



Appendix B

Technical Memoranda and Reports

Disclaimer:

Technical memoranda and reports were prepared as independent documents to support the preparation of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Dallas CBD Second Light Rail Alignment (D2 Subway). Information from these documents was incorporated into the SDEIS to provide information on existing conditions, and in some cases, assess potential impacts to the resources. Information contained in the SDEIS is the most current and supersedes information in the technical memoranda and reports.



B-1

Land Use Existing Conditions Technical Memorandum



Technical Memorandum

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Project: Task Order 39 – D2 Subway

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Subject: DART GPC VI – Contract C-2012668; D2 Subway Project Environmental Land Use Existing Conditions; HDR PN 10024656

Introduction

This technical memorandum describes the existing land use within the study area for the proposed Dallas Area Rapid Transit (DART) D2 Subway Project. Existing land use is discussed in the context of understanding the relationships between land use policies and regulations, market conditions, and the D2 Subway proposed alignment.

The D2 Subway Project would be located in the Dallas Central Business District (CBD), an area characterized by commercial buildings, art and cultural centers, recreational facilities, City Hall and other governmental sites, mixed-use residential, parking lots and small parks. Residential housing is predominantly limited to multi-family housing units typically in mixed-use developments. A majority of the CBD is already developed; however, areas of vacant land, predominantly surface parking lots, are available for future development, while some developed but underutilized parcels are ripe for redevelopment.

Regulatory Setting

Zoning is the division of land into districts. These districts have uniform zoning regulations including those on land use, height, setbacks, lot size, density, coverage, and floor area ratio. Zoning ordinances approved by local municipal jurisdictions form the framework for regulating land uses within city limits. The basis for this regulatory power at the local level comes from Chapter 211, Municipal Zoning Authority, of the Texas Local Government Code.

Land uses in the City of Dallas are regulated by the City's Current Planning Department through predefined zoning designations. Zoning regulations help ensure that the City of Dallas grows and changes in a managed, predictable way to help safeguard the health, safety and welfare of the general public.

The D2 Subway Project is contained entirely within the City of Dallas. Zoning around the D2 Subway proposed alignment and stations includes the following categories: Planned Development Districts (PD), Specific Use Permits (SUP), Central Area (CA-1(A)), Central Area (CA-2(A)) and Mixed-Use (MU-3).



Methodology

A study area of 0.5 mile on either side of the D2 Subway proposed alignment was used to evaluate existing land use (**Exhibit 1**). Existing land uses for all parcels within the study area were reviewed utilizing 2015 land use data accessed from the North Central Texas Council of Governments (NCTCOG) Regional Data Center and existing (2017) and projected population and employment data from both the U.S. Census Bureau and the NCTCOG. The study area was categorized using this data to identify the most recent condition as well as trends of development through the use of ArcGIS mapping and analysis. The study area land uses were then compared to existing City of Dallas city-wide land use data, and a comparison between the two data sets was conducted. Limited field verification of existing land use was conducted in July 2018 with further verification conducted through online research using Google Earth.

The above methodology is consistent with DART's *Environmental Impact Assessment and Mitigation Guidelines for Transit Projects* and with Federal Transit Administration (FTA) land use planning guidance.

Existing Conditions

Regional Summary

The DART service area covers an area of 700 square miles with 13 member cities. According to the 2017 U.S. Census estimate, the City of Dallas has a total population of 1,341,075. Dallas is the ninth largest city in the U.S. and the third largest city in Texas. The Dallas-Arlington-Fort Worth Metropolitan Statistical Area (Dallas MSA) consists of 13 counties: Wise, Denton, Collin, Hunt, Parker, Tarrant, Dallas, Rockwall, Kaufman, Hood, Somervell, Johnson, and Ellis. The estimated 2017 population for the Dallas MSA was 7,399,662 according to the 2017 U.S. Census estimate, making it the largest metropolitan area in both Texas and the Southwest, and the fourth-largest in the U.S. The Dallas MSA covers 6,165,350 acres. The City of Dallas has a total land area of 246,342 acres.

As shown in **Table 1**, the leading land uses for the City of Dallas are single-family residential, parks and recreation, and water, which combined comprises approximately 54% of city-wide land uses. The "other" land use category includes airports, cemeteries, communication, farmland, flood control, group quarters, improved acreage, landfill, large stadium, mobile home, railroad, ranch land, residential acreage, runway, timberland and utilities.



