

North Central Texas
Council of Governments



DART Red & Blue Line Corridors Last Mile Connections Project

Final Report

City of Dallas

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1. Introduction

One of the biggest challenges our nation's transit agencies face is finding a way to increase ridership in light of limited revenues. As is the case with many American cities, large portions of Dallas and its adjacent suburban areas have a relatively low population density level, which may make travel by transit a less viable option.

As an indication of these preferences, population density has been growing near transit stations along the Dallas Area Rapid Transit (DART) Blue and Red lines in the cities of Dallas, Garland, Plano, and Richardson. As ridership increases, the effects of existing gaps in infrastructure or barriers to pedestrian and bicycle accessibility at DART stations becomes more evident. These barriers have the potential to suppress the demand for rail traffic, increase motorized traffic to and from the rail stations, or increase safety risks for the roadway's most vulnerable users.

Coordination between transit agencies and city transportation offices is necessary in targeting first and last mile improvements that produce the greatest benefits while planning for anticipated costs. In support of these efforts, the North Central Texas Council of Governments (NCTCOG) initiated this study to verify existing needs and to prioritize identified improvements for twenty-eight stations and their adjacent developed areas within the cities of Dallas, Garland, Plano, and Richardson.

1.1 Objectives

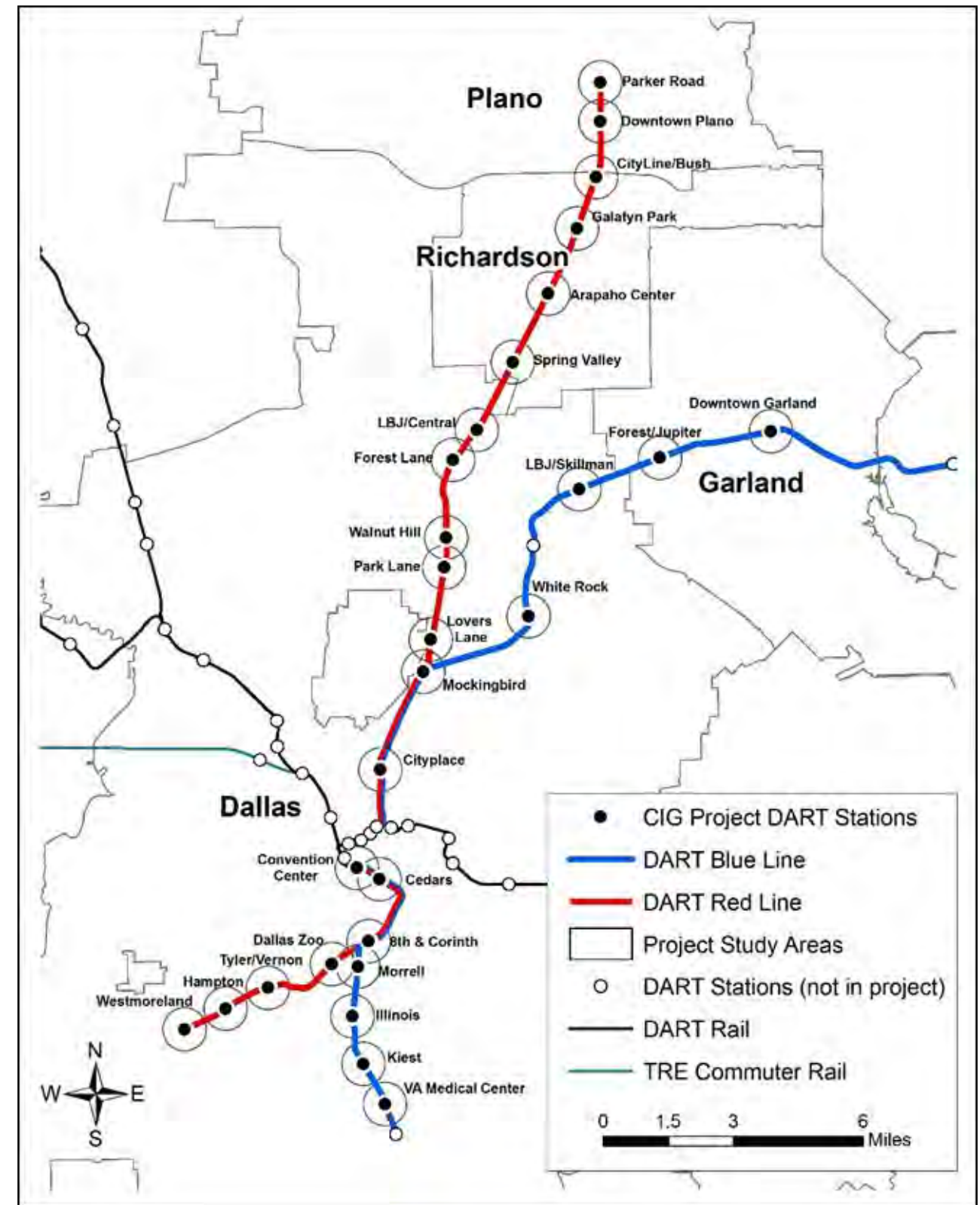
The project's objective is to provide opportunities for the greatest number of additional people to walk or bike to DART stations by identifying necessary sidewalk, shared use path, crosswalk connections, and related infrastructure within and surrounding the various DART stations. This was accomplished by:

- Conducting field investigation of existing pedestrian and bicycle infrastructure in the study area.
- Verifying the need for recommended pedestrian and bicycle improvements in priority corridors identified by NCTCOG to improve access and connectivity to light rail stations for the greatest number and density of residents and workers, thus increasing potential transit ridership.
- Identifying additional improvements based on field review, as necessary.
- Reviewing and updating NCTCOG's prior draft project prioritization of improvements based on information gathered during field review, engineering judgment, and criteria to be coordinated with City and DART staff stakeholders.
- Developing opinions of probable cost, and schematics for key pedestrian and bicycle improvements at rail stations and along prioritized routes to stations.

1.2 Study Area

The study area focused on the twenty-eight DART light rail stations built prior to 2004, included in the Red and Blue Line Platform Extension Project corridors, as shown in Figure 1.

Figure 1: Map of Study Area DART Stations



These stations are part of the Federal Transit Administration (FTA) Core Capacity Enhancement Capital Investment Grant, which made them eligible for FTA planning funds. Per FTA guidance, the one-half mile radius from the station is the effective planning area for transit-oriented development (TOD). These DART rail stations and their adjacent developed areas are located in the cities of Dallas, Garland, Plano, and Richardson.

While the intent of the planning work was to create corridor-level planning recommendations, not all areas surrounding all stations were reviewed using the same level of detail as part of this study; rather, strategic streets and sites within a broad selection of stations that were expected to be most cost effective were targeted for more thorough review.

1.3 Station Numbering & Report Organization

The system developed to organize improvements identified in the deliverables is illustrated in Figure 2. Each red or blue colored box in the figure represents a Red or Blue Line DART station respectively, arranged geographically from north to south. Purple boxes represent stations where the Red and Blue Lines run concurrently on the same alignment. Two-digit alpha-numeric codes assigned to each station are shown to the left of each box.

This report is organized for specific use by the City of Dallas. Other volumes of this report have been provided to other project stakeholders (NCTCOG, DART, Garland, Plano and Richardson) which include similar details relevant to their jurisdictions. Figures common to all volumes of the report are numbered 1, 2, 3, etc. Figures specific to the City of Dallas have figure numbers beginning with the code (4A, 4B, 4C, etc.) assigned to each station.

1.4 Station Area Half-Mile Boundaries

The half-mile radii of some stations overlap. In most cases, the overlapping areas were divided equally between the two (or three) station areas for ease of reporting.

2. Methodology

The consultant group conducted field investigations for each of the twenty-eight DART station properties and surrounding one-half mile areas within the study area to examine existing conditions of pedestrian and bicycle infrastructure and to determine potential improvements. Field visits for each station were made between July 2018 and January 2019. Specific dates are listed in Appendix A.

Figure 2: Project Station Numbering Schematic

City	Station ID	Red Line	Station ID	Blue Line	
Plano	1A	Parker Road			
	1B	Downtown Plano			
	1C	City Line/Bush			
Richardson	2A	Galatyn Park			
	2B	Arapaho Center			
	2C	Spring Valley			
Garland			3A	Downtown Garland*	
			3B	Forest/Jupiter*	
Dallas	3C	LBJ/Central			
	3D	Forest Lane			
	4A	Walnut Hill			
	4B	Park Lane	4E	LBJ/Skillman	
	4C	Lovers Lane*	4F	White Rock	
	4D	Mockingbird			
	8A	Cityplace			
	8B	Convention Center			
	8C	Cedars			
	5A	8th & Corinth			
	5B	Dallas Zoo*	5C	Morrell	
	6A	Tyler Vernon	7A	Illinois	
	6B	Hampton	7B	Kiest	
	6C	Westmoreland	7C	VA Medical Center	

* Station with high priority improvements for 15% design

2.1 Field Survey (DART Station Properties)

The consultant group documented the existing pedestrian, bicycle, bus, and motor vehicle circulation and patterns, as well as the wayfinding, signage, and lighting at each station. Potential station-area improvements were then identified, including sidewalks, curb cuts, crosswalks, shared use paths, lighting and wayfinding, among others.

In many locations, signage for motorized and nonmotorized users needs to be updated in order to conform with the Manual on Uniform Traffic Control Devices (MUTCD).

Many pedestrian facilities were observed to be non-compliant with Americans with Disabilities Act (ADA) regulations. While a full inventory of all ADA infrastructure was outside the scope of this study, some example problems have been identified in the recommendations. It is recommended that DART conduct complete accessibility reviews to identify and correct all such concerns within DART station properties.

2.2 Field Survey (Half-Mile Radii)

Inventories were developed of all proposed improvements within one-quarter mile of each station. Streets within one-quarter mile where existing sidewalks had been preliminarily identified as acceptable condition by NCTCOG were reviewed quickly by a combination of walking, biking, and/or driving. Within one-half mile of each station, the consultant team also reviewed corridors labeled as "Primary Routes" on NCTCOG's prior in-house mapping. Of the Primary Routes, certain corridors in Dallas (that will be identified later in this report) had been identified by NCTCOG for preliminary engineering with 15 percent design schematic development. These select corridors received special attention during the field surveys to verify feasibility of construction.

The primary focus of data collection efforts was information about major barriers to walking or biking to the stations. These included:

- Missing sidewalk links
- Unprotected crossings
- Proximity to high-speed auto traffic
- Multi-lane crossings
- Fences & landscaping

Map data from previous projects was reviewed revealing many locations where existing conditions had changed since NCTCOG's initial analysis. For example, recent sidewalk damage resulted in some additional gaps. Other gaps previously inventoried by NCTCOG had since been constructed by adjacent development or City/TxDOT projects.

2.3 Sidewalk Condition Classification

Existing sidewalk conditions were classified as acceptable or unacceptable. As shown by the examples in Figure 3 on page 4, acceptable sidewalk was categorized as either "Excellent/Good" or "Fair." Unacceptable conditions included both "Poor" and "Nonexistent" sidewalk.

2.4 Incorporation of Other Data Sources

In some cases, additional improvements were constructed *after* the field work and were identified while conducting further review for prioritization on Google Maps aerial or Street View images. When such improvements were identified, the ArcGIS files were updated accordingly. However, other changes may have occurred between this review in Summer 2019 and the date of this report.

Information on several other sidewalk characteristics was compiled using Google Maps Street View in the office prior to the field visits and then verified by field personnel. For sidewalk segments, these characteristics included:

- Actual and effective sidewalk widths (accounting for obstructions such as utility poles)
- Type & width of buffer between sidewalk & street
- Presence & width of on-street parking, bike lanes & shoulder
- Presence of curb & gutter
- Posted speed limit
- Presence of lighting
- Number of adjacent travel lanes
- Adjacent land use category

The consultant team identified where sidewalk gaps are planned to be filled with shared use paths by reviewing NCTCOG's 2045 Regional Veloweb alignments adopted by the Regional Transportation Council. These were updated based on input from each city stakeholder about their most recent plans.

2.5 Identifying Crosswalks for Improvements

NCTCOG's prior in-house work identifying sidewalk gaps did not make any special considerations for crosswalks as distinct types of gaps in the pedestrian network. As part of this study, the consultants evaluated crosswalks at key locations, including:

- Existing signed and/or marked crosswalks crossing streets without signal or stop-sign control on the approaches being crossed.
- Unmarked/unsigned crossings of arterial or collector streets along radial lines to/from the station.
- Unmarked/unsigned crossings of arterial or collector streets not along radial lines to/from the station, but adjacent to significant pedestrian generators such as DART bus stops with significant levels of ridership, estimated by daily boarding and alighting data provided by DART.

Different types of field data were collected for signalized and unsignalized crosswalks during the field visits. At traffic signals, data collection included the number of lanes crossed in each direction, as well as the presence or absence of:

- Lighting
- Median refuge area
- Pedestrian ramps
- Countdown pedestrian signals
- Accessible pedestrian signals (APS)
- Pushbuttons (and if they were functional)

At unsignalized crosswalks, additional data collection items included:

- Whether the crosswalk had stop control for vehicular traffic or was uncontrolled.
- A two-minute count of traffic volumes crossing the crosswalk for locations where other daily traffic data from City or TxDOT sources was not available.
- Notes on any existing traffic control devices already present (such as signs, markings, or rectangular rapid flashing beacon (RRFB) assemblies).

Each input for both sidewalk segments and crosswalks were considered later for use in evaluating and prioritizing improvements, though some data were ultimately not utilized in order to simplify the prioritization process. Data collection forms (including handwritten notes taken on maps and pre-filled tables) are found in Appendix B.

2.6 Crosswalk Improvement Selection

At existing or proposed crosswalks without existing stop sign or signal control, potential improvements were evaluated based on guidance in the Federal Highway Administration's (FHWA) recent publication, "Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations" (July 2018). This publication includes enhanced guidance on countermeasures that can or should be considered for uncontrolled crosswalks with various combinations of vehicular speed, traffic flow, and number of lanes to be crossed. A selection table reproduced from this publication and additional details about how the consultant team used it to develop crosswalk improvement recommendations are found in Appendix C.

Improvement options evaluated by this methodology include high visibility crosswalk markings, parking restrictions on the crosswalk approach, upgrading lighting, pedestrian crossing warning signs, "Advance Yield Here for Pedestrian" signs, curb extensions, median pedestrian refuge islands, rectangular rapid-flashing beacons (RRFB's), road diets, and pedestrian hybrid beacons. Road diets were only recommended if roadways would likely still have excess capacity after the lane reductions.

A Microsoft Excel spreadsheet was created to automate the methodology and quickly produce a list of potentially recommended improvements given the inputs entered for each candidate crosswalk improvement location to be considered for the project. The analyst in each case still used engineering judgment to select which countermeasure options would ultimately be recommended. The inputs, options, recommendations, and notes are tabulated in tables found in Appendix D.



Figure 3: Sidewalk Condition Classification



2.7 Stakeholder Involvement

Coordination meetings were conducted with all technical stakeholders including staff from the cities of Dallas, Plano, Garland, and Richardson, as well as staff from DART and NCTCOG to review the recommendations, and for information specific to their jurisdiction and background knowledge of study locations, as needed. Meetings with the public were not held as part of this work.

2.8 Half-Mile Area Improvement Prioritization – Initial Trial Method

To provide opportunities for the greatest number of additional people to walk or bike to DART stations by constructing sidewalk, shared use path, crosswalk connections, and related infrastructure, the prioritization of identified improvements was structured to provide balance between estimating this objective accurately and applying the methodology to a large study area.

Initially, a prioritization approach that attempted to track as closely as possible to potential ridership increases was tested for the Parker Road Station in Plano, with adjustments for safety, key destination access, and equity. Though some of the elements of this initial prioritization methodology were ultimately not included in this study, they are documented in Appendix E as being potentially useful for later studies on a smaller scale. Also, many of the assumptions and methodologies explained in Appendix E were retained in the ultimate methodology.

2.9 Half-Mile Area Improvement Prioritization – Final Methodology

The prioritization process used to score potential projects placed significant emphasis upon distance to/from the station and the number of (density) of persons on parcels that could be connected by constructing new infrastructure—the potential new riders who could access the DART station. The study did not attempt to correlate how many people would actually use DART if the walking and bicycling routes to the rail station were improved.

Table 1 on page 6 identifies the criteria and weighting applied to rank potential projects. Additional details about the final methodology scoring process, including figures illustrating scoring for Plano's Parker Road Station, are provided in Appendix F. Highlights for each category and percent weight in the scoring system are as follows:

Figure 4: Employment and Population “Tributary” to Sidewalk & Crosswalk Improvements



Tributary Employment & Population (50%): Each sidewalk and crosswalk improvement was scored based on the total employment plus population that would be “tributary” to the station via the improvement once all proposed improvements are constructed.

Figure 4 illustrates the concept of tributary employment and population. It shows the parcels in the Parker Road Station area, with darker shades of gray representing higher population/employment totals. Note that, while some of the improvements shown in Figure 4 differ from the final recommendations, the principles illustrated still apply.

In the figure, each sidewalk and crosswalk improvement link is shown in different colors depending on the total employment plus population that would be “tributary” to the station via the improvement once all proposed improvements are constructed. The tributary employment plus population values are shown next to each link, with red links nearest the station having the highest values.

Distance (25%): Each improvement was scored based on distance to the station, measured linearly “as the crow flies” for simplicity. Improvements that connect directly to the station have a distance of 0.0 miles.

Trip Length Reduction (5%): Each improvement was evaluated based on the percentage reduction in walking distance to the station that would occur for the population of a representative reference parcel.

Access (5%): Land uses with a high proportion of visitors to employees and locations near bus routes received priority in the scoring for this criterion.

Crash History (5%): A GIS shapefile was used containing the point location of all reported bicycle and pedestrian crash locations for the study area from 2013 to 2017. While the scope of this project did not include pedestrian volume data collection, the crash data was observed to serve as somewhat of a surrogate for pedestrian demand. Therefore, a cluster of crashes may be more indicative of a place where many people walk than of a place that’s more dangerous to walk in terms of the risk to individual pedestrians.



Table 1: Weighting Criteria for Scoring Sidewalk and Crosswalk Improvements

Category	Tributary Employment & Population	Distance	Trip Length Reduction	Access		Safety		Equity
						Crash History	Systemic Safety	
Weight	50%	25%	5%	5%		5%	5%	5%
Inputs	Parcel population & jobs, GIS Network Analyst runs	Distance from Station	% Change in Pedestrian Trip Length	Other Nearby Destinations	Bus Routes	Number of nearby crashes in 5-year period	Posted Speed Limit	Environmental Justice Index
Description	Potential riders "upstream" of specific sidewalk or crosswalk improvements	Distance from individual improvements to station, measured "as the crow flies"	Measured for densest or farthest reference parcel tributary to each specific sidewalk or crosswalk improvement	Number of key destinations (hospitals, clinics, urgent care, schools, government buildings, courthouses, senior living, community centers, gardens, grocery stores, malls, supercenters, hotels, motels, entertainment, fine arts, parks, landmarks, athletic facilities, places of worship, libraries, museums, bus stops with > 25 daily boardings) within 250 feet of each improvement	Number of bus routes within 50 feet of each improvement that are also > 1/4 mile from station (Up to 3 points from bus routes but max. 5 points overall for key destinations and bus routes)	Number of crashes within 250 ft of improvement in 5-year period	Posted speed limit of parallel street or street being crossed	Designation of Above/Below Regional Average Percentage for Minority & Low-Income Populations
High Criteria/ Scoring Range	9,430 - 11,787 (20 to 25 points)	0 to 1/8 mile (25 to 19 points)	40-100% (5 points)	5+ destinations (5 points)	3+ routes (3 points)	5+ crashes (5 points)	≥ 45 mph (5 points)	Above Average for Both Minority <u>and</u> Low-Income (5 points)
Medium High Criteria/ Scoring Range	7,073 - 9,429 (15 to 20 points)	1/8 to 1/4 mile (18 to 13 points)	20-40% (3-4 points)	3-4 destinations (3-4 points)	2 routes (2 points)	3-4 crashes (3-4 points)	35-40 mph (3-4 points)	Above Average for Minority <u>or</u> Low-Income (3 points)
Medium Low Criteria/ Scoring Range	2,358 - 7,072 (5 to 15 points)	1/4 to 3/8 mile (12 to 6 points)	1-20% (1-2 points)	1-2 destinations (1-2 points)	1 route (1 point)	1-2 crashes (1-2 points)	25-30 mph (1-2 points)	
Low Criteria/ Scoring Range	0 - 2,357 (0 to 5 points)	3/8 to 1/2 mile (5 to 0 points)	0% (0 points)	No other destinations (0 points)	0 routes (0 points)	0 crashes (0 points)	≤ 20 mph (0 points)	Below Average for Minority and Low-Income (0 points)



Systemic Safety (5%): A more recent development in transportation safety that is designed to combat the drawbacks of traditional crash analysis is the concept of “systemic safety” which refers to approaches that are data driven and network-wide. This approach considered improvements at locations with similar characteristics to high crash locations, even if the locations where improvements are to be considered or proposed don’t themselves have significant crash history.

As a measure of systemic safety, the project team opted to use the posted speed limit of the roadway adjacent to sidewalk improvements or crossed by crosswalk improvements. Vehicular speed is regarded as correlating well to safety outcomes in bicycle and pedestrian crashes.

Equity (5%): The equity criterion emphasized improving communities with populations that have not historically received equal access to resources. The consultants were provided spatial data for the project area with NCTCOG’s Environmental Justice Index (EJI) to comply with federal rules for identifying Environmental Justice populations. The EJI is based on data from the 2013-2017 American Community Survey, aggregated at the census block level. Each census block is categorized if the percentage of its residents is higher than the regional average for minority population, low income, or both.

2.10 Gaps to Remain

The consulting team categorized some locations where gaps in the pedestrian network had been identified by NCTCOG during preliminary GIS work to be gaps to remain for the final project listing. This decision was based on field conditions that would be impractical or undesirable to implement or would make sidewalk construction extremely cost-prohibitive. Examples are detailed in Appendix F.

2.11 Improvement Numbering

Each proposed improvement, usually consisting of a single crosswalk or segment of sidewalk along a single city street block, was assigned a unique project-wide identification number for reference. The identification number consisted of:

- A two-digit code for the station area, matching the codes shown in Figure 2 earlier (For example, 3C for LBJ Central, 3D for Forest Lane, 4A for Walnut Hill, etc).
- A two-letter abbreviation for the station name for easier reference (For example, LC for LBJ Central, FL for Forest Lane, WH for Walnut Hill, etc).
- A two-letter code for the type of improvement (SW for sidewalk, CW for crosswalk, RP for repair, VW for Regional Veloweb, SP for shared use path, GP for gap to remain).
- A two- or three-digit number unique to identify the improvement location on project mapping. In addition to the VW improvement type code described in the bullet above, Regional Veloweb shared use path links have an improvement location number beginning with the letter V (V01, V02, etc.) to differentiate them from other improvements since they were numbered separately beginning at 1.

