocations of aerial utilities would be minimal.	• Prior to construction, all area utility companies would be contacted to provide line location measures. • Businesses and residences affected by utility disruptions during construction would be notified of the disruption at least two weeks in advance, unless there is an emergency situation requiring immediate attention. • Disruptions in service to businesses would be scheduled during off-business hours and never exceed a 24-hour period except during unusual circumstances. • Should utilities be discovered during construction that were not previously identified, work would cease in that area and the appropriate utility companies and agencies contacted to identify the line(s). • Utility adjustment and protection would be closely coordinated with impacted companies and designed to avoid any disruption in service.

4.0 AGENCY, STAKEHOLDER, AND PUBLIC INVOLVEMENT

4.1 Agency Involvement

4.1.1 Texas State Historic Preservation Office / Texas Historical Commission

FTA determined the 2.1-mile TEXRail Extension Project is a Federal Undertaking subject to Section 106 of the National Historic Preservation Act of 1966, as amended and initiated consultation for the extension with the Texas State Historic Preservation Office, formally known as the THC, in a letter dated November 24, 2020. Cultural resources investigations for archeological and historic resources were conducted as an update to the previous investigations conducted for the TEXRail Commuter Rail Project to identify potential adverse effects the planned TEXRail Extension could have on historic properties (buildings, structures, objects, historic districts and archeological sites listed in, or eligible for listing in, the NRHP). Additionally, the cutoff date for the historic resources investigation is 1978 (45 years minus the 2023 letting date for construction of the Project) and the APE is the TEXRail Extension footprint and a 175-foot buffer to account for direct and indirect effects to historic properties.

The cultural resources survey reports (one for archeological resources and one for historic resources) were submitted to the THC on April 8, 2021. Due to design changes and shifts in the APE, a supplemental review was submitted to the THC on August 29, 2021. FTA, in consultation with the THC, determined no archeological historic properties will be affected by the Project in a letter dated May 10, 2021. However, in a letter dated May 4, 2021, the agencies determined the TEXRail Extension Project would have adverse effects on the NRHP-eligible 1930 T&P Underpass, due to alterations to the bridge; and on the NRHP-eligible 1925 Steel Trestle Bridge, due to the proposed removal of the bridge. In a letter dated September 7, 2021, the agencies also determined the design changes and shifts in the APE will not affect any additional historic properties.

In consultation, FTA and THC determined the TEXRail MOA executed on September 19, 2014, between the FTA, THC and Trinity Metro should be amended to include stipulations for the mitigation of adverse effects to the 1930 T&P Underpass and 1925 Steel Trestle Bridge. FTA notified the Advisory Council on Historic Preservation of the adverse effects under 36 C.F.R. 800.6 and invited the Council to participate in consultation, which it declined in a letter dated July 19, 2021. FTA submitted a draft of the amended MOA to the THC for review on June 30, 2021, receiving comments on July 8, 2021. A revised draft of the amended MOA was submitted to the THC, Trinity Metro, and Consulting Parties on September 22, 2021, with THC comments received on October 8, 2021. The Consulting Parties meeting, held October 14, 2021, produced additional mitigation measures to be included in the amended MOA, which was revised and submitted to the THC October 21, 2021, receiving concurrence on October 22, 2021. Coordination with Trinity Metro, THC, Consulting Parties, and FTA is ongoing.

4.1.2 Tribal Coordination

FTA led government-to-government consultation with potentially affected tribes. Letters were sent to tribes on July 13, 201. There have been no responses from these tribes to date.

4.1.3 Consulting Parties

FTA initiated consultation with potential consulting parties (Mistletoe Heights Neighborhood Association, Bricktown Neighborhood Association, City of Fort Worth Historic Preservation Office, Texas and Pacific Lofts Homeowners Association, Sunset Terrace Neighborhood Association, Berkeley Place

Neighborhood Association, Historic Fort Worth, Inc., Fairmount Neighborhood Association, and Tarrant County Historical Preservation Officer) in letters dated March 29, 2021. A copy of the draft amended MOA was sent to the Consulting Parties for review and comment on August 18, 2021. Comments were received on August 24, 2021, with the revised draft amended MOA submitted to the THC, Trinity Metro, and Consulting Parties for a second comment period on September 22, 2021. A meeting with the THC, Trinity Metro, and Consulting Parties was held on October 14, 2021. Coordination with Trinity Metro, THC, Consulting Parties, and FTA is ongoing.

4.2 Stakeholder Involvement

The Project Team met regularly with project stakeholders throughout the TEXRail Extension EA and Conceptual Engineering phase of the project. Regular coordination meetings were held with FTA, TxDOT, the City of Fort Worth, FWWR, UPRR and others. Stakeholders regularly engaged during this phase of the project are listed below:

- TxDOT
- UPRR
- FWWR
- FTA Region 6
- City of Fort Worth (various departments)
- NCTCOG
- Baylor Scott & White All Saints Medical Center
- THC
- Mistletoe Heights Neighborhood Association
- Near Southside, Inc.
- Consulting Parties

4.3 Public Involvement

The first public meeting held virtually due to the pandemic, for this TEXRail Extension Project was conducted at 6:00 pm on Thursday, April 15, 2021.

A project website was specifically designed to exchange information with those who were interested in learning about and contributing to the project and to provide a landing site for virtual public meetings. The website was launched on January 1, 2021 and was actively promoted beginning March 22, 2021. The project website address is: bit.ly/TEXRailPlanning.