Table 1. City of Dallas Existing Land Use

Land Use	Acres	Percentage
Airport	585.31	0.2%
Cemetery	1,245.73	0.5%
Commercial/Office	18,080.14	7.6%
Education/Institutional	10,037.66	4.2%
Hotel	457.69	0.2%
Industrial	8,405.44	3.5%
Multi-Family	10,821.63	4.5%
Parking	378.08	0.2%
Parks and Recreation	34,599.60	14.5%
Railroad	1,386.15	0.6%
Retail	1,865.34	0.8%
Single-Family	61,701.25	25.9%
Vacant	26,113.99	10.9%
Water	32,280.01	13.5%
Other	30,551.30	12.9%
Total	238,509.32	100.0%

Sources: NCTCOG, 2015 Land Use. GP6 Team, July 2018.

Study Area Existing Land Use

The study area is approximately 1,909 acres in size and encompasses approximately 3 square miles, including the CBD. The study area also includes all or a portion of the following districts in downtown Dallas: Design, Victory Park, Uptown, Arts, Riverfront, West End Historic, Thanksgiving Commercial Center, Baylor, Main Street, Civic Center, Reunion/Union Station, Farmers Market, and Deep Ellum. **Table 2** provides a summary of each of these districts.



Table 2. Summary of Study Area Districts

District	Description
Design	Located between Stemmons Freeway and the Trinity River at Oak Lawn. This district contains a variety of retail outlets, featuring a wide variety of merchandise (antique malls), services and art, as well as office spaces. A growing market of mixed-use and residential lofts and condominiums are being developed.
Victory Park	Master planned development with modern office, residential, entertainment, and mixed-use projects, centered on the American Airlines Center, and home to the Dallas Mavericks and Dallas Stars. The area features public plazas with outdoor art and special events. As part of a prior agreement, DART owns a surface transit right-of-way through the area from Victory Station to Woodall Rodgers Freeway.
Uptown	A dense, urban mixed-use district which includes the State Thomas neighborhood. The area includes high-rise condos, townhouses, office towers and mixed-use developments and serves as a popular entertainment district with numerous restaurants, bars, shops, and services along McKinney Avenue, the spine road of the district.
Arts	This district is bound by Ross Street to the south, Woodall Rodgers Freeway to the north, Field Street to the west, and Julius Schepps Freeway to the east. Home to a number of facilities and institutions that attract visitors from throughout the region, including cultural, educational and religious facilities, such as the Dallas Museum of Art, Nasher Sculpture Garden, Morton H. Meyerson Symphony Center, and the Dallas Center for the Performing Arts. Popular for concerts, outdoor festivals, lectures, youth educational programs, and other cultural programs and home to a growing number of office and residential towers.
Riverfront	As the front door to the Trinity River, this district has created one of the most significant changes to the Dallas skyline with the construction of the Margaret Hunt Hill Bridge, designed by internationally renowned architect and engineer Santiago Calatrava. From an array of unique antique shops to the famous tacos and longhorns of Fuel City, the Riverfront District is home to some of Dallas’ most-loved stops. The district is experiencing rapid development and redevelopment centered along Riverfront Boulevard, including an eclectic mix of restaurants, retail, and mid-rise apartments and mixed-use developments.
West End Historic	This district contains a collection of restored warehouses that served Dallas’ early railroad terminals. These buildings now house a collection of restaurants, offices, and apartments. This district contains Dealey Plaza, the site of the Kennedy assassination, as well as the John F. Kennedy Memorial, El Centro College, and Dallas World Aquarium. New mixed-use developments have been built that mimic the West End’s original red brick architecture. The area was initially revitalized in the 1990s as an entertainment district and has experienced a second building boom in recent years.
Thanksgiving Commercial Center	Located in the heart of downtown Dallas, this district is a dense, urban environment consisting of many iconic skyscrapers and several landmarks, including Thanksgiving Tower, Thanksgiving Square, Bryan Tower, and Plaza of the Americas. While traditionally an office-focused district, several conversions of older skyscrapers have made the district more mixed-use in nature, with the addition of residences and ground floor retail.