2.12 Prioritization Scoring

The consulting team evaluated each proposed improvement for the seven criteria described in Section 2.9 and Table 1. The proposed improvements were scored, and then sorted based the

combined overall score. Possible total values ranged from 0-100 points. Additional details are included in Appendix F.

For each city (Dallas, Garland, Plano, and Richardson) separate scales were set for dividing improvements of varying scores into high, medium, and low-priority categories, but remained consistent for all stations within that city. The thresholds between high- and medium priority and medium- and low-priority were set such that approximately one-third of improvements for each city were allocated into each category. For half-mile areas surrounding DART rail stations in Dallas, the scoring ranges were as follows:

- High Priority = 22 to 100 points
- Medium Priority = 15 to 21 points
- Low Priority = 0 to 14 points

The highest scoring improvement evaluated in Dallas was 8B-CC-CW-17, a crosswalk at the intersection of Memorial Drive and Lamar Street, below the Convention Center building structure. This improvement received a score of 89 points.

3. Improvement Recommendations

The following sections include project mapping and opinions of probable construction costs for existing and proposed conditions, and improvements that have been identified to improve pedestrian and bicyclist access to the stations.

3.1 DART Station Property Recommendations & Opinions of Probable Construction Cost (OPCC)

Summaries of recommended improvements follow for each station beginning on page 8. The first figure in each set for individual station properties on pages 9 through 80 illustrates the station area including DART property limits, existing sidewalks, Regional Veloweb shared use paths and local shared use paths in and around each station. Existing facilities are shown with solid lines, while proposed facilities are shown in dashed lines.

The other figure(s) in each set on pages 10 through 80 show photographs of existing conditions at the same locations, referenced by matching, numbered orange stars. In many cases, the field photographs are enhanced with graphics to illustrate the proposed signing, pavement markings, or other traffic control devices that are recommended.

For each station, opinions of probable construction cost (OPCC’s) were developed for each improvement, unless otherwise noted. The following cost components (totaling 25%) were applied to all costs, as directed and approved by both NCTCOG and DART:

- 10% design fee
- 4% mobilization
- 4% for landscaping allowance
- 2% for Erosion & Sediment Control Allowance
- 3% for traffic control
- 2% extra contingency for federal aid project

For additional details about the OPCC’s, see Appendix G and Section 3.3 later in this report.



3.1.1 LBJ Central Station (on DART Property)

Figure 3C-1.1 on page 9 shows the seven improvements recommended for LBJ Central Station within DART right-of-way. Figures 3C-1.2 and 3C-1.3 on pages 10-11 illustrate existing conditions at the seven improvement locations.

A passcode-locked gate at the northeast boundary of the station property provides access to and from the station by residents of the adjacent apartment complex. The sidewalk leading across the north edge of the parking lot from this gate currently ends at the north end of the lot. Improvement 3C-LC-ST-01 is recommended to add sidewalk and crosswalk to connect this sidewalk to existing sidewalk near the station platform.

Other recommended improvements include building ADA ramps for crosswalks and making signing and pavement markings consistent with the Manual on Uniform Traffic Control Devices (MUTCD) for compliance and for improved motorist, pedestrian, and bicyclist understanding of multi-modal conflict areas. Refer to the figures for additional details.

The total OPCC for the improvements on the LBJ Central Station DART property is approximately \$36,000. Matrix tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.2 Forest Lane Station (on DART Property)

Figure 3D-1.1 on page 12 identifies 13 recommended improvements at the Forest Lane Station within DART right-of-way. Figures 3D-1.2 and 3D-1.3 on pages 13-14 illustrate existing conditions at the 13 improvement locations.

The station generally has good bicycle and pedestrian access from each direction. Recommended improvements include:

- Resolving a conflict between buses turning right into the station from Forest Lane. The radius at this signalized intersection is too tight, causing buses to encroach into the pedestrian space. Landscaping rocks have been placed near the curb to discourage encroachment, but evidence of encroachment was still observed. Restriping the station driveway to reduce the number of lanes exiting from two to one would provide more space for wider bus turns while providing greater pedestrian safety and comfort.
- Relocating the stone pillars near the tops of the ADA ramps to the station platform so they do not pose barriers to wheelchair passage.
- Moving parking aisle stop bars behind unmarked crosswalks and marking the crosswalks.
- Relocating bike parking closer to the station platform so it is more convenient for bicyclists.
- Making signing and pavement markings consistent with the Manual on Uniform Traffic Control Devices (MUTCD) for compliance and for improved motorist, pedestrian, and bicyclist understanding of multi-modal conflict areas.

The total OPCC for the improvements for Forest Lane Station on DART property is approximately \$15,000. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.3 Walnut Hill Station (on DART Property)

Figure 4A-1.1 on page 15 identifies 12 improvements recommended at Walnut Hill Station on DART property. Figures 4A-1.2 through 4A-1.5 on pages 16-19 illustrate existing conditions at the 12 improvement locations.

Walnut Hill Lane, a busy six-lane divided arterial, is a barrier to bicycle and pedestrian travel near the station that is overcome for rail passengers by the grade separated platform that crosses the street overhead. However, DART passengers who don't ride the train but instead use the street-level bus stops and cross Walnut Hill Lane to or from their destination on the other side of the street were observed crossing mid-block underneath the rail bridge.

Aesthetic, closely-spaced fence posts located between the sidewalk and DART property seem to have been placed in an attempt to discourage mid-block crossings. While the fencing may encourage rail passengers to use the correct set of stairs or elevators to access their destination, the location of the fencing behind the sidewalk does not discourage bus passengers from crossing. Furthermore, the fencing placement requires a more circuitous route for bicyclists and pedestrians to access stairs and elevators on the correct side of the street. Worn paths in the landscaping and one rider seen jumping the fence posts indicates existing demand for more convenient movement.

The recommended improvements include:

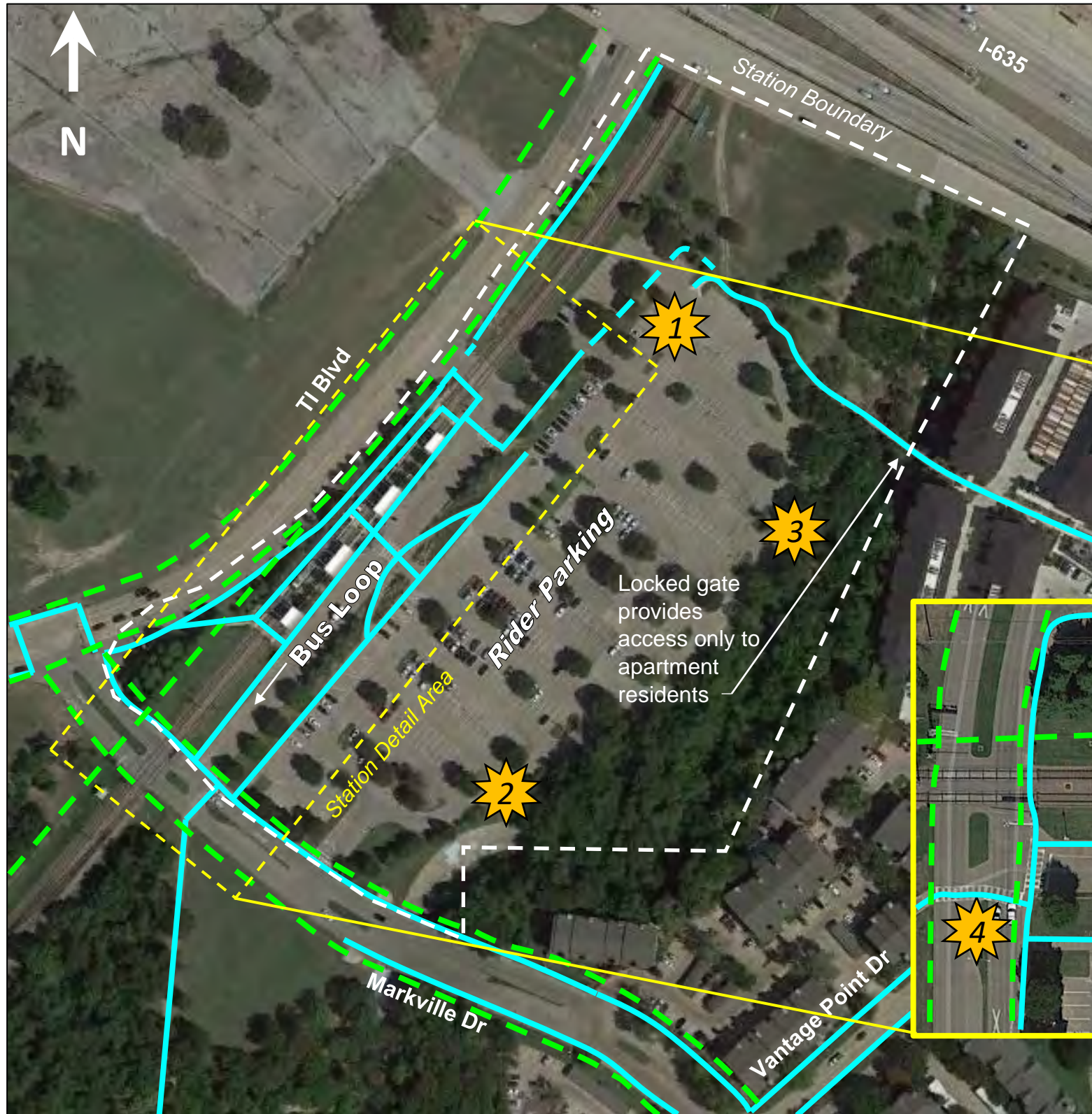
- Removing fence posts to provide more direct sidewalk connections between the sidewalk and platform stairs and elevators.
- Adding aesthetic anti-climb fencing in the median of Walnut Hill Lane to redirect at-grade crossings to the signalized intersection of Walnut Hill Lane and Glen Lakes Drive, which is located about 350 feet to the east at the Texas Health Presbyterian Hospital Entrance.
- Adding covered bike parking on the south side of Walnut Hill Lane near the station stairs so riders do not need to cross to the north side to park.
- Adding landscaping north of Glen Lakes Drive to discourage park-and-ride users from crossing away from the striped crosswalk.
- Adding sidewalk south of Walnut Hill Lane between the station platform stairs and an office building to the west where a worn path in the grass was present and several riders were observed walking.
- Updating signs to meet MUTCD standards and adding or refreshing crosswalk striping.

Refer to the figures for additional details. Several of the improvements discussed are at or near the boundary of DART's right-of-way and would therefore require coordination between DART and the City of Dallas. The median fencing improvement, while entirely within City of Dallas right-of-way, is included here since its design should be coordinated closely with the other recommended improvements within DART right-of-way.

The total OPCC for the DART improvements is approximately \$215,000. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.



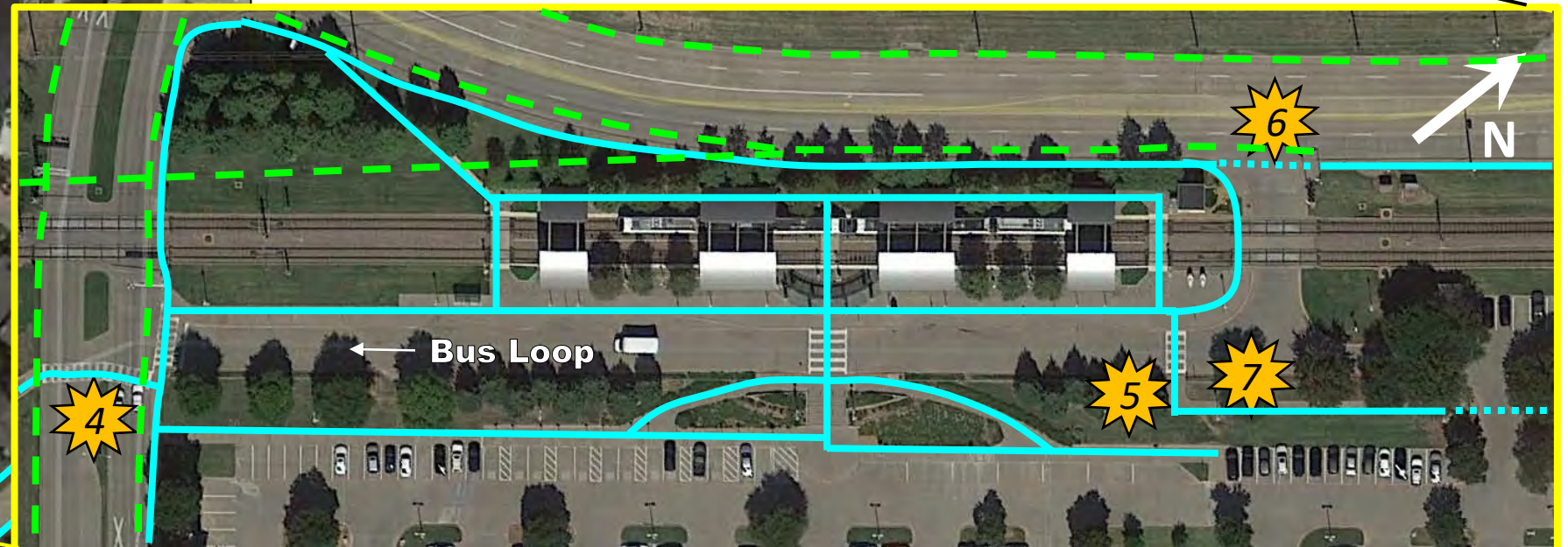
LBJ Central Station Recommended Access Improvements



Legend

- Sidewalk/Crosswalk
 - Existing
 - - Proposed
- Regional Veloweb
 - Existing
 - - Proposed

Number	Description
1	Add sidewalk and crosswalk to connect the existing station sidewalk to the LBJ Station Apartments. The current sidewalk ramp at the end of the sidewalk from the apartments that ends at the parking lot should be relocated to avoid a diagonal crosswalk across the parking lot aisle. Two to three parking spaces would be removed, but parking demand for this station appears to be well below capacity.
2-3	Update speed limit signs to meet MUTCD standards.
4-5	Build ADA ramps for crosswalks.
6	Add marked pedestrian crosswalk
7	At the bus loop entrance, update pedestrian warning signs to meet MUTCD standards. The existing signs have the wrong shape panel and do not have supplemental arrow plaques as required. Replace "DO NOT ENTER" signs with new signs including all capital letters to meet MUTCD standards.



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FIGURE 3C-1.1 NOT TO SCALE MAY 2020



LBJ Central Station Existing Conditions at Improvement Locations



R2-1

Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.

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FIGURE 3C-1.2 MAY 2020



LBJ Central Station Existing Conditions at Improvement Locations

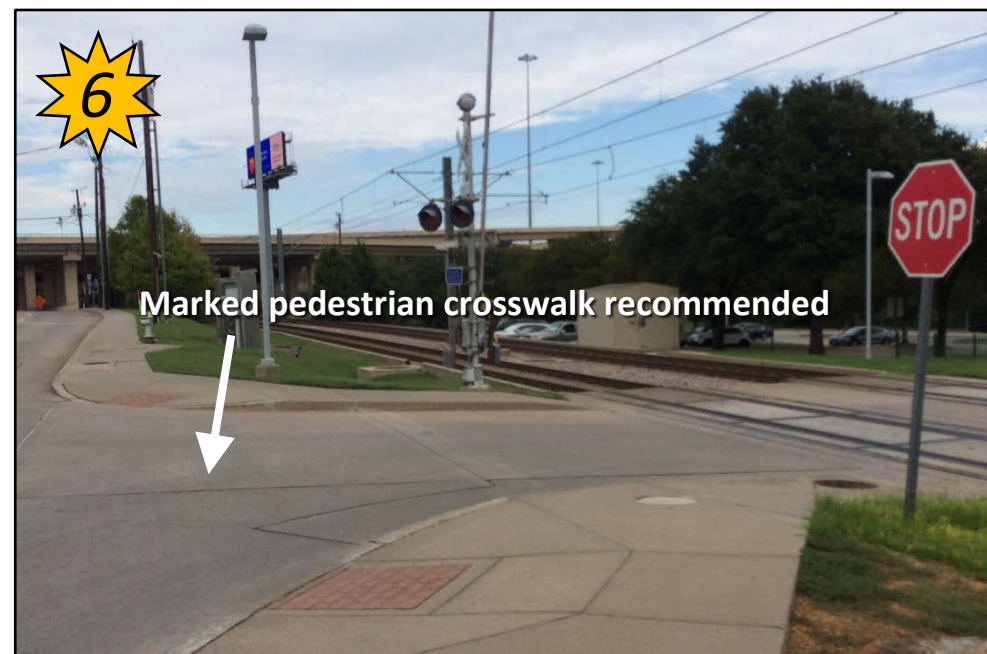


W11-2
W16-7P

Replace non-standard sign with W11-2 sign from MUTCD. Signs should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.

Update "DO NOT ENTER" signs to MUTCD standard with all CAPS lettering

DO NOT ENTER
EXCEPT BUSES
R5-1



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FIGURE 3C-1.3 MAY 2020



Forest Lane Station Recommended Access Improvements



Legend

Sidewalk/Crosswalk

- Existing
- - Proposed

Regional Veloweb

- Existing
- - Proposed

Local On-Street Bikeway

- - - Planned

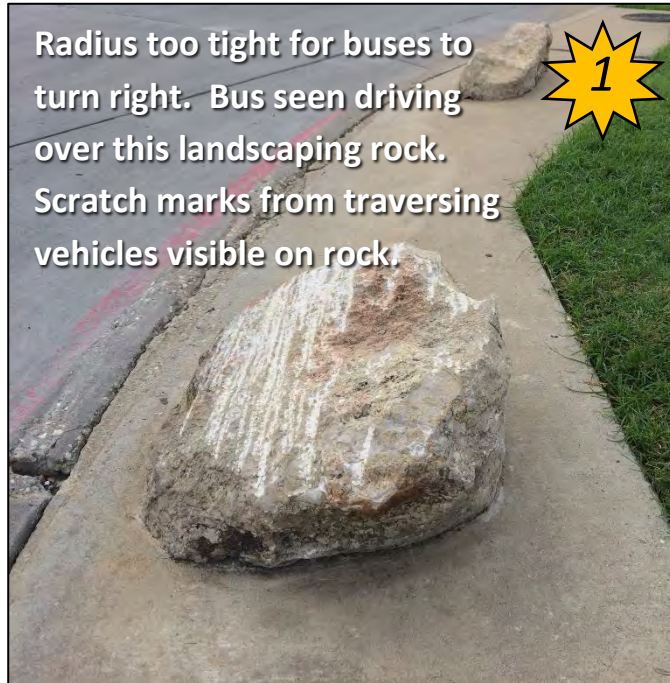
Number	Description
1	Stripe a single lane for northbound traffic exiting the park & ride lot. This would allow space for two southbound lanes entering the lot. The reason is that the radius on the southwest corner of the intersection of Forest Lane and the station entrance is too tight. Buses turning right from eastbound Forest Lane were observed encroaching into the pedestrian space on the intersection corner. A high mast overhead electric pole and existing storm drain inlet constrain the radius from being enlarged.
2-3	Update pedestrian warning signs to meet MUTCD standards. The existing signs are fading, not retro-reflective, have the wrong shape panel, and do not have supplemental arrow plaques as required to meet MUTCD standards.
4-5	Add crosswalk markings and move the existing STOP bar back behind the pedestrian path of travel.
6-8	Update the speed limit signs to meet MUTCD standards.
9-10	Increase the space between the stone pillar seats at the top of the ADA ramps to the station platform or move them farther back from the ramp so that wheelchair users can pass. Four or preferably five foot clearances are recommended.
11	Move covered bike parking to a more convenient location for cyclists close to the platform. The open space near the stairs within the security camera monitoring area is recommended (near Locations 9 and 10). This will be more convenient for cyclists riding from Forest Lane.
12-13	Update "DO NOT ENTER" signs to meet MUTCD standards.

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FIGURE 3D-1.1 NOT TO SCALE MAY 2020



Forest Lane Station Existing Conditions at Improvement Locations



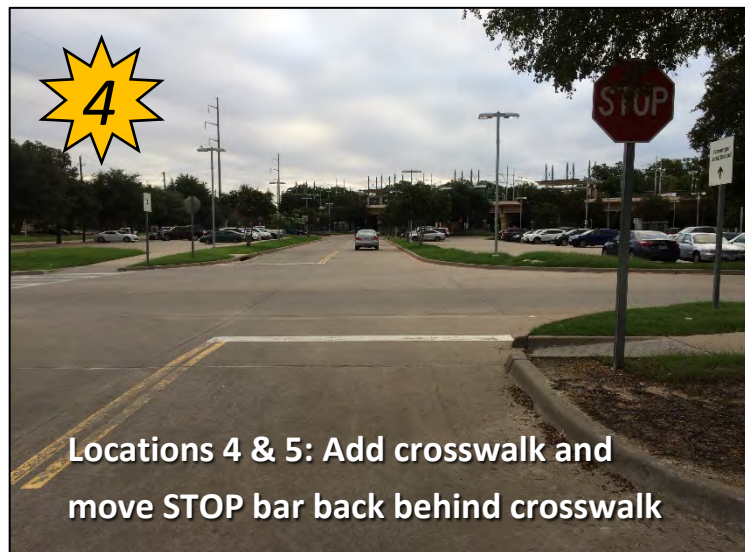
Radius too tight for buses to turn right. Bus seen driving over this landscaping rock. Scratch marks from traversing vehicles visible on rock.



W11-2
W16-7P

DRAFT – Not for Construction

* Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.



Locations 4 & 5: Add crosswalk and move STOP bar back behind crosswalk



R2-1

* Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.