The project team identified eight distinct categories of audiences associated with the TEXRail Extension Project, who were invited to the public meeting:

1. Representatives from the Fort Worth Hospital District/Baylor Scott & White All Saints Medical Center – This group is comprised of healthcare facility leaders. This group assists with information distribution, offer insight into programs or activities that could impact station planning and concept selection, and provide feedback on findings and recommendations.
2. Neighborhood/Homeowner Associations (NA/HOA) – NA leaders were invited for station and concept review. The closest NA is Mistletoe Heights, but the project team developed a complete list of those within the vicinity.
3. Current and projected TEXRail customers
4. Adjacent property owners
5. Agency Representation – These are representatives from area agencies with a potential interest in the project, including, but not limited to, the NTTA, NCTCOG and COFW engineering departments.
6. Elected and public officials who represent the Study Area

7. Resources Agencies – This category consists of representatives from environmental and technical agencies who may have an interest or stake in station review.
8. Public – This category includes residents, visitors, business owners, students, commuters, and a host of others.

The project team distributed postcards to a comprehensive list of these neighboring stakeholders. Postcards were distributed on March 22, 2021, and they encouraged stakeholders to visit the project website to participate in the meeting and view supplemental information. Furthermore, an in-depth social media campaign launched on March 22, 2021.

The virtual public meeting utilized a live PowerPoint presentation format, followed by Questions and Answers through the project website's chat mechanism. The length of the meeting was 47 minutes in length. The presentation, as well as the Questions and Answers session, was recorded and placed on the project website.

The comment period was active from Thursday, April 15, 2021, through midnight on Friday, April 30, 2021. During that time, the virtual meeting materials received 657 views. During the live broadcast, an estimated 220 views were counted. Stakeholders were provided with several options for placing comments including the website, voice, email, and mail.

In total, 60 comments were received (**Appendix D: Public Meeting Materials**). Fifty-six (56) of those were website postings and three (3) were emailed. No voice recordings and no standard mail comments were received. Responses to comments are also included in the Appendix).

Following the virtual public meeting, Questions and Answers exchanged during the live session were posted to the project website. The project team received 657 viewings of the station planning virtual public meeting materials. Most of the viewings linked from the social media portion of the project in which there were 249 viewings via Facebook. The following matrix provides a breakdown of viewership connections.

Table 7: Public Meeting Viewership Connections

Count	Domain
172	m.facebook.com
128	publicinput.com
128	t.co
77	l.facebook.com
70	bit.ly
46	www.fortworthtexas.gov
25	lnks.gd
6	www.google.com
3	admin.govdelivery.com
2	ridetrinitymetro.org
657	**TOTAL**

Source: Public Information Associates, 2021.

The second public meeting for this TEXRail Extension Project is scheduled to be held virtually at 6:00 pm on Tuesday, November 16, 2021. The meeting will focus on the Final EA. Similar to the first public meeting, The project team distributed postcards to a comprehensive list of these neighboring stakeholders. Postcards were distributed on October 22, 2021, and they encouraged stakeholders to visit the project website to review the EA and to participate in the virtual public meeting.

5.0 LITERATURE/SOURCES CITED

City of Fort Worth. 2019. Fort Worth Active Transportation Plan. (Website: https://www.fortworthtexas.gov/files/assets/public/development-services/documents/atp/active-tranport-plan.pdf) (Accessed January 25, 2021).

Elliott, Lee F., Amie Treuer-Kuehn, Clayton F. Blodgett, C. Diane True, Duane German, and David D. Diamond. 2009-2014. Ecological Systems of Texas: 391 Mapped Types. Phase 1 – 6, 10-meter resolution Geodatabase, Interpretive Guides, and Technical Type Descriptions. Texas Parks & Wildlife Department and Texas Water Development Board, Austin, Texas. Documents and Data Available at: http://www.tpwd.state.tx.us/gis/data/downloads#EMS-T.

FEMA. 2019. Digital Flood Insurance Rate Map for Tarrant County, Texas and Incorporated Areas, Map Panel Number 48439C035L (effective March 21, 2019).

FTA. 2019. Standard Operating Procedures for Managing the Environmental Review Process. https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/environmental-standard-operating-procedures (Accessed May 4, 2021).

FWISD. 2021. SchoolSite Locator Viewer. (Website: http://apps.schoolsitelocator.com/?districtcode=72947#). (Accessed March 4, 2021).

NCTCOG. 2018a. Mobility 2045: The Metropolitan Transportation Plan for North Central Texas. https://www.nctcog.org/trans/plan/mtp/2045 (Accessed February 16, 2021).

NCTCOG. 2018b. Transportation Improvement Program for North Central Texas, 2019-2022, Project Listings – Updated 5/10/18. 2014. https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Fund/TIP/21_24TIP/Chapter7_070820.pdf (Accessed February 16, 2021).

NCTOG. 2018 c. Transportation Conformity Determination for the North Central Texas Nonattainment Area Including Mobility 2045: The Metropolitan Transportation Plan for North Central Texas (Mobility 2045) and the 2019-2022 Transportation Improvement Program for North Central Texas (2021-2024 TIP) https://www.nctcog.org/trans/quality/air/federal-air-quality/conformity (Accessed May 4, 2021).

NCTCOG. 2019. 2045 Demographic Forecast, 2019. (Website: https://data-nctcoggis.opendata.arcgis.com/datasets/2045-nctcog-demographic-forecast-tsz) accessed February 9, 2021.

TPWD. 2020a. Annotated County Lists of Rare Species, Tarrant County. https://tpwd.texas.gov/gis/rtest/ (last revision 8/25/2020).

TPWD. 2020b. Texas Natural Diversity Database. Data requested via email to TexasNatural.DiversityDatabase@tpwd.texas.gov (received January 4, 2021).

USCB. 2019. 2019 ACS 5-Year Estimates, 2019. (Website: https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/) accessed, January 14, 2021.

USFWS. 2021. Endangered Species list for Tarrant County. Information for Planning and Consultation. http://ecos.fws.gov/ipac/gettingStarted/index (accessed March 4, 2021).