District	Description
Baylor	Baylor University Medical Center anchors this district, which is comprised of pedestrian-friendly streets, historic homes, condos and apartments. This district is home to several nonprofit organizations located along Swiss Avenue, as well as the Latino Cultural Center, Bryan Place neighborhood, and Exall Park.
Main Street	This district, the historic core of downtown Dallas, has seen rapid redevelopment over the past two decades. The Neiman Marcus flagship store, Comerica Bank Tower, Bank of America Plaza, The Joule, Magnolia Hotel, The Adolphus, and numerous restaurants combine to form the central space known as the Main Street District. With landmarks such as Main Street Garden, Belo Garden, Stone Street Gardens, and Pegasus Plaza, as well as historic buildings that have been converted to residential buildings, the Main Street District has become a true 24/7 live, work, and play environment.
Civic Center	Home to the Omni Dallas Hotel and the Kay Bailey Hutchison Convention Center, one of the largest convention centers in the country, this district is the regional hub of many landmark destinations. Within the district is Dallas City Hall, Earle Cabell Federal Building and Courthouse, J. Erik Jonsson Central Library, George L. Allen Sr. Courts Building, Pioneer Plaza, and Pioneer Park Cemetery.
Reunion/ Union Station	This district, originally named La Reunion by 200 French colonists in the mid-1800s, is widely known for two primary landmarks: Reunion Tower and Union Station. Reunion Tower, one of Dallas' most iconic symbols, includes Five Sixty, a restaurant by Wolfgang Puck. Union Station is a hub for the Trinity Railway Express, DART Light Rail, and Amtrak Intercity Rail. This district is also the planned location of the downtown Dallas High Speed Rail station which will have direct connections to DART Light Rail, the Trinity Railway Express, Amtrak, and the Dallas Streetcar.
Farmers Market	Anchored by the Dallas Farmers Market, which has been providing the people of Dallas with fresh fruits, vegetables, and meats for more than six decades, this district encompasses a large area bounded by Jackson Street, North Central Expressway, R.L. Thornton Freeway, and St. Paul Street. Not only does this district offer unique food and specialty vendors, including the newly enclosed Shed 2, but it is also home to a collection of historic buildings, contemporary townhomes, and apartments. This district has experienced huge growth in residential development over the past decade, mainly townhomes and apartments, with additional developments under construction and planned over the next few years.
Deep Ellum	Nestled east of downtown Dallas, this district was established as Freedman's Town by former slaves after the Civil War. Today it is an eclectic entertainment district comprising avant-garde shops, nightclubs, art galleries, restaurants, and loft and apartment developments. The district is currently experiencing rapid development and redevelopment with several large developments planned or under construction, including the dense mixed-use Epic Development immediately east of SH 345 on Elm Street.

Sources: Dallas Regional Chamber, 2018. GP6 Team, April 2019.

Exhibit 1 illustrates existing land use for the study area. Land use across the study area is diverse and includes commercial/office, industrial, education/institutional, park and public space, and multi-family residential in and around the CBD. Study area land uses outside the CBD are primarily characterized by commercial/office, retail, hotel, multi-family, institutional and utilities in the surrounding districts.



The Dallas CBD is the core of the study area. The predominant land use within the CBD is commercial/office buildings. Downtown Dallas is the location of over 2,500 businesses representing the region’s major industries: accounting, advertising, banking, architecture, communications, finance, government, law, hospitality, insurance, real estate, and trade. The largest land use in the study area is commercial/office, with the second largest land use being education/institutional.

Within the last decade, the downtown area has experienced a rapid increase in multi-family residential housing. According to the NCTCOG, nearly 11,000 people reside within the Dallas CBD, an increase of nearly 136% since the year 2000. In terms of employment, approximately 170,000 people were employed in the downtown area in 2000. For the same area in 2009, approximately 190,000 were employed; by 2030 this is forecasted to increase to 245,000.

Table 3 shows the number and percentage of acres by land use category for the study area. The study area consists primarily of commercial/office, education/institutional, parking and multi-family residential land uses which differs from the City of Dallas. Commercial/office is the most common land use, accounting for nearly 33% of the study area. Education/institutional and parking account for over 15% and over 10%, respectively, of study area land uses compared to only 4% and less than 1%, respectively, for the City of Dallas. Less than 2% of the study area land use is single-family residential compared to nearly 26% for the City of Dallas. Multi-family residential comprises over 14% of the study area compared to 4.5% for the City of Dallas. Over 72% of the study area land use consists of commercial/office, education/institutional, multi-family, and parking; whereas, these land uses make up less than 17% of the City of Dallas city-wide land uses.

Table 3. Study Area Existing Land Use

Land Use	Acres	Percentage
Airport	3.58	0.3%
Cemetery	3.39	0.3%
Commercial/Office	380.07	32.7%
Education/Institutional	176.09	15.1%
Hotel	39.14	3.4%
Industrial	34.38	3.0%
Multi-Family	163.65	14.1%
Parking	121.79	10.5%
Parks and Recreation	43.58	3.7%
Railroad	11.22	1.0%
Retail	8.19	0.7%
Single-Family	15.56	1.3%
Vacant	114.36	9.8%
Other	47.65	4.1%
Total	1,162.65	100.0%

Sources: NCTCOG, 2015 Land Use. GP6 Team, July 2018.