FIGURE 3D-1.2 MAY 2020

Forest Lane Station Existing Conditions at Improvement Locations

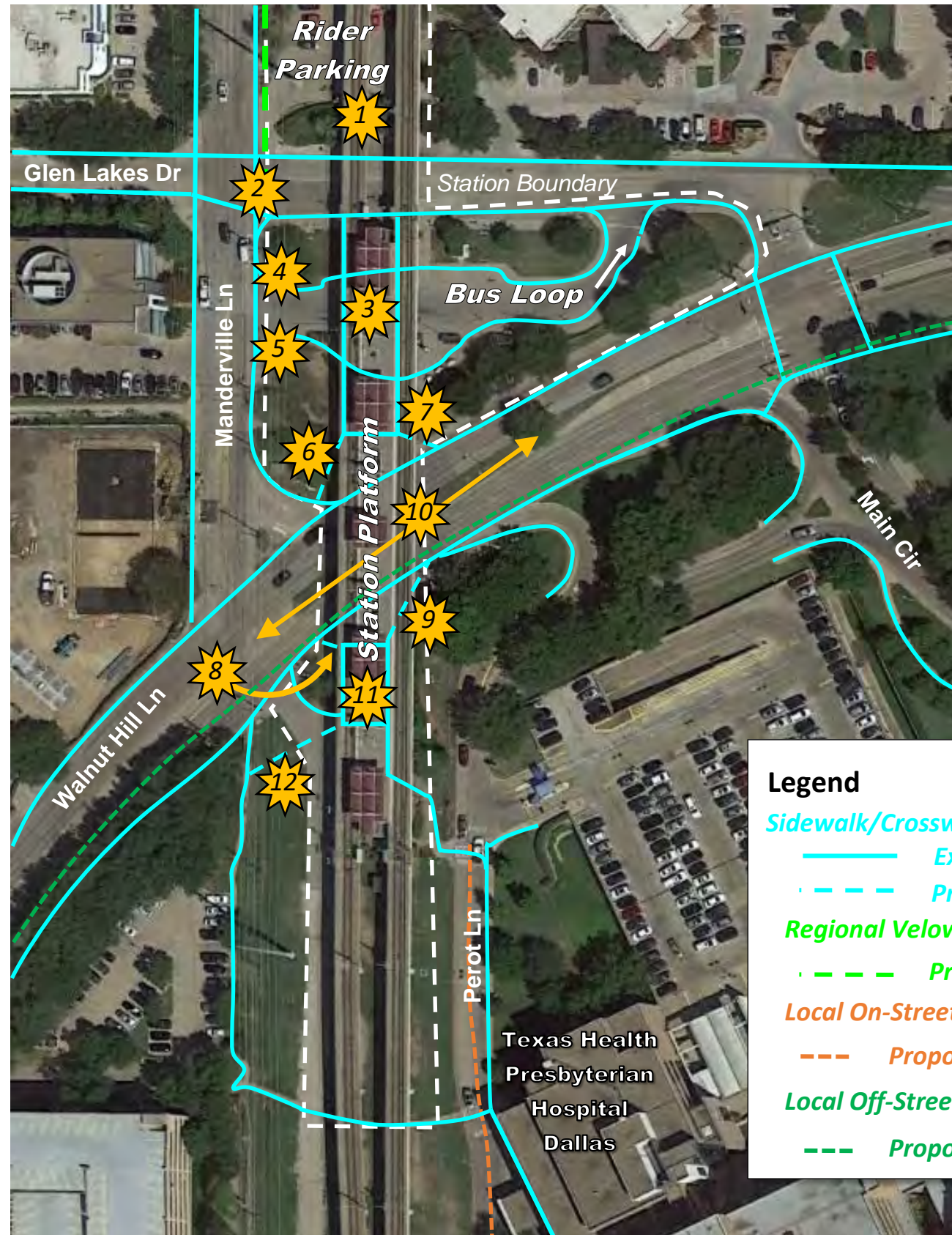


R5-1

DRAFT – Not for Construction



Walnut Hill Station Recommended Access Improvements



Legend

Sidewalk/Crosswalk
 — Existing
 - - - Proposed

Regional Veloweb
 - - - Proposed

Local On-Street Bikeway
 - - - Proposed

Local Off-Street Shared-Use Path
 - - - Proposed

Number	Description
1	Add landscaping to close "goat trail" and discourage people from crossing mid-block across Glen Lakes Drive between the parking lot and the stairs/elevator to the train platform.
2	Restripe faded crosswalk across Glen Lakes Drive at Manderville Lane.
3	Stripe crosswalk across bus loop under the bridge.
4-5	Update "DO NOT ENTER" signs to meet MUTCD standards.
6-9	Remove fence posts along Walnut Hill Lane sidewalk to provide more direct sidewalk connections between the Walnut Hill Lane sidewalk and the stairs & elevators to the train platform. Worn paths in some of the landscaping and one rider jumping the fence posts indicate existing demand for a more convenient movement.
10	Install median fence along Walnut Hill Lane in conjunction with the improvements at Locations 6-9 to continue to discourage pedestrians from crossing Walnut Hill Lane mid-block near the rail bridge.
11	Add covered bike parking on south side of Walnut Hill Lane near station stairs so riders do not need to cross to north side to park.
12	Build sidewalk to replace the existing "goat trail" and provide a better connection between the DART station and a large adjacent office building. Riders were observed walking in the worn path in the grass at this location.

Not for Construction

FIGURE 4A-1.1 NOT TO SCALE MAY 2020



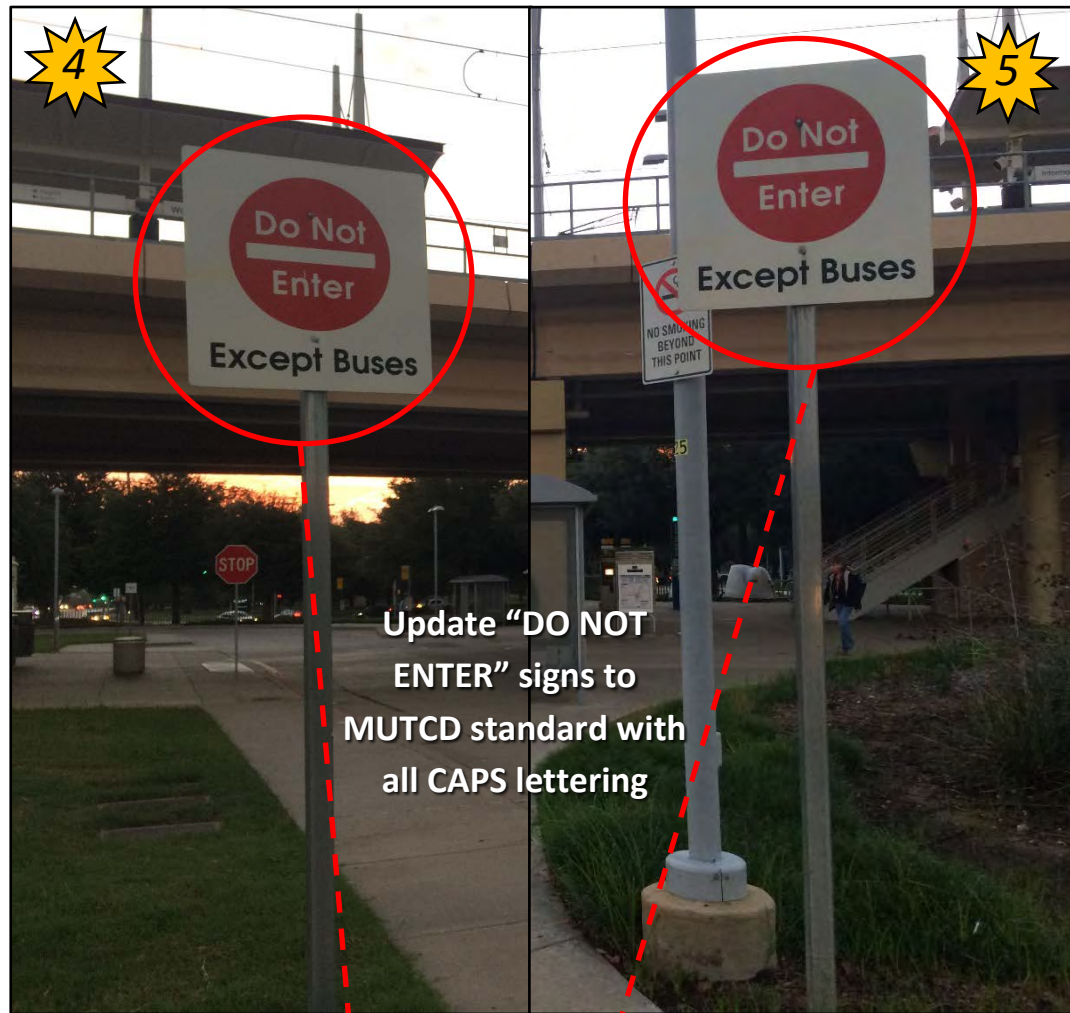
Walnut Hill Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 4A-1.2 MAY 2020

Walnut Hill Station Existing Conditions at Improvement Locations

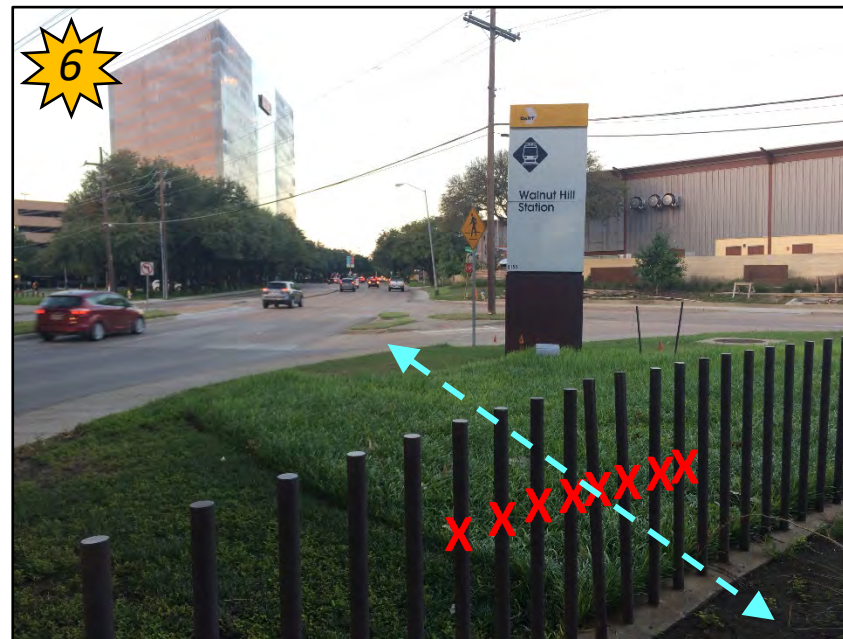


Update "DO NOT ENTER" signs to MUTCD standard with all CAPS lettering



R5-1

Not for Construction



Remove segments of the existing fence at Locations 6-9 and add sidewalk to provide more direct connections between the sidewalk along Walnut Hill Lane and the stairs to the elevated train platform. Install median fence along Walnut Hill Lane (Location 10 at right & on next sheet) in conjunction with the improvements at Locations 6-9 to continue to discourage pedestrians from crossing Walnut Hill Lane mid-block near the rail bridge.

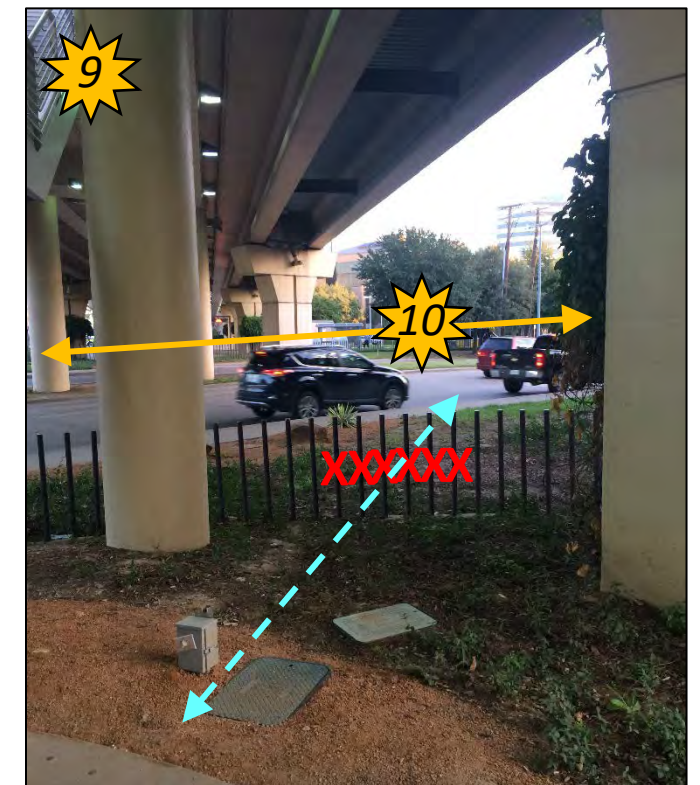


FIGURE 4A-1.3 MAY 2020

Walnut Hill Station Existing Conditions at Improvement Locations



Install median fence along Walnut Hill Lane in conjunction with the improvements at Locations 6-9 (see 8 at left & previous sheet) to discourage pedestrians from crossing Walnut Hill Lane mid-block near the rail bridge.



Image from Cochrane USA

Examples of median fencing on arterials. (Note that the pictures shown are only examples for reference, and no specific vendors are endorsed.)



Median fencing recently installed by TxDOT on Lancaster Avenue between Sargent Ave and Oakland Blvd in Fort Worth.

<https://dfw.cbslocal.com/2019/07/26/txdot-installs-metal-fence-address-fort-worth-pedestrian-issue/>

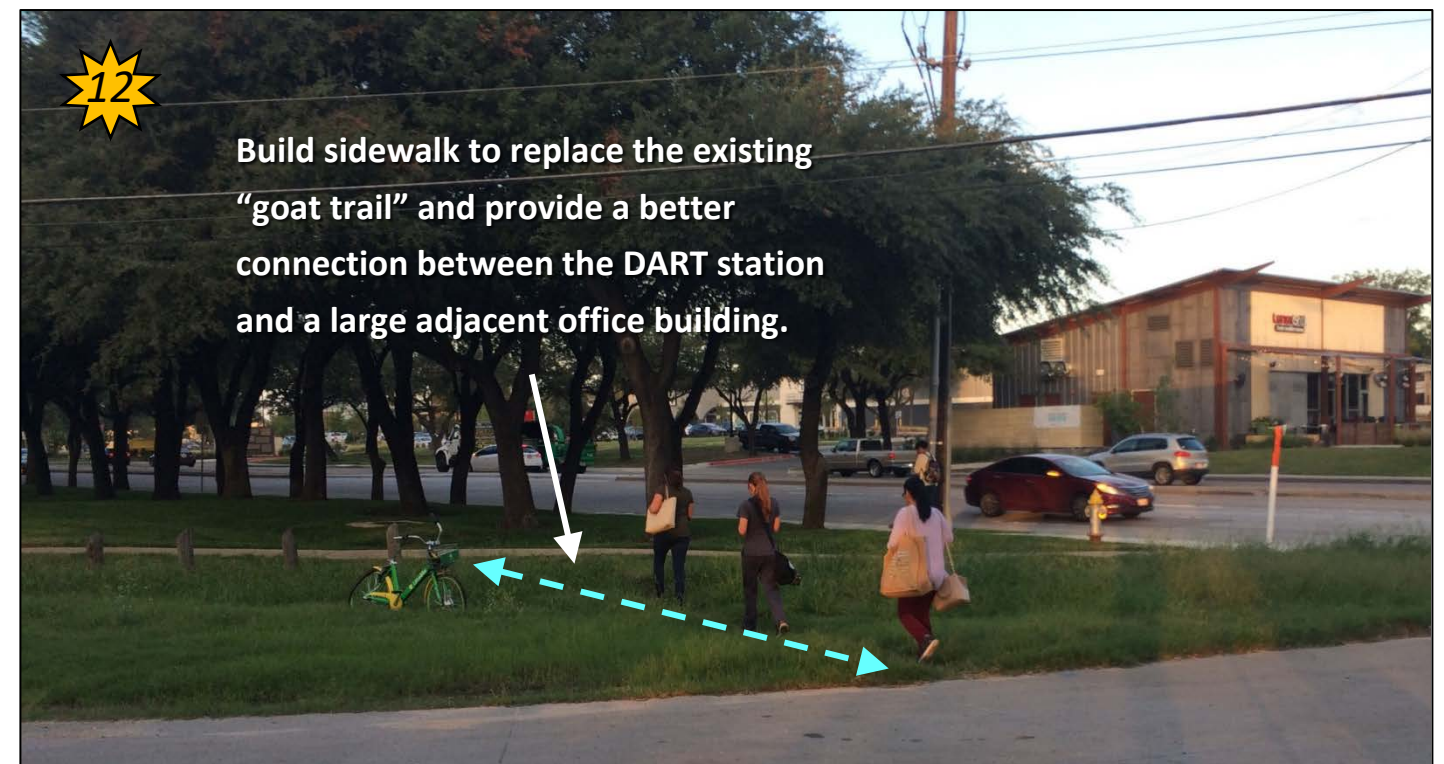
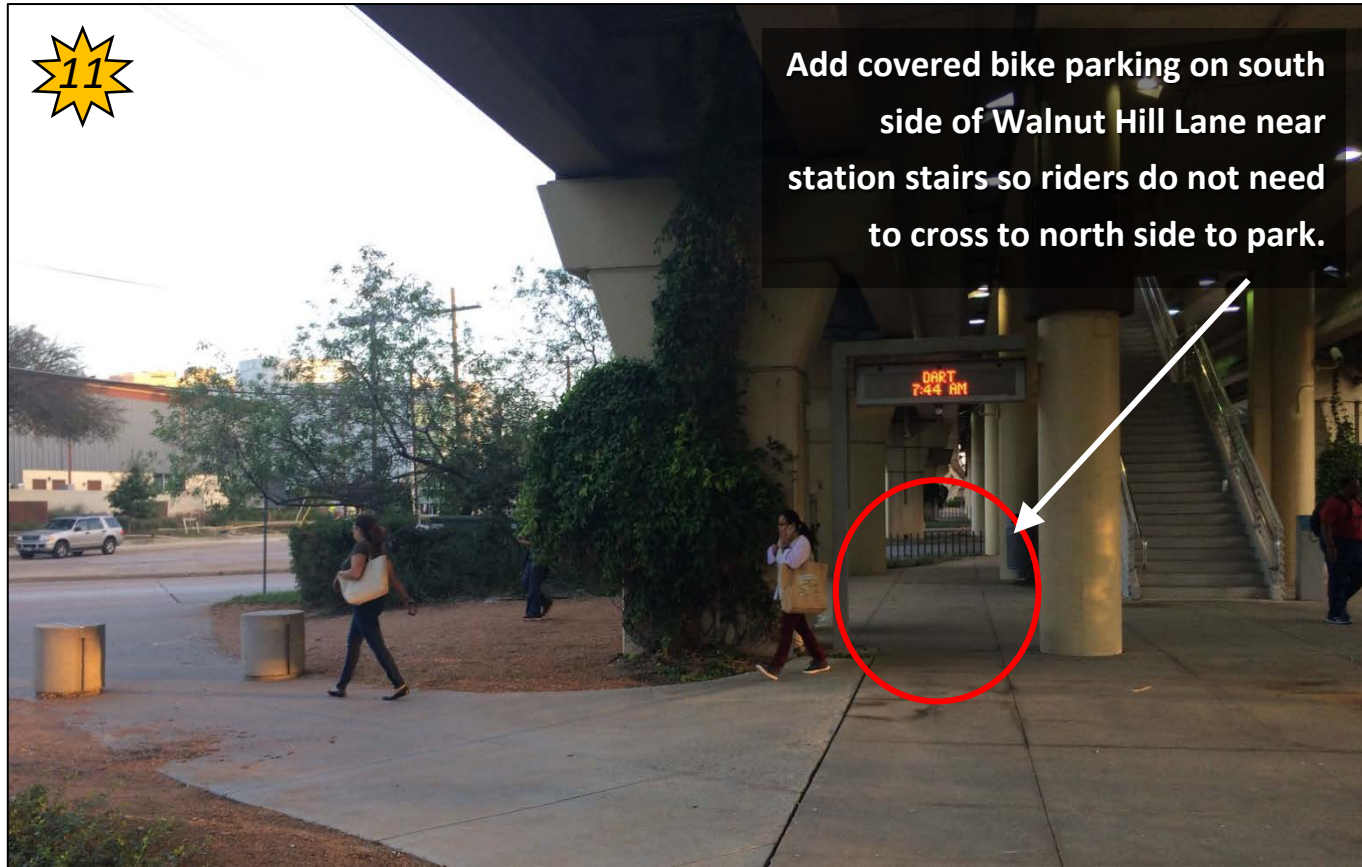


Example of median fencing on arterial. (Note that the picture shown is only an example for reference, and no specific vendors are endorsed).

Image from Seagull Concrete and Fence, Ocean City, MD.
<https://www.facebook.com/SeagullFenceConcreteLLC/videos/1749627818436692/>

Not for Construction

Walnut Hill Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 4A-1.5 MAY 2020

3.1.4 Park Lane Station (on DART Property)

Figure 4B-1.1 on page 21 identifies ten improvements recommended at Park Lane Station on DART property. Figures 4B-1.2 through 4B-1.5 on pages 22-25 illustrate existing conditions at the ten improvement locations.

Pedestrian and bicycle access between the station and the Caruth Plaza shopping center to the west is indirect, with a low aesthetic fence and row of shrubs west of the station property separating the stairs and elevators to the platform above from the shopping center parking lot. To access the shopping center, riders must either jump the fence and cut through the shrubs (which many appear **to do based on the shrubs' condition**) or travel about 500 feet farther south to Park Lane before doubling back to the north. A more direct connection is recommended by coordinating with the Caruth Plaza owner to provide a break in the fence and a crosswalk with signing across the parking lot to the sidewalk fronting the stores.

Pedestrian and bicycle access is also indirect to significant trip generators south and west of Park Lane. Several pedestrians were observed crossing Park Lane, a busy four-lane arterial, directly below the rail overpass south of the platform instead of crossing at signalized crosswalks at the Caruth Plaza driveway 500 feet to the west or at Greenville Avenue 300 feet to the east. A convenience store immediately to the south was observed to be one destination for such pedestrians. There may also be demand for trips on foot to and from the new Galleries at Park Lane apartments immediately to the southwest of the rail crossing over Park Lane, whose residents and visitors may be tempted to make a similarly direct crossing.

Long term, DART should consider constructing a pedestrian bridge over Park Lane from the elevated station platform for increased safety and convenience of riders traveling to and from the south. As an interim measure, DART should consider coordinating with the City of Dallas to provide an at-grade crossing with a pedestrian hybrid beacon, coordinated with the adjacent traffic signals. A slight reconfiguration of turning lanes and tapers for car traffic at this location could help create a median refuge area for travelers in conjunction with the improvement.

Other recommended improvements include updating signs and vehicular pavement marking striping to meet MUTCD standards. Refer to the figures for additional details.

The total OPCC for the DART improvements is approximately \$290,000. This excludes costs for any future pedestrian bridge over Park Lane and includes only the at-grade solution described above for improvement 4B-PL-ST-10 discussed in Figures 4B-1.1 and 4B-1.5 on pages 21 and 25. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.5 Lovers Lane Station (on DART Property)

Figure 4C-1.1 on page 26 identifies six improvements recommended at Lovers Lane Station on DART property. Figures 4C-1.2 and 4C-1.3 on pages 27-28 illustrate existing conditions at the six improvement locations. Since U.S. 75 abuts the western edge of the station property, bicycle and pedestrian access is only available from the north, south, and east.

To the west, bent fences indicate motorists using the U.S. 75 northbound frontage road as a drop-off/pick up location. Adding landscaping adjacent to the existing fences is suggested to

discourage this behavior and encourage loading and unloading at the designated location at the west end of Milton Street.

To the north, a worn path in the grass indicates demand for a diagonal sidewalk under the rail overpass to connect the intersection of U.S. 75 and Lovers Lane more directly with the sidewalk south to the station.

The existing sidewalk along the south side of Milton Street ends abruptly a short distance east of the station. DART should coordinate with the adjacent property owner and/or the City of Dallas to build sidewalk and crosswalks across the existing business driveway at this location.

Other recommended improvements include updating signs to meet MUTCD standards and adjusting the location of a bus stop shelter to provide adequate clearance for wheelchair users to pass. Refer to the figures for additional details.

The total OPCC for the DART improvements is approximately \$95,000. Of this total, approximately \$11,000 is estimated for Improvement 4C-LL-ST-04 to fill the City/private property gap on the south side of Milton Street. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.6 Mockingbird Station (on DART Property)

Figure 4D-1.1 on page 29 identifies 30 improvements recommended at Mockingbird Station on DART property. Figure 4D-1.2 on page 30 lists the improvements in tabular format. Figures 4D-1.3 through 4D-1.11 on pages 31-39 illustrate existing conditions at the 30 improvement locations.

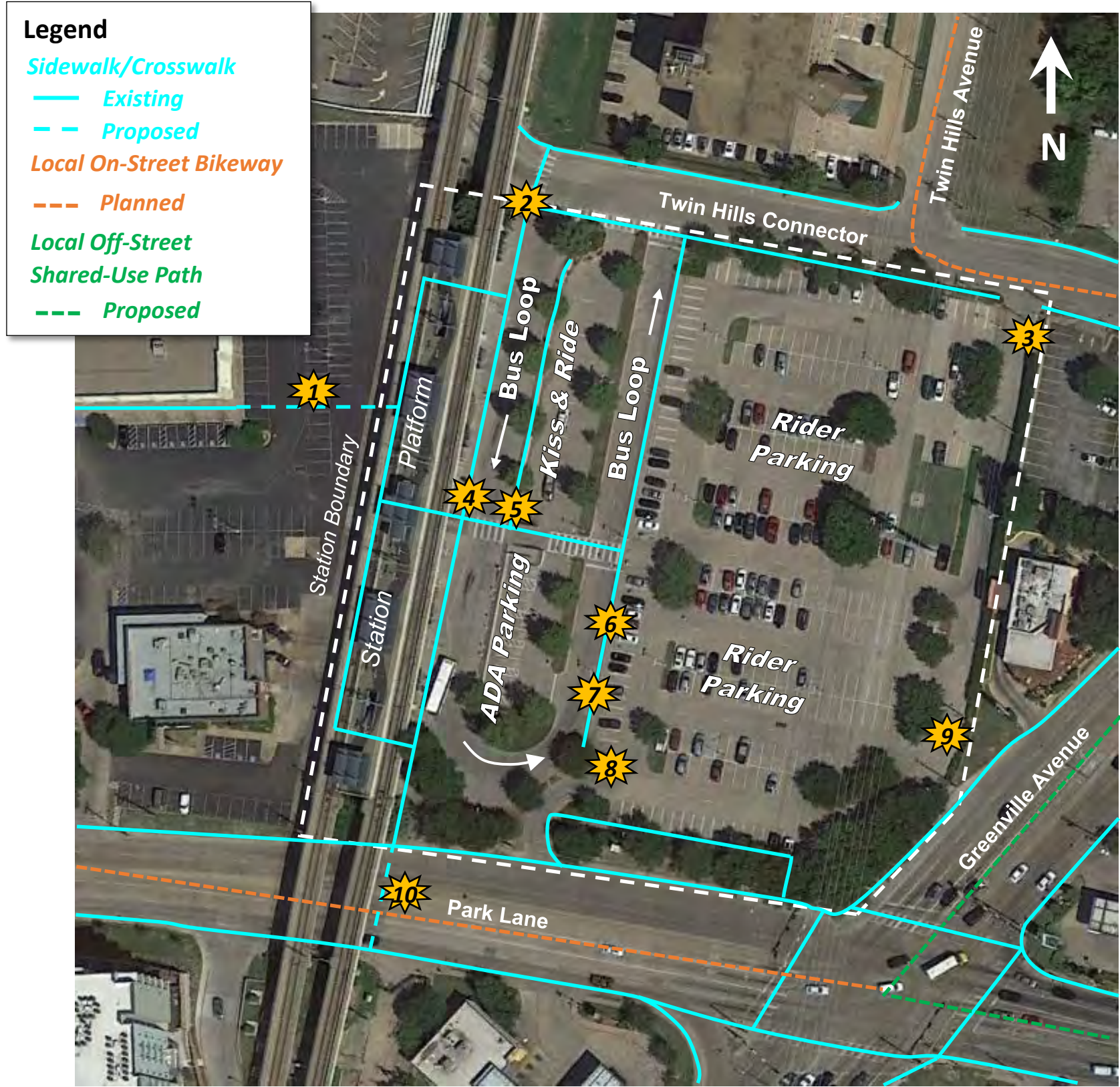
The station is very well connected by sidewalks and trails to the surrounding area. With a large rider parking lot and multiple roadways circulating throughout the site, opportunities to improve access for bicyclists and pedestrians still abound.

The recommended improvements include adding or upgrading signing for MUTCD compliance and enhanced pedestrian visibility, as well as:

- Adding sidewalk for a waiting area for the bus stop on Worcola Street at the southeast corner of the Park & Ride lot (location 4D-MB-ST-03 on Figures 4D-1.1 to 4D-1.3 on pages 29-31).
- Installing bike parking near the shared use trail at the bottom of the stairs below the station platform (location 4D-MB-ST-05 on Figures 4D-1.1, 4D-1.2 and 4D-1.4 on pages 29, 30 & 32).
- Reconstructing and upgrading pedestrian ramps with accessible slopes and detectable warning surfaces (locations 4D-MB-ST-18, 20, 21 & 30 on Figures 4D-1.1, 4D-1.2, 4D-1.8 and 4D-1.11 on pages 29, 30, 36 and 39).
- Providing parking bumpers and trimming vegetation to prevent parked cars from encroaching too far over the sidewalk leading between the station and points to the southeast through the Park & Ride lot (location 4D-MB-ST-19 on Figures 4D-1.1, 4D-1.2 and 4D-1.8 on pages 29, 30 and 36).
- Installing pedestrian lighting for an area where tree cover makes for dark nighttime conditions (location 4D-MB-ST-22 in Figures 4D-1.1, 4D-1.2 and 4D-1.9 on pages 29, 30 & 37).



Park Lane Station Recommended Access Improvements



Number	Description
1	Create a pedestrian connection to the Caruth Plaza shopping center west of the station. Add a break in the existing station platform fencing and a crosswalk with signing across the parking lot to the sidewalk fronting the stores. Breaks in the bushes next to the fencing indicate existing demand.
2	Update "DO NOT ENTER" signs to meet MUTCD standards.
3	Replace dashed white pavement marking on driveway at east side of DART property with double yellow line. Dashed white lines incorrectly imply one-way traffic flow (contrary to existing signs directing drivers to enter here) that could result in hazardous conditions for both drivers and pedestrians.
4-5	Update pedestrian warning signs to meet MUTCD standards. The existing signs have the wrong panel shape, and do not have supplemental arrow plaques as required to meet MUTCD standards. Also, the sign at Location 3 (right-hand sign as facing southbound bus loop traffic) should be relocated closer to the crosswalk.
6	Update Speed Limit sign to meet MUTCD standards.
7	Update "ONE WAY" sign to meet MUTCD standards.
8	Update "DO NOT ENTER" signs to meet MUTCD standards.
9	Update Speed Limit sign to meet MUTCD standards.
10	Consider, as a long-term solution, constructing a pedestrian bridge over Park Lane from the elevated station platform for increased safety and convenience of riders traveling to and from the south. A large apartment building is located closer to the station on the south side of Park Lane. Pedestrians were observed crossing Park Lane mid-block under the bridge at this location, which is about 300 feet from the signalized crosswalk at Greenville Avenue to the east and 500 feet from the signalized crosswalk at the Caruth Plaza shopping center entrance to the west. As an interim measure, install a crosswalk and pedestrian hybrid beacon on Park Lane near the rail crossing and coordinate with the adjacent signals for a two-stage pedestrian crossing. This improvement will strengthen the connection to the existing employment and recreational facilities south and west of the station. A taper transitioning the number of westbound lanes from three to two exists at this location. The third lane could instead be dropped at the right turn entrance to the DART parking lot to create more space for a median pedestrian refuge. (Cost estimate provided for interim crosswalk/pedestrian hybrid beacon option).

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FIGURE 4B-1.1 NOT TO SCALE MAY 2020



Park Lane Station Existing Conditions at Improvement Locations



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Park Lane Station Existing Conditions at Improvement Locations



Replace non-standard signs with W11-2 signs from MUTCD. Signs should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.

The right-hand sign should also be relocated closer to the crosswalk.



W11-2
W16-7P



Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.



R2-1



Replace non-standard sign with R6-1 or R6-2 sign from MUTCD, which are used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only.



R6-1



R6-2

DRAFT – Not for Construction

FIGURE 4B-1.3 MAY 2020



Park Lane Station Existing Conditions at Improvement Locations



Update "DO NOT ENTER" signs to MUTCD standard with all CAPS lettering



R2-1

Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.

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FIGURE 4B-1.4 MAY 2020

Park Lane Station Existing Conditions at Improvement Locations



Install a crosswalk and pedestrian hybrid beacon on Park Lane near the rail crossing and coordinate with the adjacent signals for a two-stage pedestrian crossing. This improvement will strengthen the connection to the existing employment and recreational facilities south and west of the station.

For long term improvement, construct a pedestrian bridge over Park Lane from the elevated station platform for increased safety and convenience of riders traveling to and from the south.

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FIGURE 4B-1.5 MAY 2020



Lovers Lane Station Recommended Access Improvements

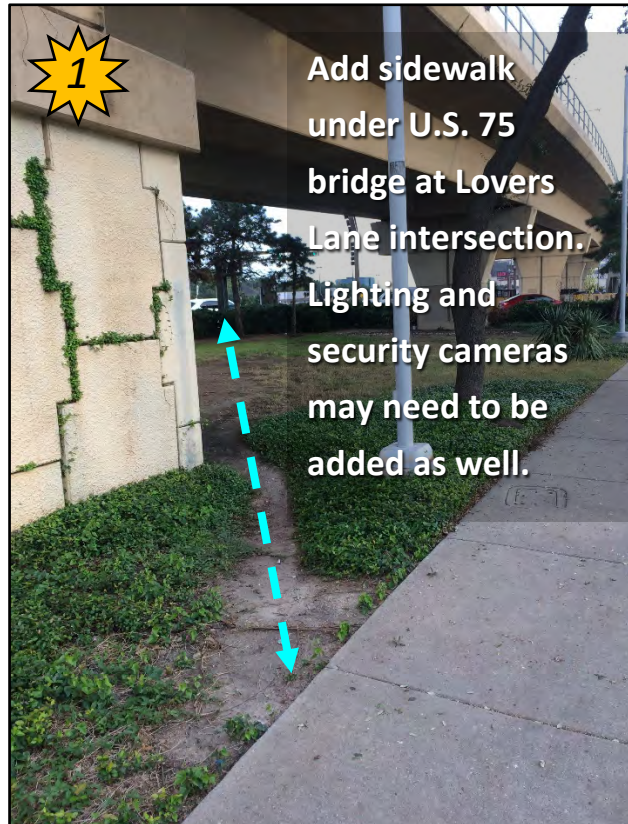


Number	Description
1	Add sidewalk under U.S. 75 bridge at Lovers Lane intersection. A worn path in the grass shows existing demand here. Lighting and security cameras may need to be added as well.
2	Update "DO NOT ENTER" signs to meet MUTCD standards.
3	The bus shelter location and/or the curb line need to be adjusted to provide a minimum sidewalk width of 4 feet for a wheelchair to be able to pass. Only 2.5 feet of sidewalk width is existing.
4	Build new sidewalk to connect the existing sidewalk to the DART station platform.
5-6	Add landscaping adjacent to existing fences to discourage motorists from dropping off passengers from the U.S. 75 frontage road. Bent fences show evidence of this behavior.

DRAFT – Not for Construction

FIGURE 4C-1.1 NOT TO SCALE MAY 2020

Lovers Lane Station Existing Conditions at Improvement Locations



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FIGURE 4C-1.2 MAY 2020

Lovers Lane Station Existing Conditions at Improvement Locations



Add landscaping to discourage passenger drop-offs from U.S. 75 frontage road travel lanes. Bent fences indicate existing passenger crossings from Locations 5 and 6.

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FIGURE 4C-1.3 MAY 2020

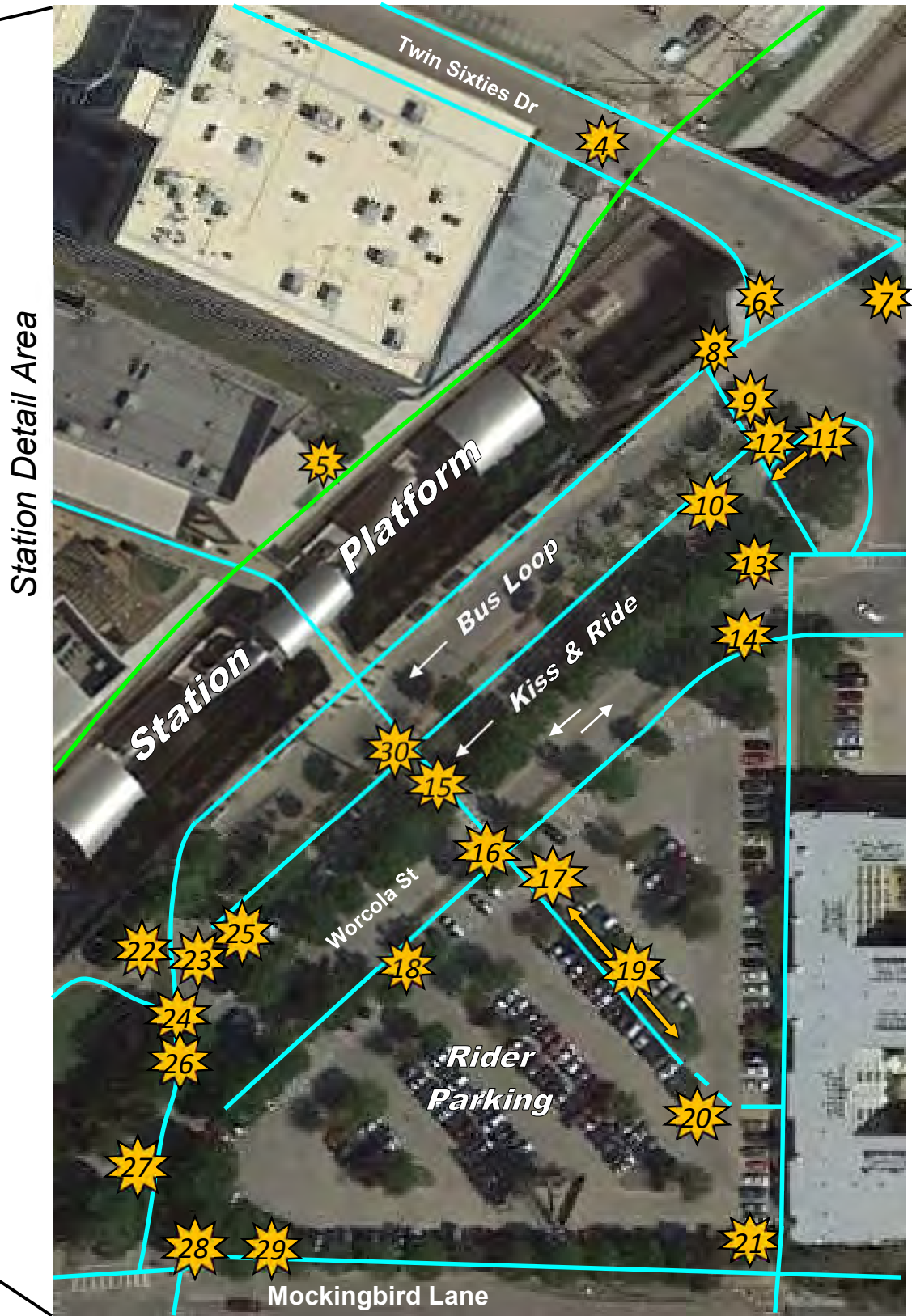
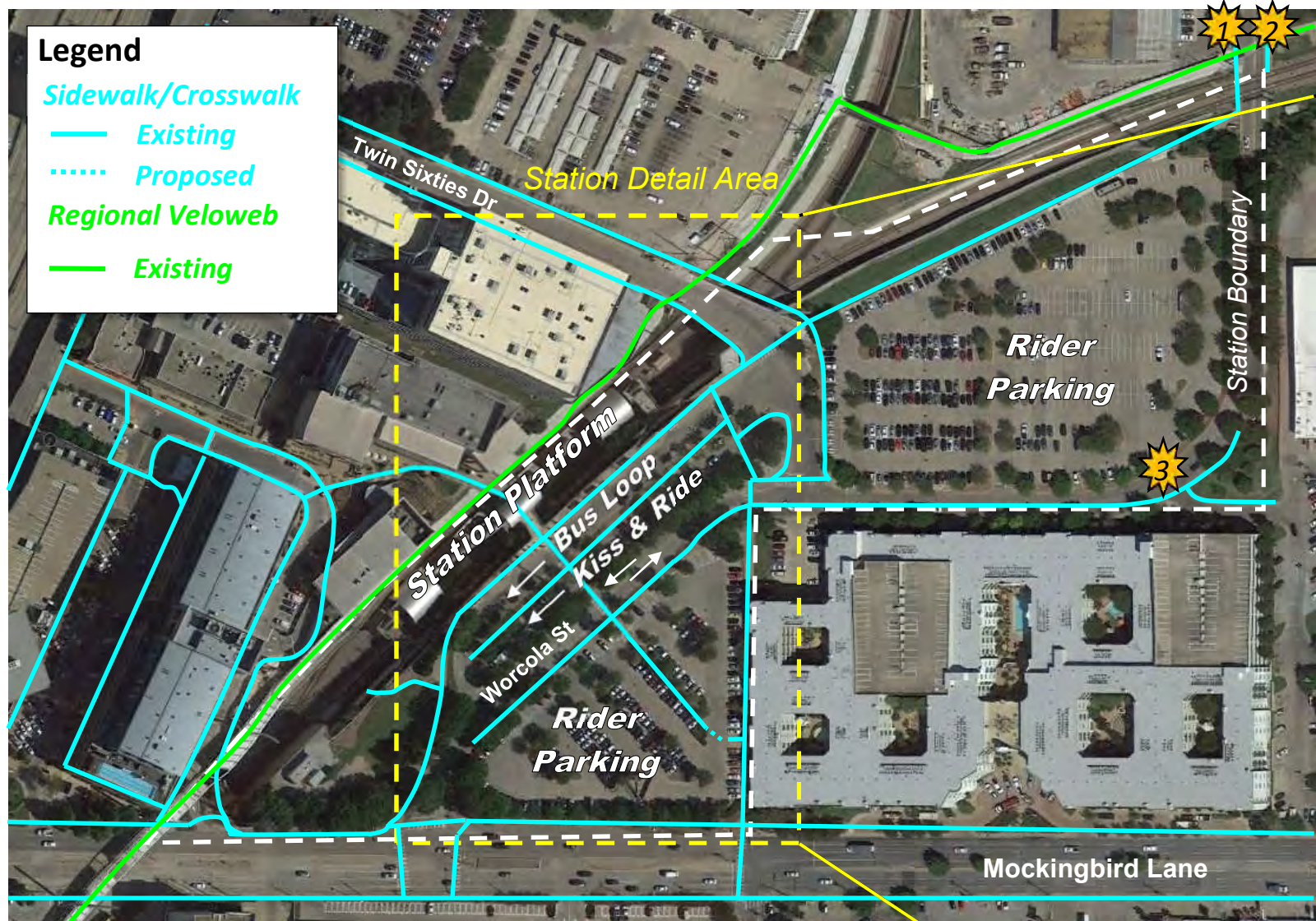


Mockingbird Station Recommended Access Improvements



Legend

- Sidewalk/Crosswalk
- Existing (solid cyan line)
- Proposed (dotted cyan line)
- Regional Veloweb (dashed yellow line)
- Existing (solid green line)



See next sheet for improvements table.

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FIGURE 4D-1.1 NOT TO SCALE MAY 2020



Mockingbird Station Recommended Improvements (Continued)



Number	Description	Number	Description
1	Move "Yield To Pedestrian Sign" to the yield line. Add pedestrian crossing warning signs at crosswalk.	17	Add pedestrian crossing warning signs at crosswalk.
2	Mount "Bike Route" sign plaque and "STOP Sign" plaque on separate posts as per MUTCD.	18	Reconstruct pedestrian ramps to have shallower slope compliant with ADA. The existing ramps are too steep for use by manual wheelchair users. ADA parking southwest of this driveway may be under-utilized as a result of inadequate ramps.
3	Build sidewalk pad at bus stop.		
4	Add pedestrian signs at crosswalk.		
5	Add a new bike parking area near the trail at the bottom of the stairs.	19	Trim hedges and add parking bumpers to provide a minimum 4 feet width for wheelchairs. Only 3.5 feet width existing.
6-7	Add a diagonal downward pointing arrow (W16-7P) plaque mounted to the existing pedestrian sign posts.	20	Add marked crosswalk with pedestrian warning signs and detectable warning surfaces for pedestrian ramps.
8-9	Update "DO NOT ENTER" signs to meet MUTCD standards. Mount left-hand pedestrian warning sign on a separate post and provide a new pedestrian warning sign on the right-hand side. Add diagonal downward arrow (W16-7P) supplemental plaques below the pedestrian crossing warning signs.	21	Relocate ramp to connect to existing crosswalk.
		22	Add pedestrian lighting for area where tree cover makes for dark nighttime conditions.
10	Remove non-standard "ONE WAY" sign that is not necessary.	23	Update "DO NOT ENTER" signs to meet MUTCD standards. Remove "Except Buses" plaque.
11-12	Relocate pedestrian crossing sign #11 closer to crosswalk. Add diagonal downward arrow (W16-7P) supplemental plaques below the pedestrian crossing warning signs.	24	Add "DO NOT ENTER" sign.
13	Update pedestrian crossing sign to meet MUTCD standards. Add diagonal downward arrow (W16-7P) supplemental plaque below the pedestrian crossing warning sign.	25	Enlarge the size of "STOP" sign to obscure the shape of signs mounted on the other side.
14	The current STOP sign facing eastbound traffic is not visible for a sufficient distance around the horizontal curve. Add "Stop Ahead" (W3-1) sign ahead of "STOP" sign and the preceding curve. Remove pedestrian sign at crosswalk facing eastbound approach since it competes for attention with more important stop sign message. Add "ALL-WAY" (R1-3P) plaques below existing STOP signs. Add a new STOP sign with R1-3P plaque facing the northbound apartment driveway approach to this intersection.	26	Fix trip hazard.
		27	Replace faded "DO NOT ENTER" sign.
		28	Build sidewalk at the existing worn path in grass.
15-16	Add diagonal downward pointing arrow (W16-7P) supplemental plaques below the pedestrian crossing warning signs. Repair the southbound LED lights in sign border (currently not functioning), repair pedestrian detection, and/or trim trees for more solar power.	29	Fix trip hazard where sidewalk has settled around storm drain inlet.
		30	Add detectable warning surfaces to pedestrian ramps where missing. The location shown is one example. Several others exist throughout the station area.