Current Development Trends

Development along the D2 Subway proposed alignment is thriving. Commercial/office, multi-family residential, and mixed-use developments are underway along all segments of the alignment. Victory Park, a planned development, is currently in the final phase of build out with high-rise office and residential towers under construction and new ground-floor retail establishments opening throughout the development. Within the CBD, infill residential and mixed-use developments are common and the few remaining vacant office buildings are being renovated and repurposed into a variety of hotel, multi-family residential and mixed-use development. Additionally, there are numerous surface parking lots that are ripe for redevelopment.

The east end of downtown and across IH 345 into the western edge of Deep Ellum is currently experiencing a development boom as a number of developers are currently constructing or have plans to soon begin construction on a variety of mixed-use developments, ranging from low-rise commercial/retail developments to high-rise mixed-use developments. The Epic development in Deep Ellum is the largest of these and is adjacent to the D2 Subway proposed alignment on the western edge of Deep Ellum. The mixed-use Epic development will contain 250,000 square feet of office space, a 140,000 square-foot hotel, a 26-story residential high-rise and will include the renovation of the historic Knights of Pythias Temple building which will contain a portion of the hotel.

The Research and Information Services Department of the NCTCOG tracks major developments for the 16-county region as part of the Development Monitoring Program. Additionally, Downtown Dallas Inc. tracks major developments within the greater Downtown Dallas core. **Table 4** provides a summary of developments recently completed (2017), under construction, announced, or speculated within the study area and accounts for the following types of projects: cultural (museums and concert halls), education (public grade schools, colleges, universities), hotel (hotels and motels), mixed-use, multi-family (apartments, townhouses and condos with at least 100 units), office (offices with at least 100,000 square feet or 400 employees), parking garages, recreation, retail, service (restaurants) and single-family developments. The number of developments by district are shown as well.



Table 4. Current Developments within the Study Area

Development Type	Recently Completed	Under Construction	Announced	Speculated	Total	Districts Containing Developments
Cultural	0	1	0	2	3	Civic (1); West End (2)
Education	0	2	0	1	3	West End (1); Baylor (1); Main Street (1)
Hotel	6	1	2	1	10	West End (1); Main Street (3); Deep Ellum (1); Civic (1); Reunion (1); Victory (1); Uptown (1); Baylor (1)
Mixed-Use	8	5	9	0	22	Design (3); Riverfront (2); Farmers Market (1); Deep Ellum (1); Arts (4); Civic (2); Main Street (3); Uptown (4); Victory (2)
Multi-Family	16	8	3	1	28	Main Street (6); Deep Ellum (3); West End (2); Farmers Market (6); Uptown (2); Baylor (2); Victory (5); Arts (2)
Office	10	5	9	2	26	Arts (3); West End (4); Reunion (1); Civic (1); Main Street (6); Deep Ellum (2); Design (1); Farmers Market (2); Uptown (3); Victory (3)
Parking	3	1	2	0	6	Deep Ellum (1); Main Street (2); Arts (2); Civic (1)
Recreation	1	2	3	0	6	Farmers Market (3); Main Street (2); West End (1)
Retail	9	0	0	0	9	Deep Ellum (7); Main Street (1); Victory (1)
Service	1	4	0	0	5	Main Street (1); Deep Ellum (3); Victory (1)
Single-Family	1	0	0	0	1	West End (1)
Total	55	29	28	7	119	

Sources: NCTCOG, Research and Information Services Department, 2018. GP6 Team, September 2018. Downtown Dallas Inc., March 2019.