Mockingbird Station Existing Conditions at Improvement Locations



1 Move "Yield To Pedestrian Sign" to the yield line.
Add pedestrian crossing warning signs at crosswalk.



2 Mount "Bike Route" sign plaque and "STOP Sign" plaque on separate posts.



3 Build sidewalk pad at bus stop.



W11-2
W16-7P

* Sign should be retroreflective for increased nighttime visibility. The sign panel shall be diamond-shaped. Uniform signs reinforce driver respect as legitimate traffic control devices.



4 Add pedestrian signs at crosswalk

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Mockingbird Station Existing Conditions at Improvement Locations



Add a diagonal downward pointing arrow (W16-7P) plaque mounted to the existing pedestrian sign posts.



W16-7P

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FIGURE 4D-1.4 NOT TO SCALE MAY 2020



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Mockingbird Station Existing Conditions at Improvement Locations



Update "DO NOT ENTER" signs to MUTCD standard with all CAPS lettering. Mount pedestrian signs on a separate post with diagonal arrow plaques. Add pedestrian sign with diagonal arrow on right side of crosswalk also.



Remove non-standard "ONE WAY" sign that is not necessary. Relocate left-hand pedestrian sign closer to crosswalk. Add diagonal downward pointing arrow (W16-7P) supplemental plaques below the pedestrian crossing warning signs.



R5-1



* Signs should be retroreflective for increased nighttime visibility. The sign panel shall be diamond-shaped. Uniform signs reinforce driver respect as legitimate traffic control devices.

W11-2
W16-7P

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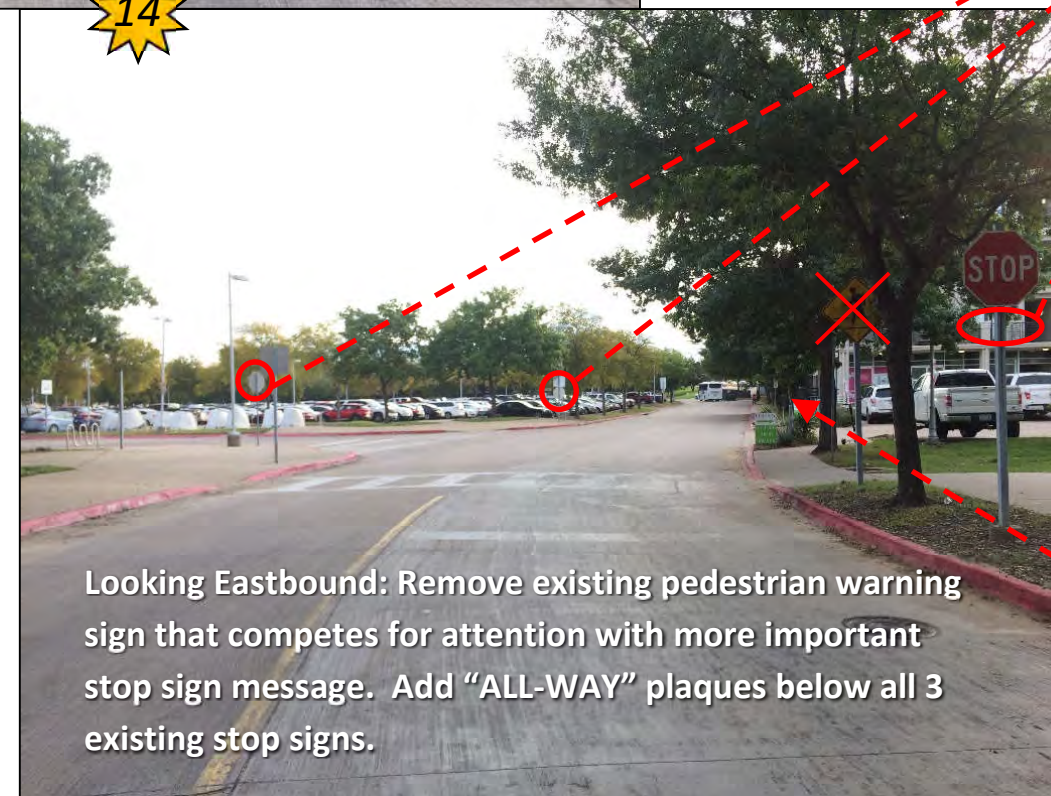
FIGURE 4D-1.5 NOT TO SCALE MAY 2020



Mockingbird Station Existing Conditions at Improvement Locations



Replace non-standard sign with W11-2 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices. Add W16-7P panel as required.



Add a new STOP sign with R1-3P "ALL-WAY" plaque facing the northbound apartment driveway approach to this intersection.

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FIGURE 4D-1.6 NOT TO SCALE MAY 2020



Mockingbird Station Existing Conditions at Improvement Locations



W11-2
W16-7P

Add diagonal downward pointing arrow (W16-7P) supplemental plaques below the pedestrian crossing warning signs. Repair the southbound LED lights in sign border (currently not functioning), repair pedestrian detection, and/or trim trees for more solar power.

Add pedestrian crossing warning signs at crosswalk.



W11-2
W16-7P

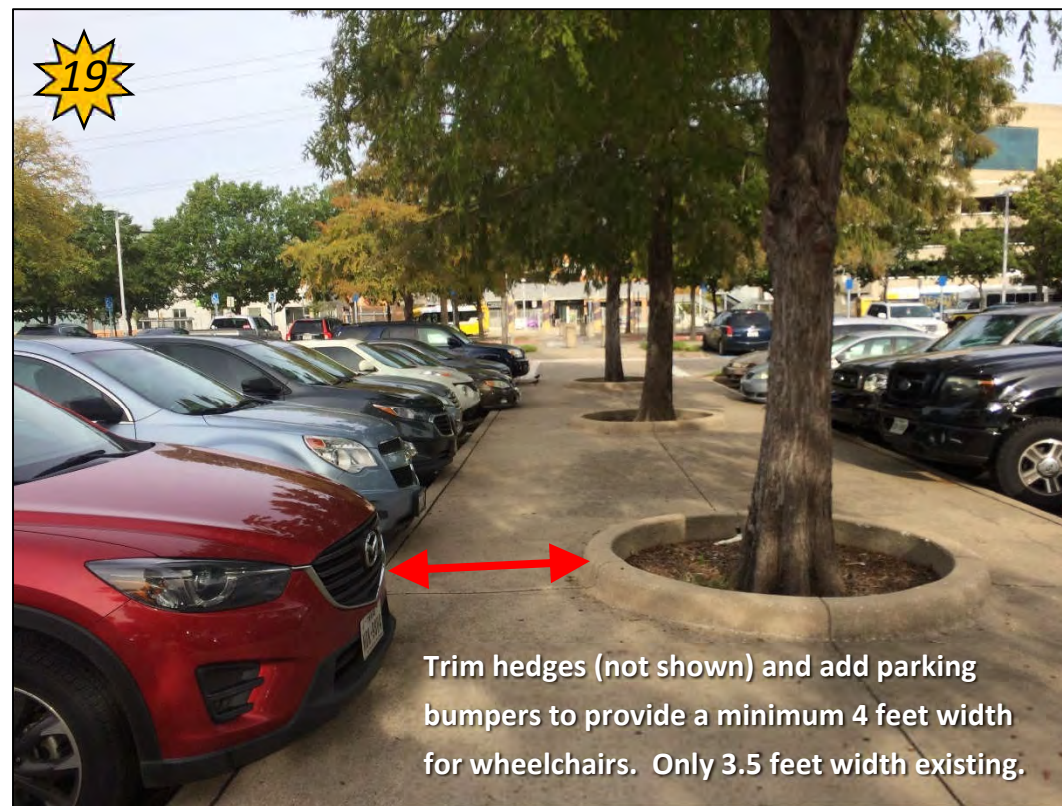
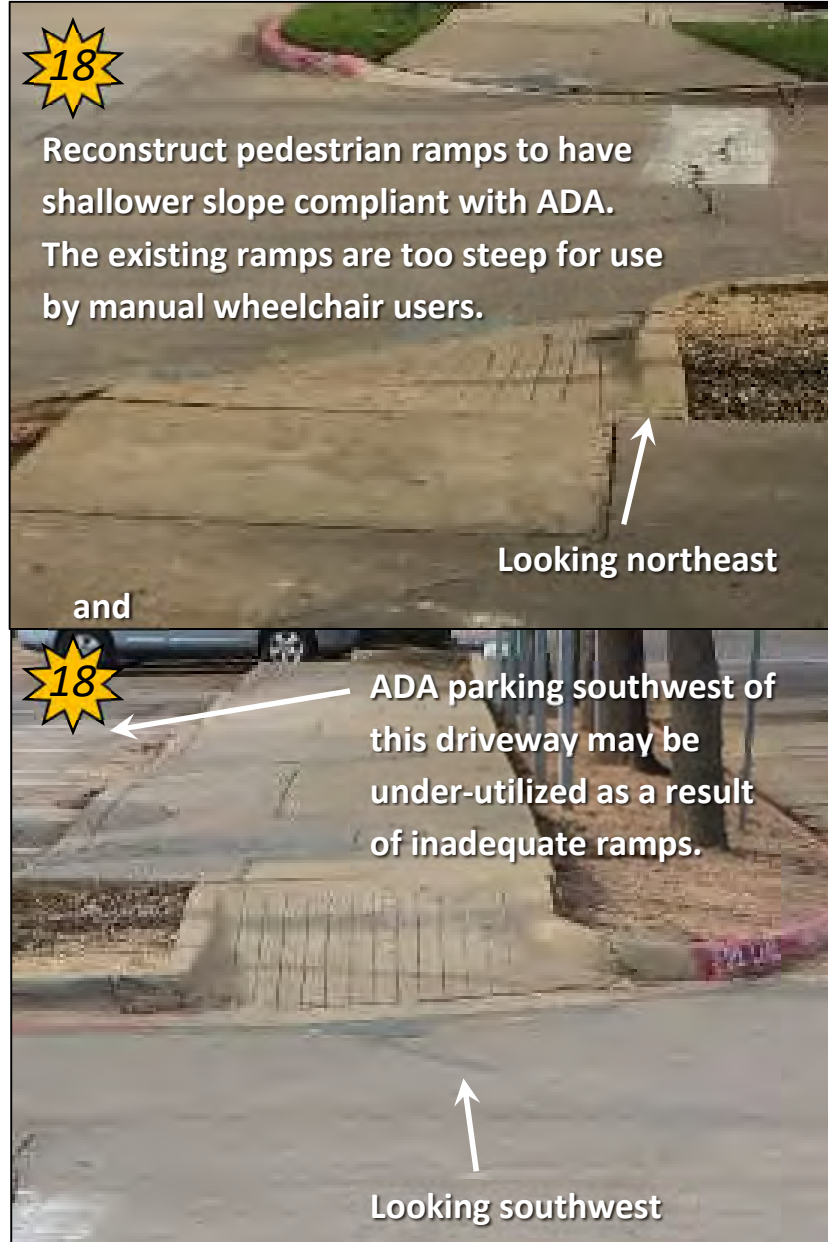
* Signs should be retroreflective for increased nighttime visibility. The sign panel shall be diamond-shaped. Uniform signs reinforce driver respect as legitimate traffic control devices.

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FIGURE 4D-1.7 NOT TO SCALE MAY 2020



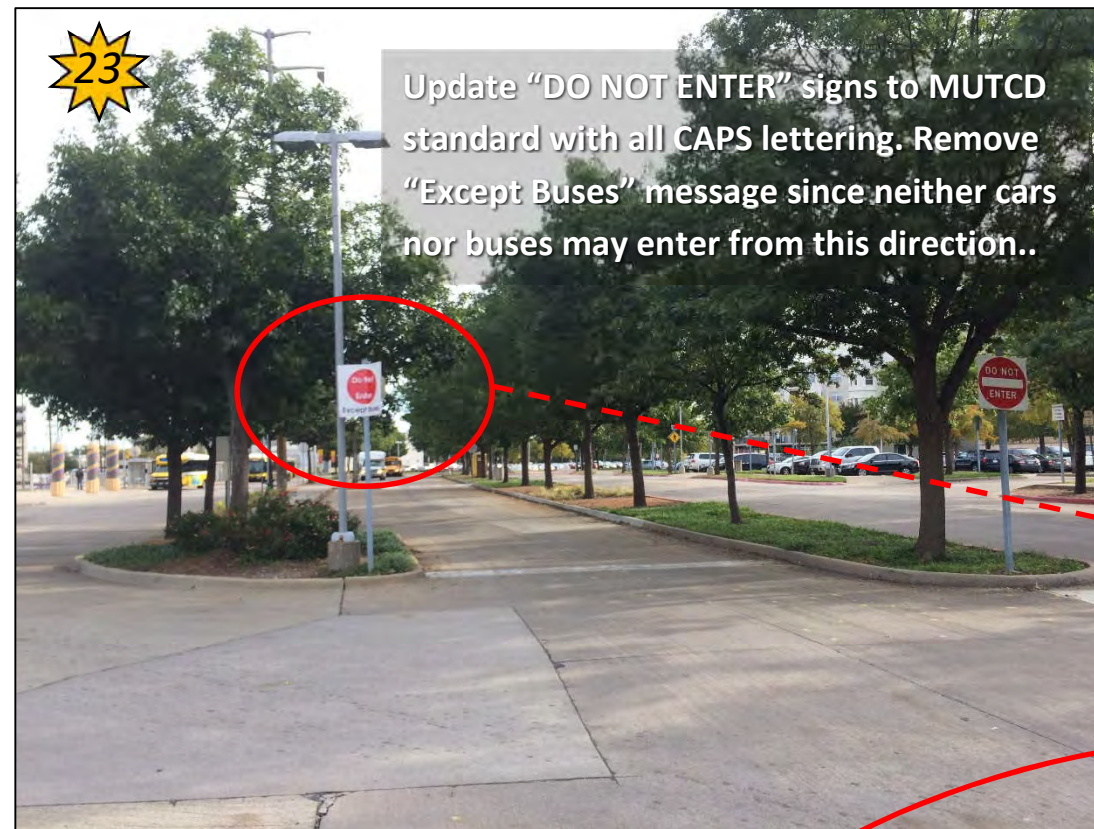
Mockingbird Station Existing Conditions at Improvement Locations



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FIGURE 4D-1.8 NOT TO SCALE MAY 2020

Mockingbird Station Existing Conditions at Improvement Locations



R5-1



DRAFT – Not for Construction

Mockingbird Station Existing Conditions at Improvement Locations

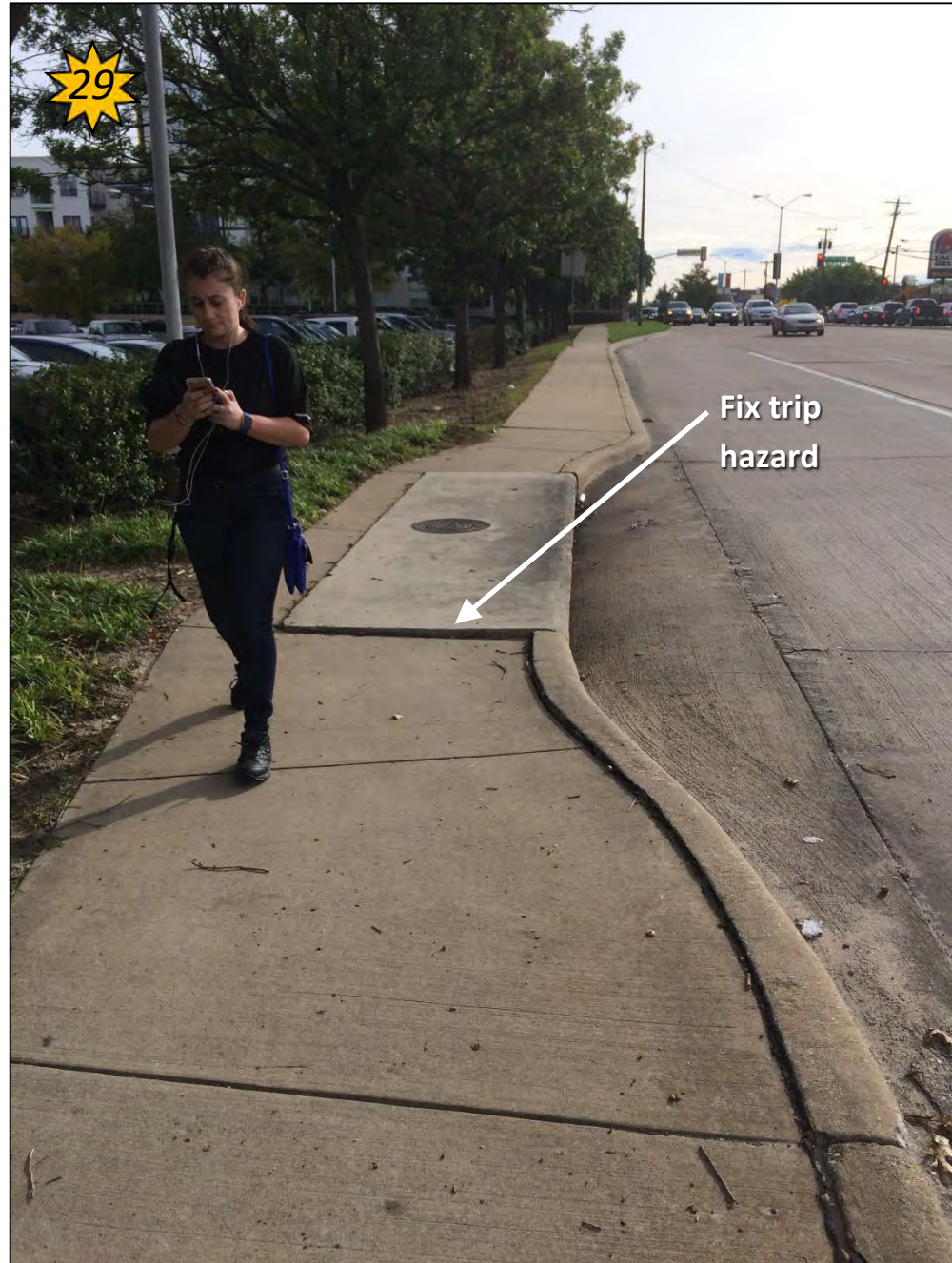


R5-1



DRAFT – Not for Construction

Mockingbird Station Existing Conditions at Improvement Locations



Add detectable warning surfaces to pedestrian ramps where missing. The above location is one example. Several others exist throughout the station area.

- Fixing trip hazards and building short segments of new sidewalk where worn paths in the grass indicate existing pedestrian demand (locations 4D-MB-ST-26, 28 and 29 in Figures 4D-1.1, 4D-1.2, 4D-1.10 and 4D-1.11 on pages 29, 30 and 37).

Refer to the figures on pages 29-39 for additional details.

The total OPCC for the DART improvements is approximately \$110,000. This does not include the addition of detectable warning surfaces to pedestrian ramps where missing, since these locations were numerous and not inventoried. Some improvements may need to be coordinated with adjacent property owners and/or the City of Dallas. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.7 LBJ Skillman Station (on DART Property)

Figure 4E-1.1 on page 41 identifies eight improvements recommended at LBJ Skillman Station on DART property. Figures 4E-1.2 and 4E-1.3 on pages 42-43 illustrate existing conditions at the eight improvement locations.

The recommended improvements include:

- Building new ramps and crosswalks.
- Updating signing to MUTCD standards.
- Installing covered bike parking near the southeast corner of the train platform to better accommodate bicyclists to and from the south.

Refer to the figures for additional details.

DART staff indicated that the vacant area north of the rail line has been proposed for development. However, further details about the proposals are not known. Two worn paths in the grass across this vacant area connecting the Park & Ride lot to Adleta Blvd are evident in the aerial photo on the left side of Figure 4E-1.1 on page 41. As these properties develop, DART should ensure during the plan review process that sidewalks are built to allow reasonably direct access to continue for residents of the neighborhoods to the north along Adleta Blvd and beyond.

Since these new sidewalks will likely be off DART property in the future after development, they were inventoried with improvements for the half-mile area, and their costs are estimated with other half-mile improvements in Appendix J. See details for half-mile area improvements 4E-LS-SW-35 and 4E-LS-SW-37 in Figure 4E-2 on page 90 and the associated entries in Appendix J, which shows the tentatively estimated cost of these sidewalk links at \$42,300 and \$14,600, respectively.

The total OPCC for the DART improvements is approximately \$40,000. This excludes costs for improvements 4E-LS-SW-35 and 4E-LS-SW-37 described in the previous paragraph, which are assumed to be borne by either a developer or the City of Dallas. If development will be delayed, DART should consider constructing the sidewalks sooner to provide dedicated, accessible routes where there is clearly existing demand. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.8 White Rock Station (on DART Property)

Figure 4F-1.1 on page 44 identifies eight improvements recommended at White Rock Station on DART property. Figures 4F-1.2 and 4F-1.3 on pages 45-46 illustrate existing conditions at the eight improvement locations.

Access to the White Rock Station is relatively straightforward for pedestrians and bicyclists arriving from the south east, and west. However, the residents along Walling Lane and other parts of the neighborhood northwest of the station must exit their neighborhood and travel along Northwest Highway to reach the station, adding up to a half mile to their trip.

Walling Circle connects to Walling Lane and dead ends at the fence surrounding the DART property. DART should consider working together with the City of Dallas to provide a pedestrian break in the fencing to connect to existing sidewalk on the east side of Walling Circle. The City may also decide to build sidewalk along the west side of Walling Circle (see improvement 4F-WR-SW-40 on Figure 4F-2 on page 91).

While this recommended improvement would shorten the walking distance between the station and many homes, care should be taken not to incentivize park and ride patrons from parking along Walling Lane or Walling Circle, since this may be closer than available spaces in the station's rider parking lot. The City may therefore need to consider implementing a parking management program to restrict parking along some portions of Walling Lane unless a residential parking permit is displayed in the vehicle.

Other recommended improvements include:

- Adding and improving pedestrian ramps for better accessibility along the main sidewalk between the rider parking lot and the station platform, as well as at the station entrance intersection.
- Updating signing to MUTCD standards.

Refer to the figures for additional details.

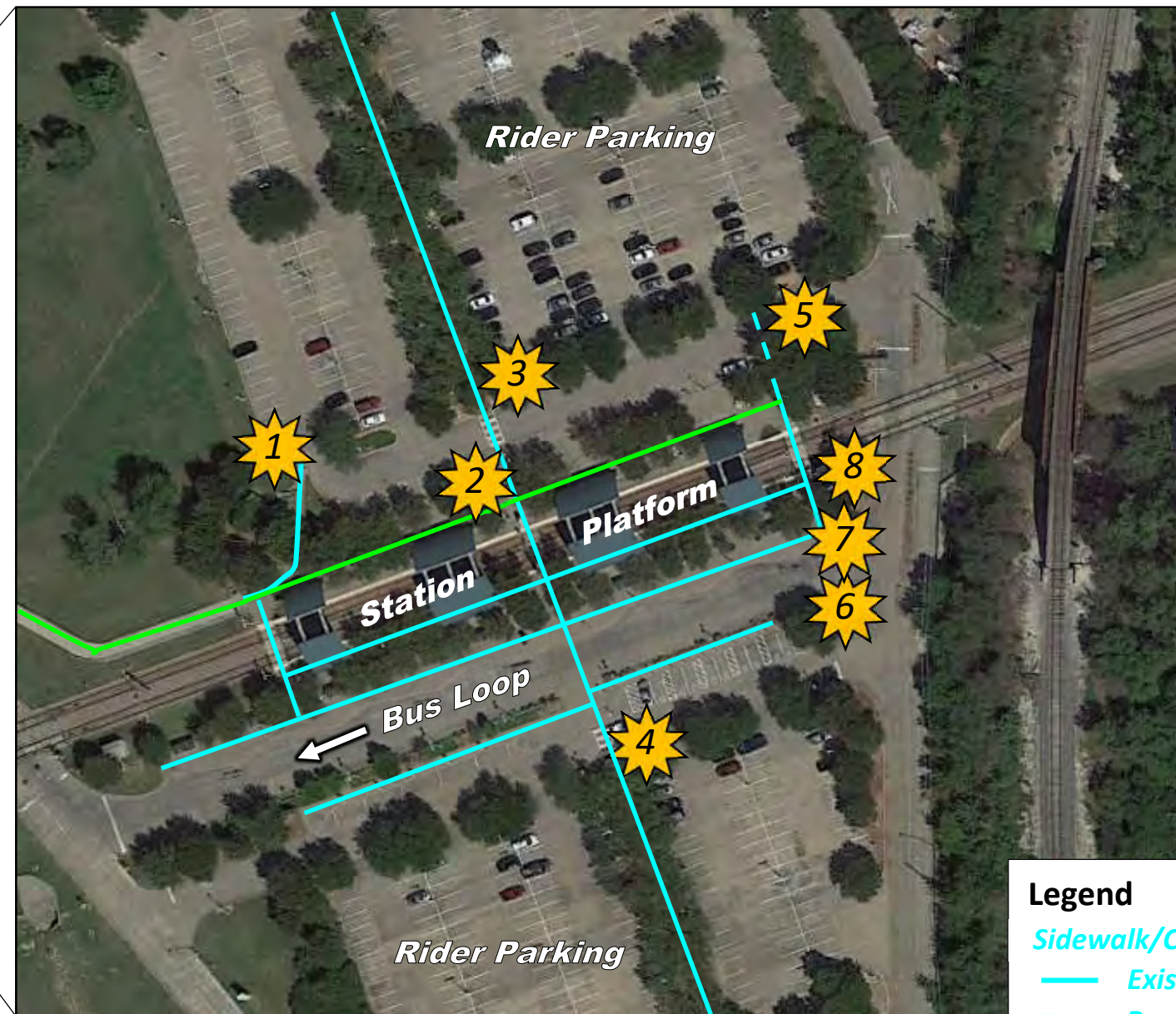
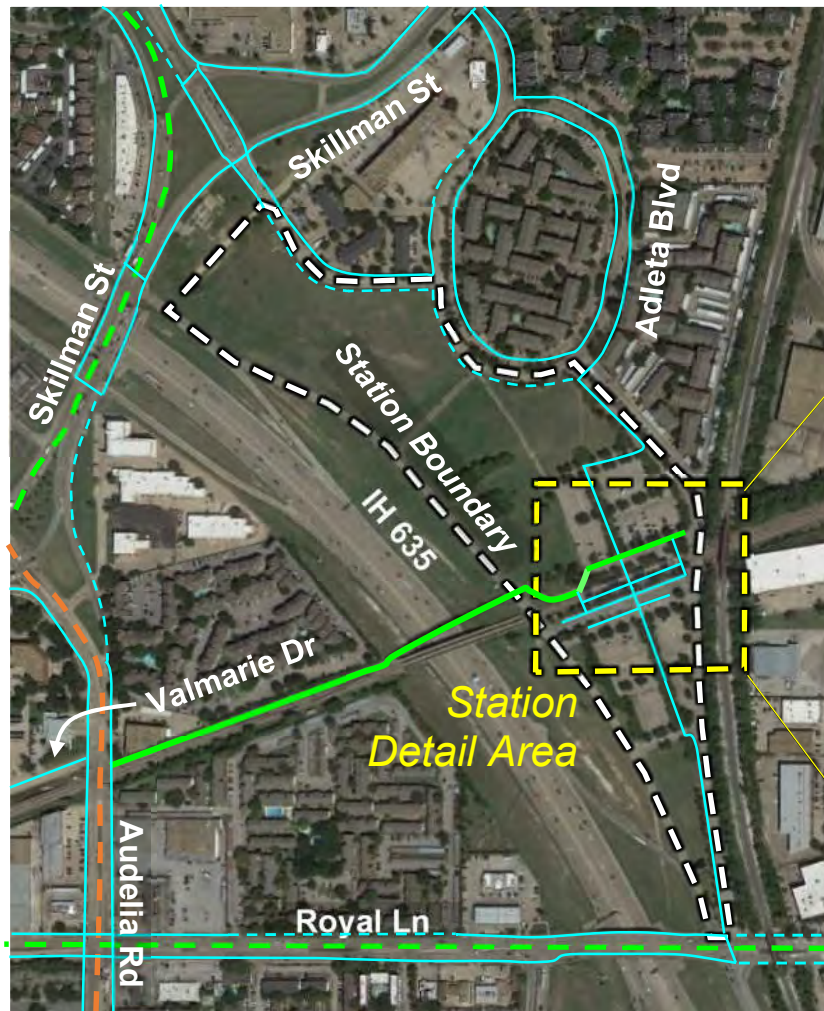
The total OPCC for the DART improvements is approximately \$59,000. This excludes costs for improvement 4F-WR-SW-40, and includes only improvements shown within DART right-of-way. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

LBJ Skillman Station Recommended Access Improvements



Location:

N
↑



Legend

Sidewalk/Crosswalk

— Existing

- - Proposed

City of Dallas On-Street Bikeways

- - Proposed

City of Dallas Shared-Use Paths

— Existing

- - Proposed

Number	Description
1	Build new ADA ramp.
2-4	Update pedestrian warning signs to meet MUTCD standards. The existing signs are fading, have the wrong panel shape, and do not have supplemental arrow plaques as required to meet MUTCD standards.
5	Build new crosswalk and ramps to connect the DART station platform and the northern parking lot.
6-7	Update "DO NOT ENTER" signs to meet MUTCD standards.
8	Add new bike parking near the open space at the southeast corner near the train platform to accommodate bicyclist from south.

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LBJ Skillman Station Existing Conditions and Improvements



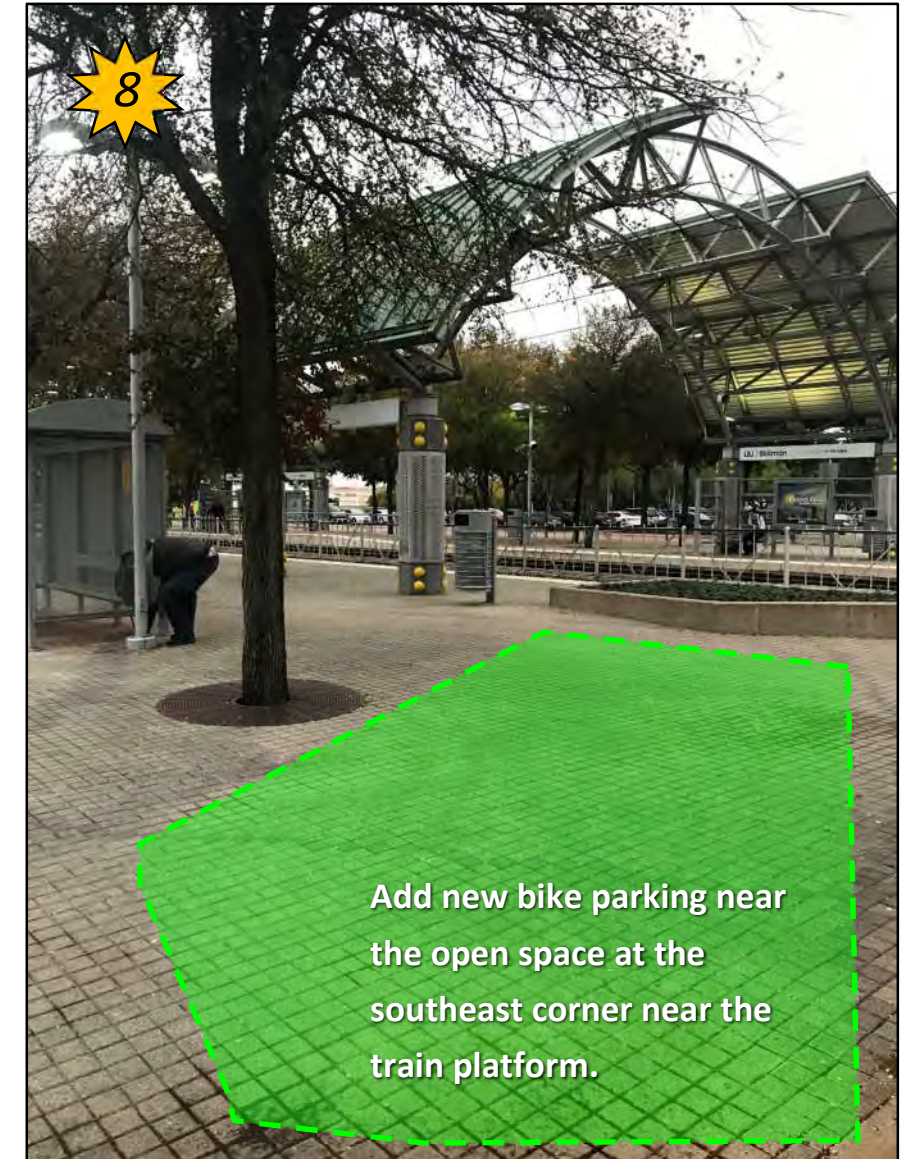
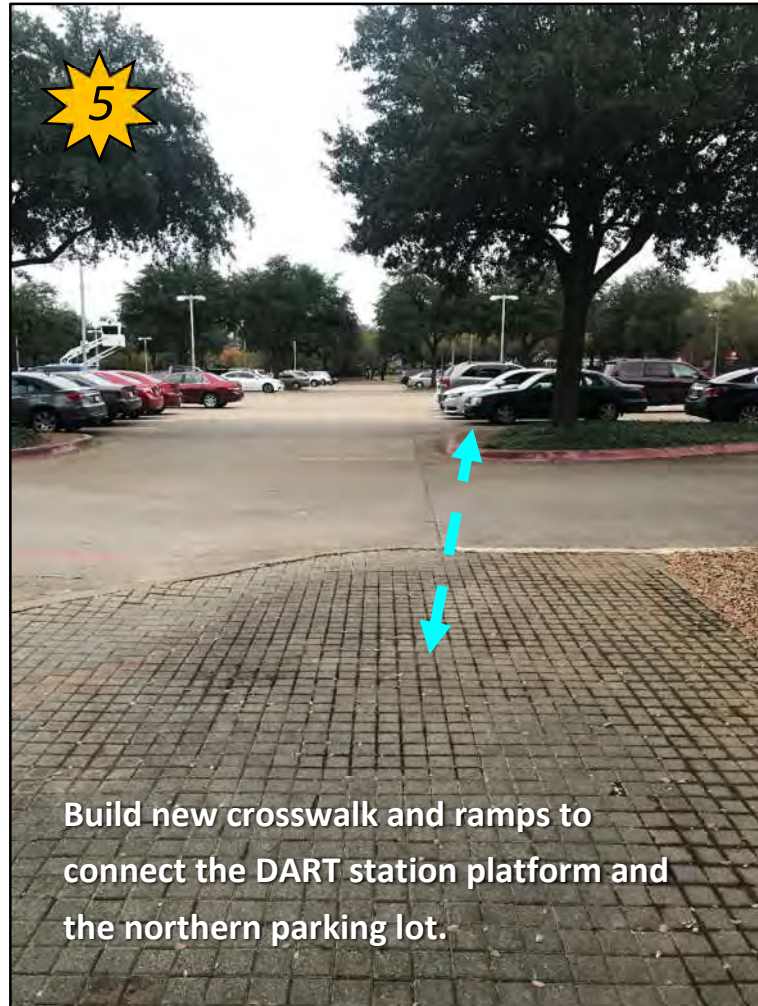
Replace non-standard signs with W11-2 signs from MUTCD. Signs should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.



W11-2
W16-7P

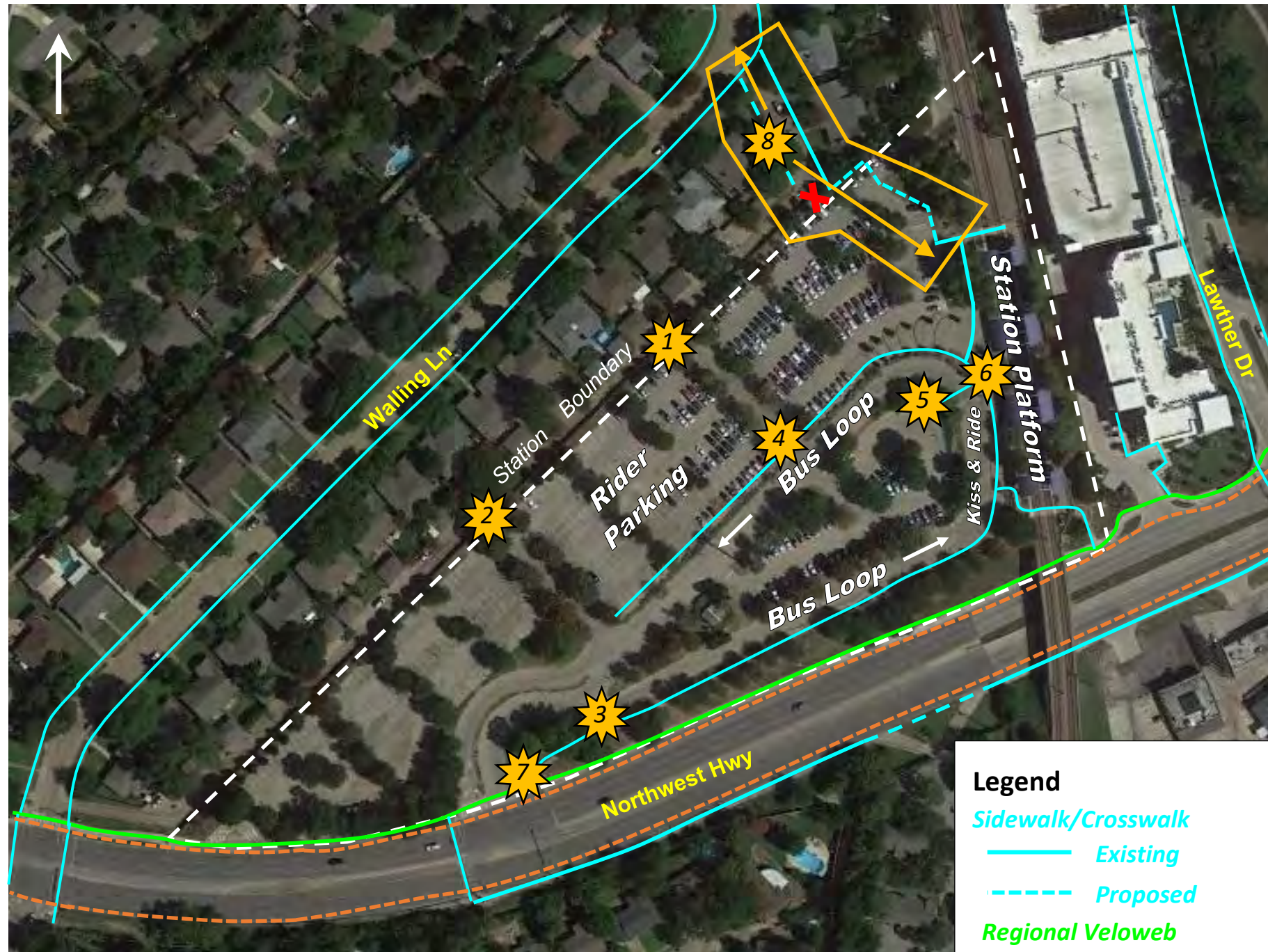
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LBJ Skillman Station Existing Conditions and Improvements



R5-1

White Rock Station Recommended Access Improvements



Number	Description
1-2	Update speed limit signs to meet MUTCD standards.
3	Update "DO NOT ENTER" signs to meet MUTCD standards.
4	Add pedestrian ramps to existing sidewalk at parking aisle intersection. Move stop bar and stop sign north behind unmarked crosswalk, then provide crosswalk markings to discourage drivers from stopping across pedestrian path.
5-6	Add detectable warning surfaces to the pedestrian ramps at the crosswalk connecting the parking lot and the station platform.
7	Pedestrian ramps need to be reconstructed parallel to the crosswalk. Move the pedestrian warning sign closer to the crosswalk, and add diagonal arrow signs below it.
8	Remove the fence at the north end of the station lot and provide a pedestrian connection to Walling Circle and Walling Lane for neighborhood residents. A parking management program may be needed to prevent non-neighborhood residents from parking on the streets.

Not for Construction

FIGURE 4F-1.1 NOT TO SCALE MAY 2020

White Rock Station Existing Conditions at Improvement Locations



R2-1

Replace non-standard signs with R2-1 signs from MUTCD. Signs should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.



Update "DO NOT ENTER" signs to MUTCD standard with all CAPS lettering



EXCEPT BUSES

R5-1

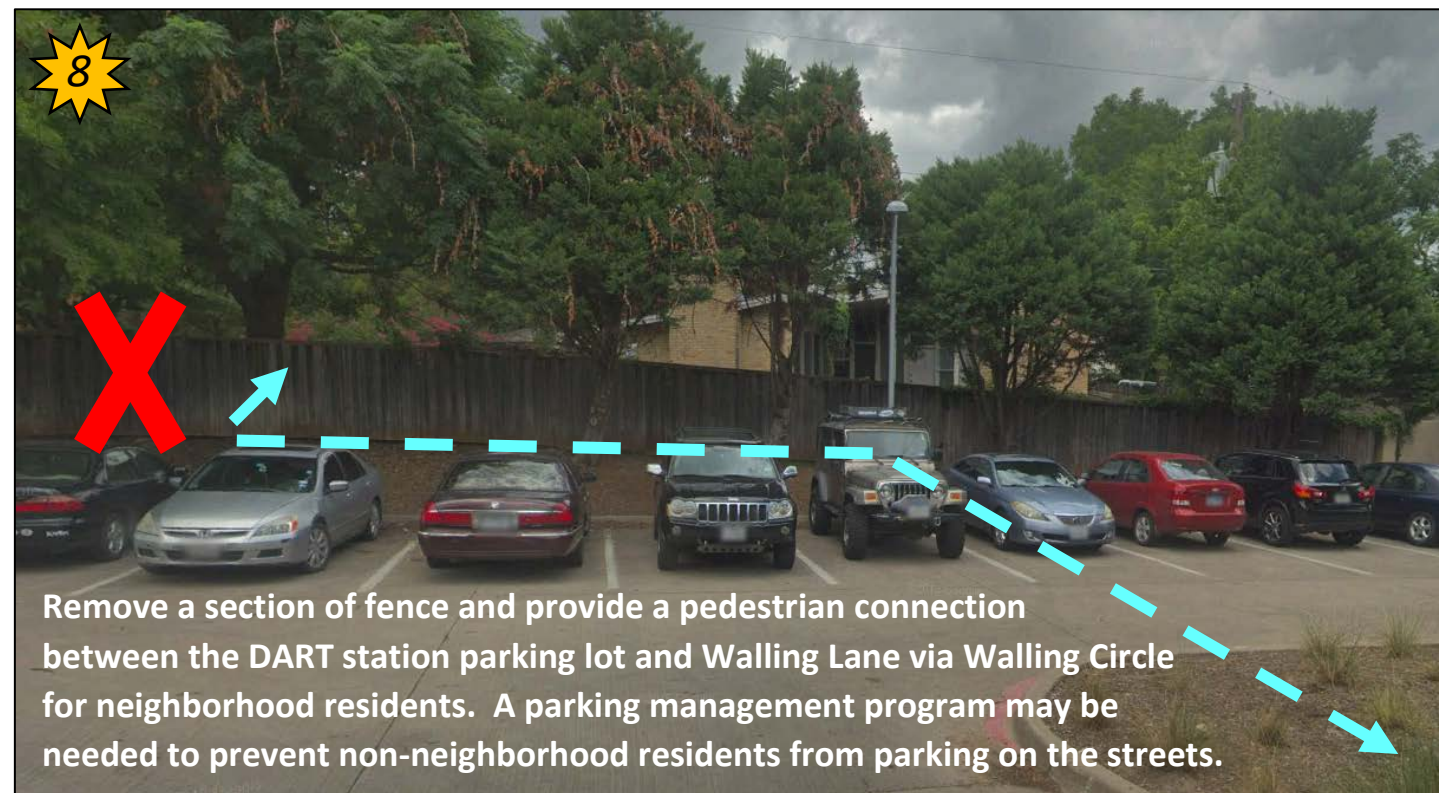
Replace non-standard sign with R5-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. The sign panel shall have all capital letters. Uniform signs reinforce driver respect as legitimate traffic control devices.



Add pedestrian ramps to existing sidewalk. Move stop bar and stop sign north behind unmarked crosswalk and add crosswalk markings.

Not for Construction

White Rock Station Existing Conditions at Improvement Locations



Not for Construction

3.1.9 Eighth & Corinth Station (on DART Property)

Figure 5A-1.1 on page 48 identifies eight improvements recommended at Eighth & Corinth Station on DART property. Figures 5A-1.2 and 5A-1.3 on pages 49-50 illustrate existing conditions at the eight improvement locations.

Multi-modal access to this station is generally good from all directions. However, DART and the City of Dallas should coordinate to make the existing crosswalk across Eighth Street east of the station platform more visible to motorists. This crosswalk is part of the Santa Fe Trestle Trail alignment that connects to the Trinity Skyline Trail and currently ends at Eighth & Corinth Station.

The recommended improvement is shown at location 5A-EC-ST-08 on Figure 5A-1.1 on page 48 and Figure 5A-1.3 on page 50. Add advance yield lines and "Yield Here to Pedestrians" signing 20 to 50 feet in advance of the crosswalk in each direction. This will improve visibility when a driver in one lane yields to pedestrians, potentially blocking the view of the pedestrian to drivers in the adjacent lane if yielding does not occur far enough in advance. Relocate the existing bus stop downstream of the crosswalk. Consider installing pushbutton-activated rectangular rapid flashing beacons (RRFB's) to the pedestrian warning signs. Upgrade other elements of signing on the approach as detailed in the figures.