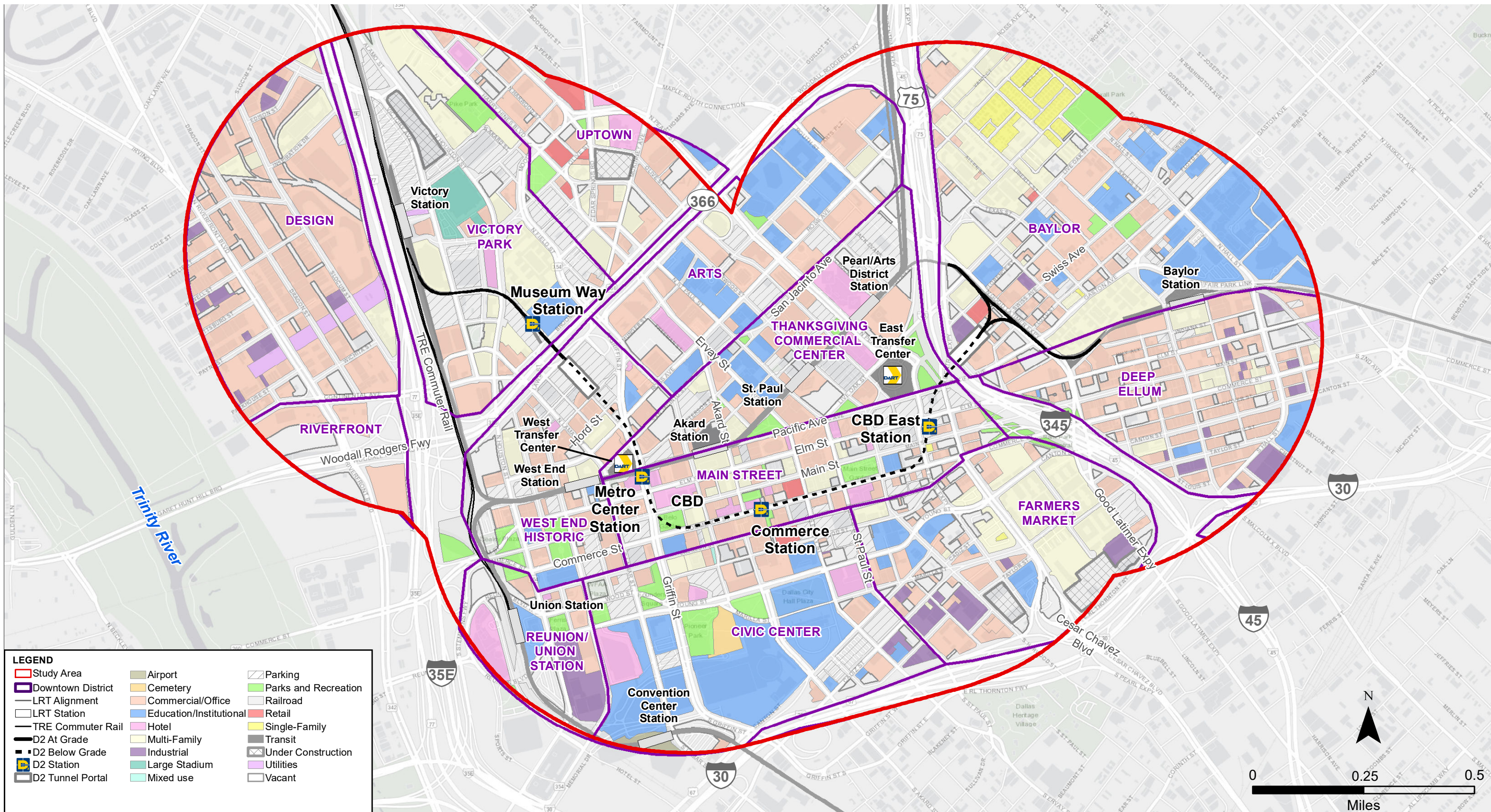
Future Land Use Plans

The D2 Subway Project is contained entirely within the City of Dallas and predominantly within the CBD. A number of long-range plans exist or are currently under development within the project study area including plans specific to individual districts such as the Arts District or AT&T's proposed Discovery District, parks and trails plans, complete streets plans for specific thoroughfares downtown, and the City of Dallas' upcoming Strategic Mobility Plan which will encompass the study area. However, the overarching plan for the study area is the *Downtown Dallas 360 Plan* which was adopted by the City of Dallas in 2017.

The *360 Plan* is a strategic document that sets a clear, cohesive vision for Downtown Dallas and its surrounding neighborhoods. Building upon the strategies found in the original plan, adopted in 2011, the *360 Plan* is organized around the idea of creating a complete and connected City Center that provides an enriching urban experience for area residents, workers, and visitors. The public-private planning process coalesced into a unified vision and three transformative strategies to advance urban mobility, build complete neighborhoods and promote great placemaking. The D2 Subway Project and, more specifically, the adopted locally preferred alternative are included in the *360 Plan*. The project is a vital component of the plan and the ability to successfully create the vibrant and connected urban core envisioned in the *360 Plan*.

Attachment

Exhibit 1 – Existing Land Use



LEGEND		
Study Area	Airport	Parking
Downtown District	Cemetery	Parks and Recreation
LRT Alignment	Commercial/Office	Railroad
LRT Station	Education/Institutional	Retail
TRE Commuter Rail	Hotel	Single-Family
D2 At Grade	Multi-Family	Transit
D2 Below Grade	Industrial	Under Construction
D2 Station	Large Stadium	Utilities
D2 Tunnel Portal	Mixed use	Vacant



Exhibit 1 Existing Land Use

Data Sources: DART GPC6, 2018;
NCTCOG, 2015; Dallas 360 Plan, 2017.

D2 Subway Project

Supplemental Draft Environmental Impact Statement