Other recommended improvements include updating signing and crosswalk striping to MUTCD standards at other locations around the station property. Refer to the figures for additional details.

Note that the Santa Fe Trestle Trail alignment is proposed to continue to the southwest of the station across Corinth Street Road to Moore Street, parallel to the DART Red Line tracks. These improvements just off DART station property are presumed to be the responsibility of the City of Dallas, so they are detailed in the half-mile area improvements illustrated in Figure 5A-2.1 on page 93. Refer to location 5A-EC-VW-V01, 5A-EC-VW-V02, and 5A-EC-CW-084 on that figure and in Appendix J for more details and cost information. Nevertheless, coordination between DART and the City will be required due to the proximity to DART right-of-way and the existing rail overpass over Corinth Street Road.

The total OPCC for the DART improvements (excluding the Santa Fe Trestle Trail extension) is approximately \$59,000. This includes costs for improvement 5A-EC-ST-08, since a portion of the improvements may be located within DART right-of-way. However, some cost sharing with the City of Dallas may be appropriate. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.10 Dallas Zoo Station (on DART Property)

Figure 5B-1.1 on page 51 identifies seven improvements recommended at Dallas Zoo Station on DART property. Figure 5B-1.2 on page 52 illustrates existing conditions at the seven improvement locations.

Sidewalk connections to and from the Dallas Zoo Station are generally good in each direction, though there are no connections to/from the Marsalis Avenue sidewalks on the bridge overpassing Clarendon Drive. DART could consider adding stairway and/or elevator access to the sidewalk on the bridge above, which would shorten walking and biking trips to the station for some destinations to the northwest. However, further evaluation of stairway and elevator improvements were considered outside the scope of this study and are not included in the cost estimates.

DART should coordinate with the City of Dallas to improve the existing crosswalk across Clarendon Drive for better visibility. Add advance yield lines and "Yield Here to Pedestrians" signing 20 to 50 feet in advance of the crosswalk in each direction. This will improve visibility when a driver in one lane yields to pedestrians, potentially blocking the view of the pedestrian to drivers in the adjacent lane if yielding does not occur far enough in advance. Other signs and pavement markings need to be added, and DART and the City should consider pedestrian-actuated Rectangular Rapid-Flashing Beacons (RRFB's) for better pedestrian visibility and driver yielding compliance.

Other recommended improvements include adding and updating signs and crosswalk striping to comply with MUTCD requirements. Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$73,000. This excludes costs any costs for future elevator or stairway access to the sidewalk on Marsalis Avenue. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.11 Morrell Station (on DART Property)

Figure 5C-1.1 on page 53 identifies five improvements recommended at Morrell Station on DART property, as well as the existing conditions at improvement locations.

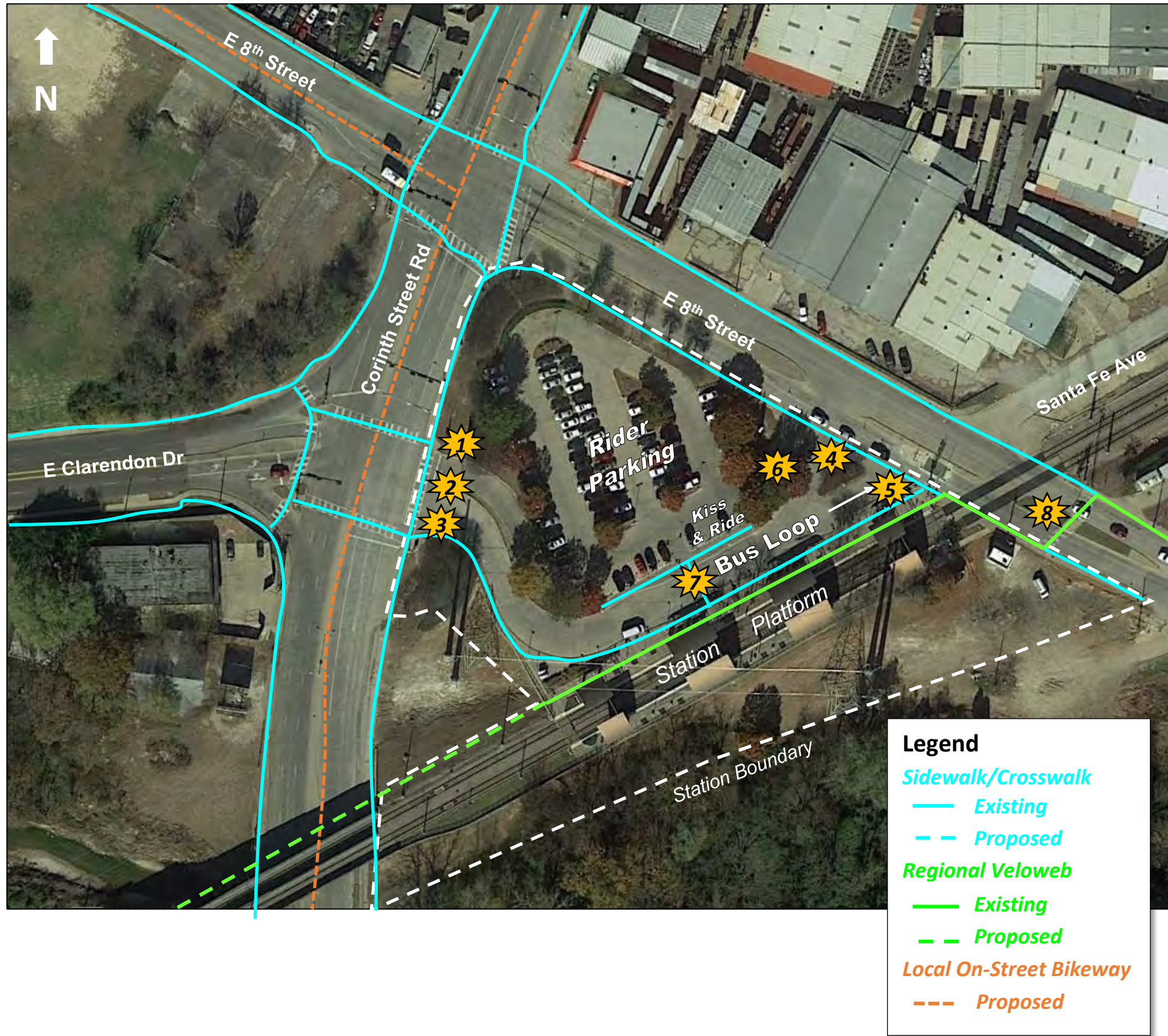
Multi-modal access to this station is generally good from all directions. However, DART and the City of Dallas should coordinate to install signed and marked crosswalks across Morrell Avenue. Consideration should also be given to constructing median refuge islands to shorten the crossing distance and separate conflicts for crossing pedestrians. These improvements just off DART station property are presumed to be the responsibility of the City of Dallas, so they are detailed in the half-mile area improvements illustrated in Figure 5C-2.1 on page 93. Refer to location 5A-MO-CW-066, 5A-MO-CW-067, 5A-MO-CW-068, and 5A-MO-CW-069 on that figure and in Appendix J for more details and cost information. Nevertheless, coordination between DART and the City will be required due to the proximity to DART right-of-way

Other recommended improvements include minor signing changes and relocation of a sign out of the sidewalk near the southeast corner of the station. Refer to the figures for additional details.

The total OPCC for the DART improvements is approximately \$2,000. This excludes costs for improvements 5C-MO-ST-03 and 5C-MO-ST-04, the crosswalks across Morrell Avenue which are quantified together with off-site improvements and assumed to be the City of Dallas' cost responsibility. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.



8th and Corinth Station Recommended Access Improvements



Number	Description
1-5	Update "DO NOT ENTER" signs to meet MUTCD standards. Signs at Locations 1, 4, and 5 should be replaced with signs without the "Except Buses" message beneath, since they control driveways where buses should not enter either. Enlarge the size of "STOP" signs at Locations 4 and 5 to obscure the shape of signs mounted on the other side.
6	Update speed limit sign to meet MUTCD standards.
7	Add crosswalk striping parallel to and on either side of the decorative brick crosswalk to make it a high-visibility crosswalk and to properly define it as a legal crosswalk where pedestrians have the right-of-way.
8	Add advance yield lines and "Yield Here to Pedestrians" signing at the existing crosswalk across Eighth Street. Update pedestrian warning sign in eastbound direction to be fluorescent yellow with diagonal arrow panel pointing to crosswalk. Add pedestrian warning signs in the median refuge island. Relocate "Stop Here on Red" sign on westbound approach below new upstream "Yield Here to Pedestrians" sign. Prevent buses from stopping just upstream of the crosswalk. Consider pushbutton-activated rectangular rapid flashing beacons (RRFB's) attached to the pedestrian warning sign assemblies.

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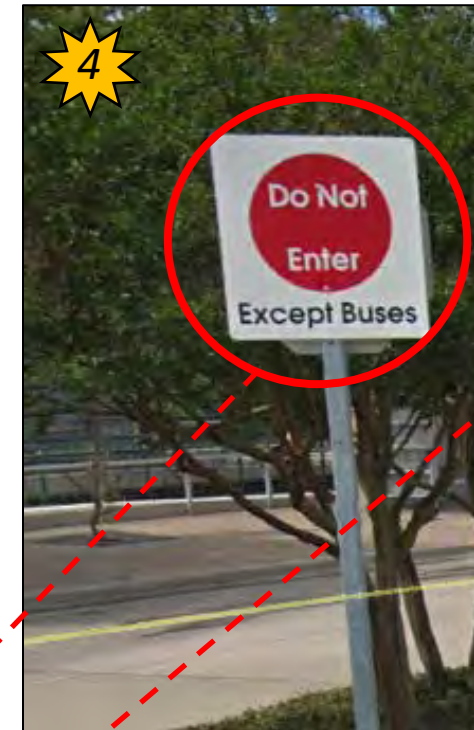
FIGURE 5A-1.1

NOT TO SCALE

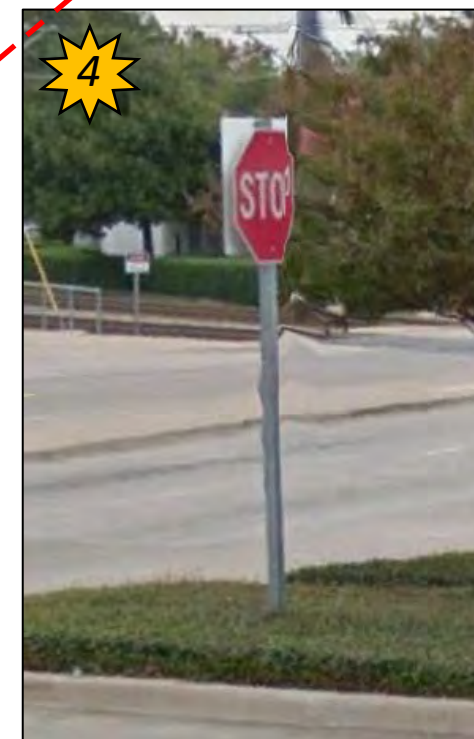
MAY 2020



8th and Corinth Station Existing Conditions at Improvement Locations



Remove "Except Buses" message from Signs at 4 & 5 since no vehicles should enter the one-way bus loop from the wrong direction.



Enlarge the size of "STOP" signs to obscure the shape of signs mounted on the other side.

Remove "Except Buses" message from this sign since no vehicles should enter on the left side of the median here.



Update "DO NOT ENTER" signs to MUTCD standards with all CAPS lettering

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FIGURE 5A-1.2 MAY 2020



LEE ENGINEERING



8th and Corinth Station Existing Conditions at Improvement Locations



R2-1

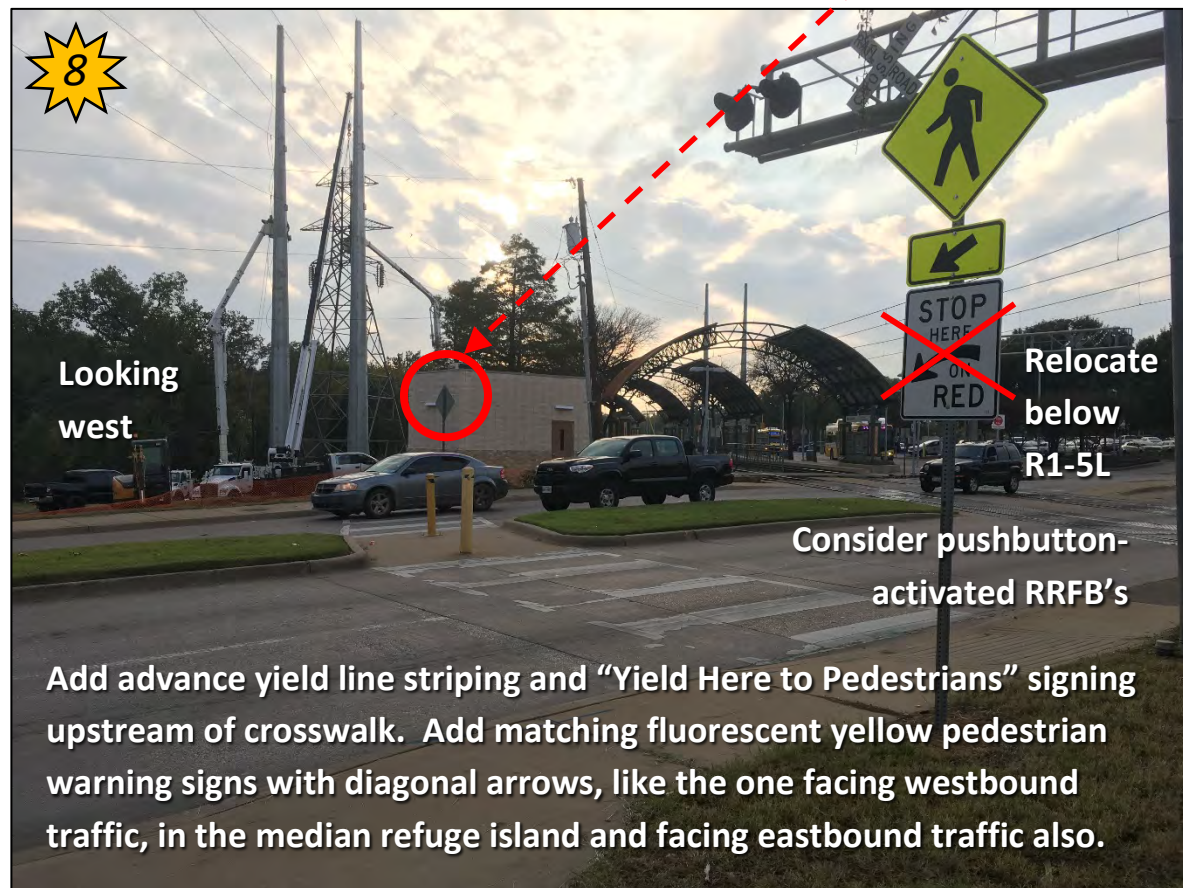
Replace non-standard sign with R2-1 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. Uniform signs reinforce driver respect as legitimate traffic control devices.



Looking east



Add crosswalk striping parallel to and on either side of the decorative brick crosswalk.

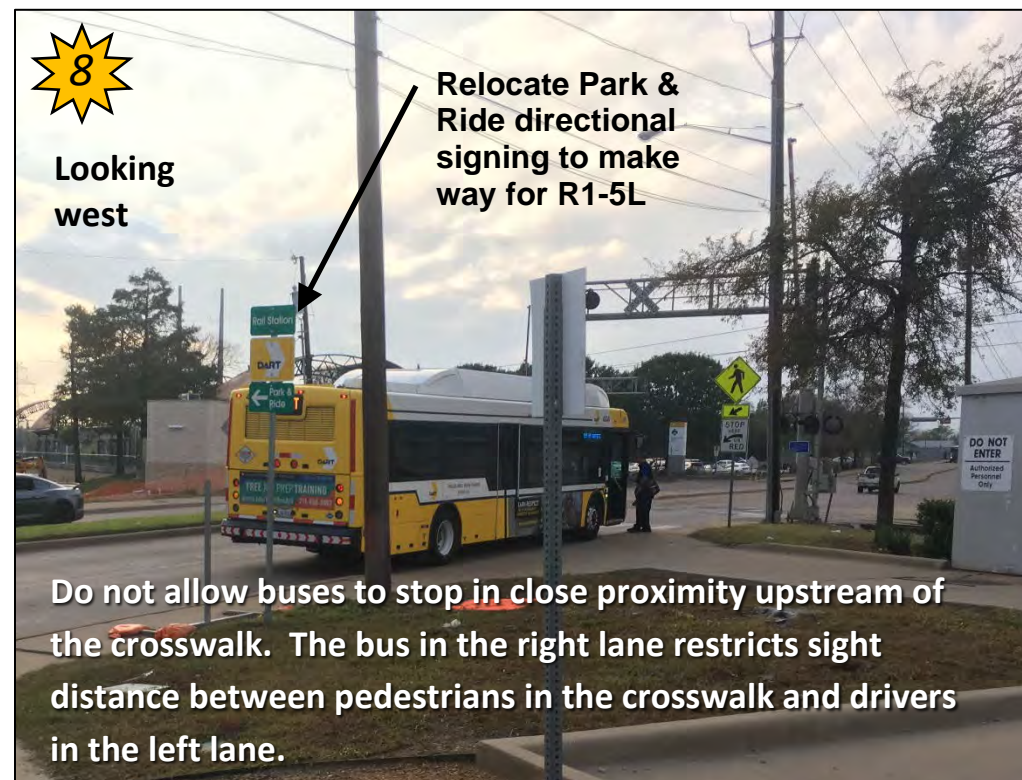


Looking west

Relocate below R1-5L

Consider pushbutton-activated RRFB's

Add advance yield line striping and "Yield Here to Pedestrians" signing upstream of crosswalk. Add matching fluorescent yellow pedestrian warning signs with diagonal arrows, like the one facing westbound traffic, in the median refuge island and facing eastbound traffic also.



Looking west

Relocate Park & Ride directional signing to make way for R1-5L

Do not allow buses to stop in close proximity upstream of the crosswalk. The bus in the right lane restricts sight distance between pedestrians in the crosswalk and drivers in the left lane.



R1-5R



R1-5L

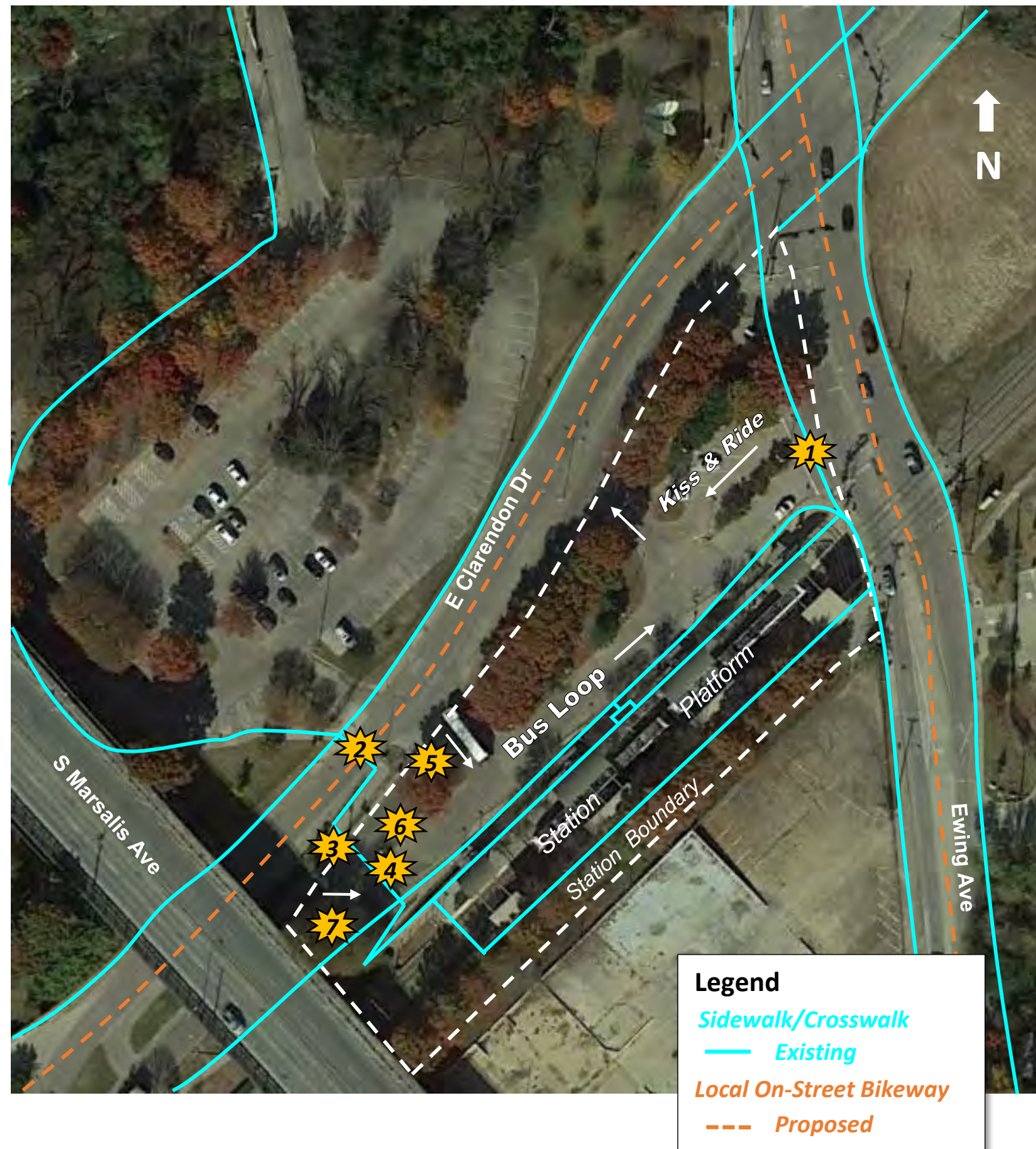
Install "Yield Here to Pedestrians" signs (R1-5L & R1-5R) 20 to 50 feet upstream of crosswalk lines at Location 8 for better visibility of crossing pedestrians.

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FIGURE 5A-1.3 MAY 2020



Dallas Zoo Station Recommended Access Improvements

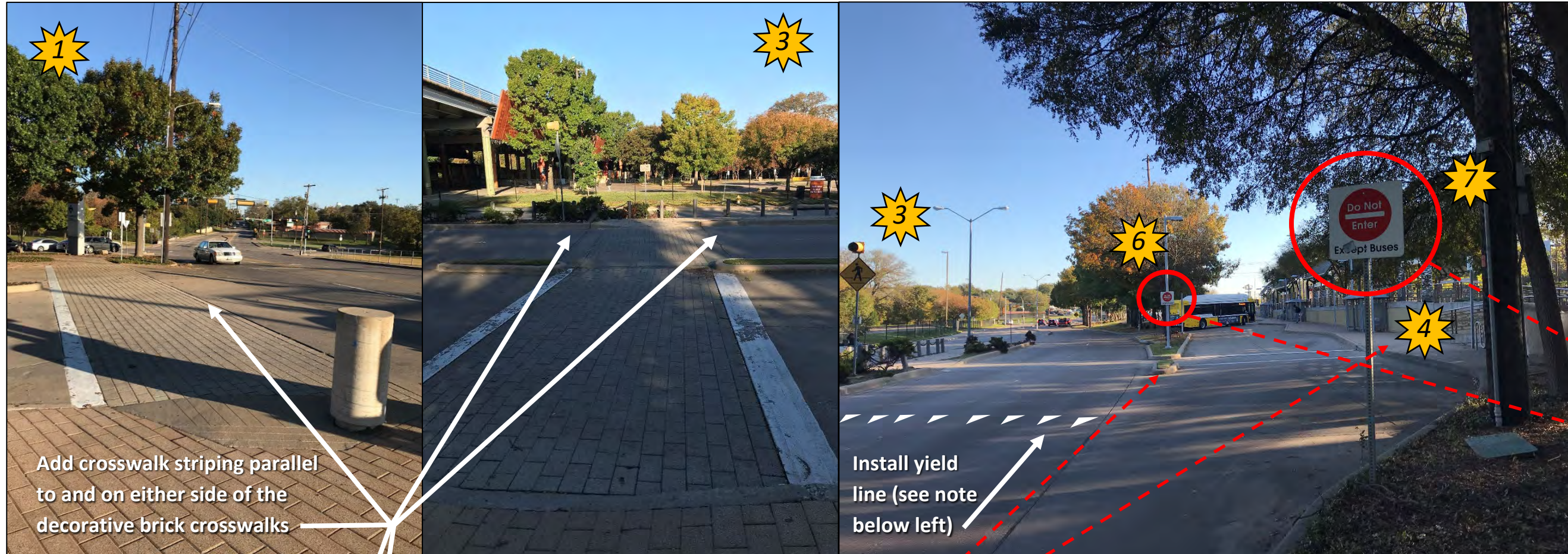


Number	Description
1-3	Add crosswalk striping parallel to and on either side of the decorative brick crosswalks to make them high-visibility crosswalks and to properly define them as legal crosswalks where pedestrians have the right-of-way.
2-3	Add advance yield warning lines and “Yield Here to Pedestrians” signing in advance of crosswalks.
2	Add pedestrian warning signs and pedestrian-actuated Rectangular Rapid Flashing Beacons (RRFB’s) on southbound Clarendon Drive approach. Approach currently has one advance warning sign, but no warning signs at the crosswalk and no beacons.
3	Add pedestrian warning signs and pedestrian-actuated Rectangular Rapid Flashing Beacons (RRFB’s) on northbound Clarendon Drive approach. Approach currently has one warning sign with flashing yellow beacon mounted in the median, but no warning signs on the outside of the roadway and no advance warning sign.
4	Install pedestrian warning sign for crosswalk across bus loop.
5	Replace the existing DO NOT ENTER sign that has been knocked down.
6-7	Update “DO NOT ENTER” signs to meet MUTCD standards.

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FIGURE 5B-1.1 NOT TO SCALE MAY 2020

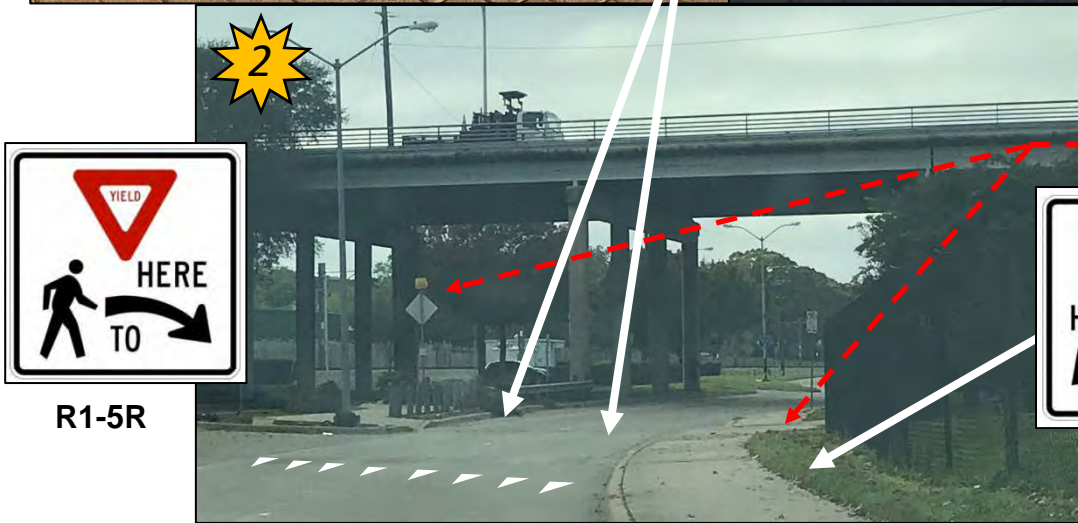
Dallas Zoo Existing Conditions at Improvement Locations



Add crosswalk striping parallel to and on either side of the decorative brick crosswalks

Install yield line (see note below left)

Update "DO NOT ENTER" signs to MUTCD standards with all CAPS lettering



R1-5R



R1-5L



W11-2
W16-7P

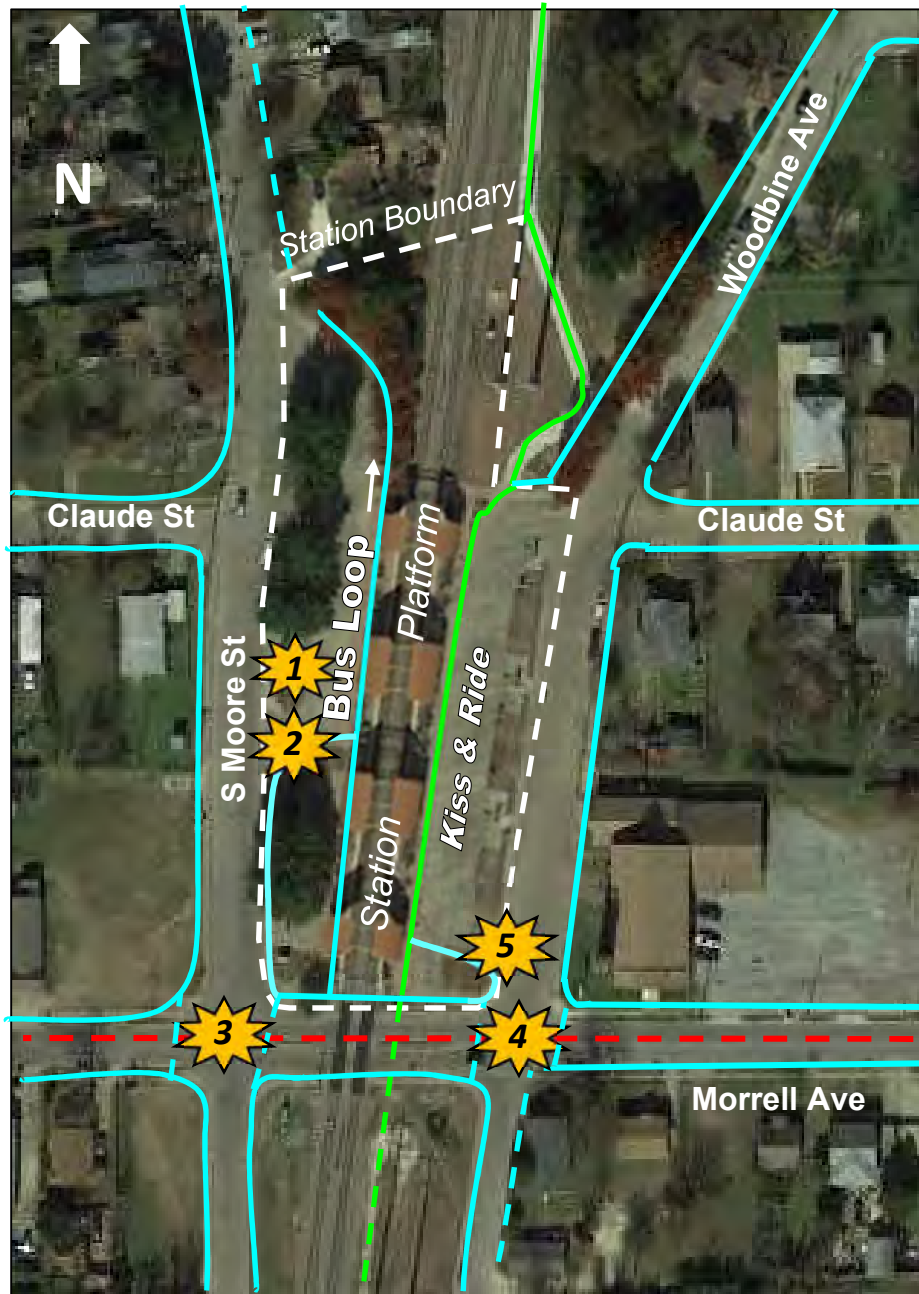
Add advance pedestrian warning signs and pedestrian warning signs with pushbutton-activated Rectangular Rapid Flashing Beacons (RRFB's) for greater pedestrian conspicuity at crosswalk across Clarendon Ave. (Locations 2 & 3).

Install pedestrian warning sign for crosswalk across bus loop (Location 4).



Replace the existing DO NOT ENTER sign

Morrell Station Recommended Access Improvements



Number	Description
1-2	Update "DO NOT ENTER" signs to meet MUTCD standards.
3-4	Install signed and marked crosswalks across Morrell Avenue at the southwest and southeast corners of DART station, across the east and west legs of its intersections with Moore St and Woodbine Ave. Consider constructing median refuge islands in coordination with the City of Dallas to shorten the crossing distance and separate conflicts for crossing pedestrians.
5	Relocate stop sign from sidewalk to adjacent grass.

Legend

- Sidewalk/Crosswalk**
 - Existing
 - - Proposed
- Regional Veloweb**
 - Existing
 - - Proposed
- Local On-Street Bikeway**
 - - Existing



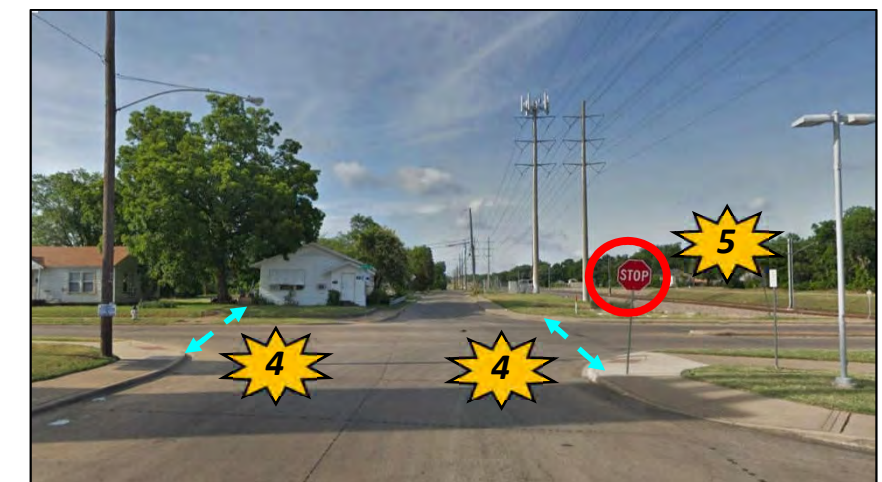
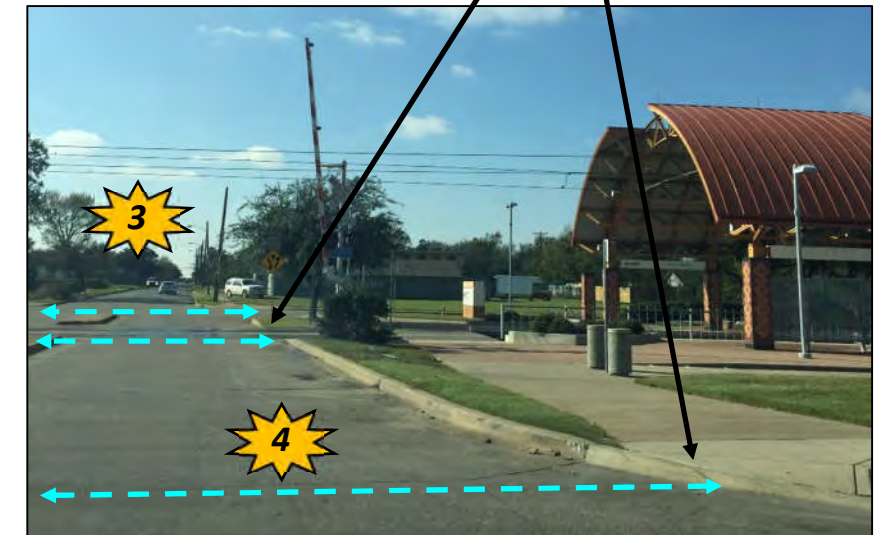
R5-1

Update "DO NOT ENTER" signs to MUTCD standards with all CAPS lettering.



W11-2
W16-7P

Add advance pedestrian warning signs, pedestrian warning signs, crosswalk markings and median refuge islands for greater pedestrian conspicuity crossing Morrell Ave.



Relocate stop sign from sidewalk and add crosswalk across Morrell Avenue.

3.1.12 Tyler Vernon Station (on DART Property)

Figure 6A-1.1 on page 55 identifies nine improvements recommended at Tyler Vernon Station on DART property. Figures 6A-1.2 through 6A-1.4 on pages 56-58 illustrate existing conditions at the nine improvement locations.

The recommended improvements include:

- Trimming trees for a clear view of the signs.
- Updating signs to meet MUTCD standards and adding or refreshing crosswalk striping.
- Building new sidewalk on the north side of Lebanon Ave from the DART station and fixing the steep slope on the pedestrian ramp.
- Relocating existing pedestrian crossing signs on Tyler Street and adding pedestrian warning signs at crosswalks to the station platform.

DART should coordinate with the City of Dallas to add advance yield lines, "Yield Here to Pedestrians" signs and a full traffic signal at the crosswalk crossing S Tyler Street.

Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$131,900. This excludes costs for improvement 6A-TV-ST-09 for the crosswalk across Tyler Street, which was integral to the half-mile area analysis undertaken in Section 3.2 and is therefore quantified together with off-site improvements as a cost assumed to be borne by the City of Dallas. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.13 Hampton Station (on DART Property)

Figure 6B-1.1 on page 59 identifies seven improvements recommended at Hampton Station on DART property. Figures 6B-1.2 and 6B-1.3 on pages 60-61 illustrate existing conditions at the seven improvement locations.

The recommended improvements include:

- Removing decorative brickwork and replacing with standard pavement in areas of the station parking lot where the bricks may be misinterpreted as crosswalks.
- Adding pedestrian ramps and high visibility crosswalks at the intersection of Wright St and Hollywood Avenue immediately north of the station. Fence removal will be needed to provide connections to these crosswalks.
- Updating signs to meet MUTCD standards and adding or refreshing crosswalk striping.

Refer to the figures for additional details.

The total OPCC for the DART improvements is approximately \$62,000. This includes only the portion of improvements 6B-HA-ST-05 and 6B-HA-ST-06 estimated to be within DART right-of-way on the south side of Wright Street. The remaining cost for these improvements is assumed to be the responsibility of the City of Dallas. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.14 Westmoreland Station (on DART Property)

Figure 6C-1.1 on page 62 identifies sixteen improvements recommended at Westmoreland Station on DART property. Figures 6C-1.2 through 6C-1.6 on pages 63-67 illustrate existing conditions at the sixteen improvement locations.

The recommended improvements include:

- Adding or improving ADA ramps for better wheelchair access to the station platform.
- Adding or relocating pedestrian warning signs at crosswalks to the station platform.
- Installing stone pillar bollards between the south side of the station platform and the station parking area to prevent motorized vehicle entry.
- Building new sidewalk connections from the southwest end of the station platform for passengers walking to/from the south along Westmoreland Road and from the east end of the platform south to Glenfield Avenue.
- Updating or relocating signs to meet MUTCD standards and adding or refreshing crosswalk striping.

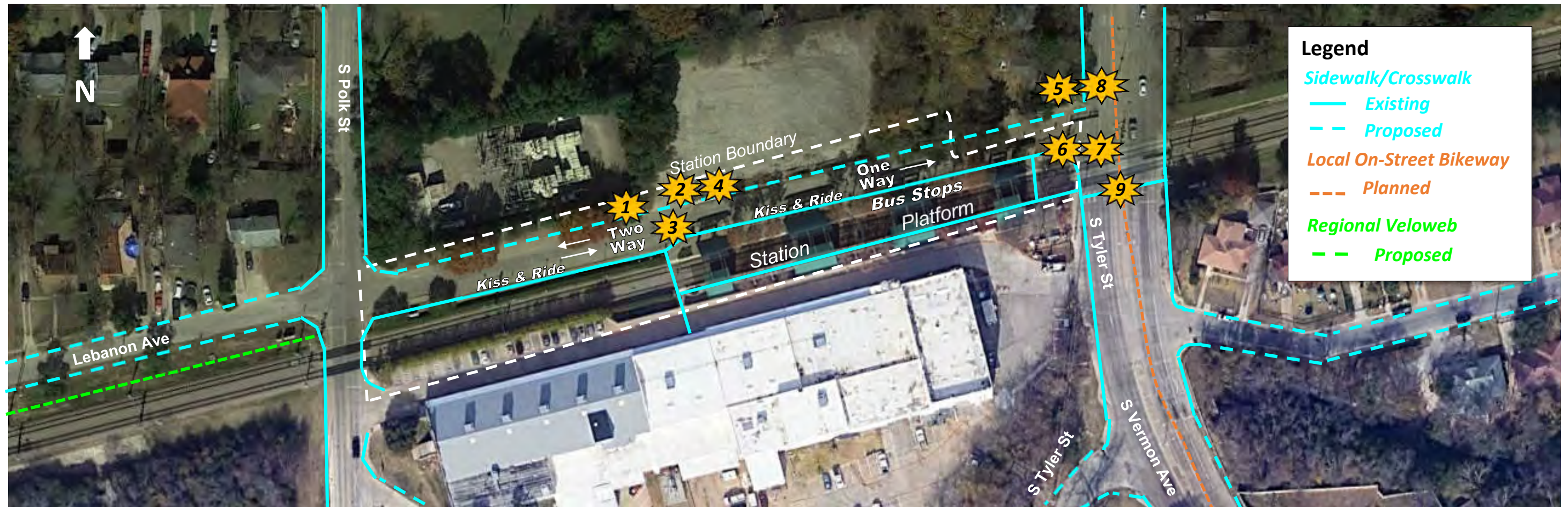
To the west, pedestrians who were observed walking on the entrance driveway indicate demand for a sidewalk connecting through the south side to the station. Some trees and abandoned BNSF tracks need to be removed associated with this construction.

A new sidewalk through the DART Park & Ride lot to properties to the south along Glenfield Dr would connect riders more directly to employment in the area. DART should coordinate with the adjacent property owner and the City of Dallas to build sidewalk and crosswalks across the existing business driveway at this location.

Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$145,000. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.



Tyler Vernon Station Recommended Access Improvements



Number	Description
1	The pedestrian crossing sign is blocked by tree branches. Trim the tree branches for a clear view of the sign.
2	The existing pedestrian ramp slope is too steep. Build sidewalk on the north side of the street, which would require reconstruction of the sloped retaining wall between the street and the fence at the boundary of the vacant lot above. The sidewalk construction would also require removal of or root damage to several trees and would require either regrading of slopes or construction of short retaining walls. It may be acceptable to delay this improvement until development of the property to the north. See also half-mile area improvement 6A-TV-SW-66.
3	Restripe faded pedestrian crosswalk. It may be acceptable to delay this improvement until development of the property to the north.
4	Update "ONE WAY" sign to meet MUTCD standards.

Number	Description
5	The stop sign is blocked by tree branches. Trim the tree branches for a clear view of the sign.
6	The size of the STOP sign needs to be increased to obscure the shape of signs mounted on the other side.
7-8	Update "DO NOT ENTER" signs to meet MUTCD standards.
9	Relocate the existing pedestrian crossing signs on Tyler Street closer to the pedestrian crosswalk for both the northbound and southbound directions. Install new pedestrian advance crossing warning signs and pedestrian crossing signs so there are two of each facing each direction, one in the median and one on the right side of the roadway. Also, add yield lines, "Yield Here to Pedestrians" signs, and a full traffic signal at the crosswalk. A traffic signal should be considered since RRFB flashing yellow lights or pedestrian hybrid beacon wig-wag red lights might be confusing adjacent to the flashing red railroad crossing beacon.

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Tyler Vernon Station Existing Conditions at Improvement Locations



The pedestrian crossing sign is blocked by tree branches. Trim the tree branches for a clear view of the sign.



Replace non-standard signs with W11-2 signs from MUTCD. Signs should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.

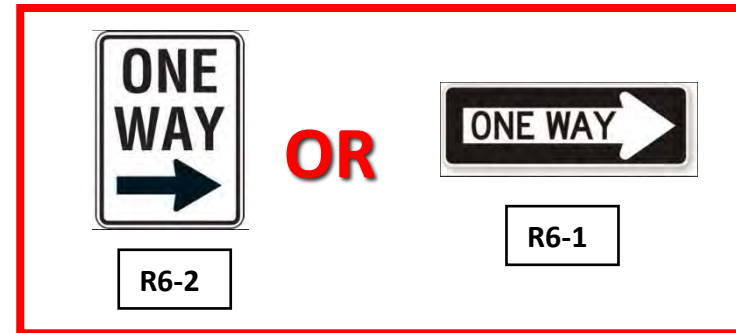


Build sidewalk on the north side of the street and fix the steep slope on the pedestrian ramp.



Restripe faded crosswalk

Tyler Vernon Station Existing Conditions at Improvement Locations



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FIGURE 6A-1.3 NOT TO SCALE AUGUST 2020



Tyler Vernon Station Existing Conditions at Improvement Locations



Move the existing pedestrian crossing sign to the north, closer to the crosswalk. Install a pedestrian crossing sign in the median. Install pedestrian advance crossing warning signs ahead of the existing pedestrian crossing sign.

Add yield lines, "Yield Here to Pedestrians" signs, and a full traffic signal at the crosswalk. A traffic signal should be considered since RRFB flashing yellow lights or pedestrian hybrid beacon wig-wag red lights might be confusing adjacent to the flashing red railroad crossing beacon.

Add "AHEAD" plaque under the existing advance pedestrian warning sign in the median. Install pedestrian advance crossing warning sign on the right side. Relocate the existing pedestrian warning sign in the median to the south, closer to the crosswalk. Install a pedestrian crossing sign at the crosswalk on the right.

DRAFT – Not for Construction

FIGURE 6A-1.4 NOT TO SCALE AUGUST 2020



Hampton Station Recommended Access Improvements



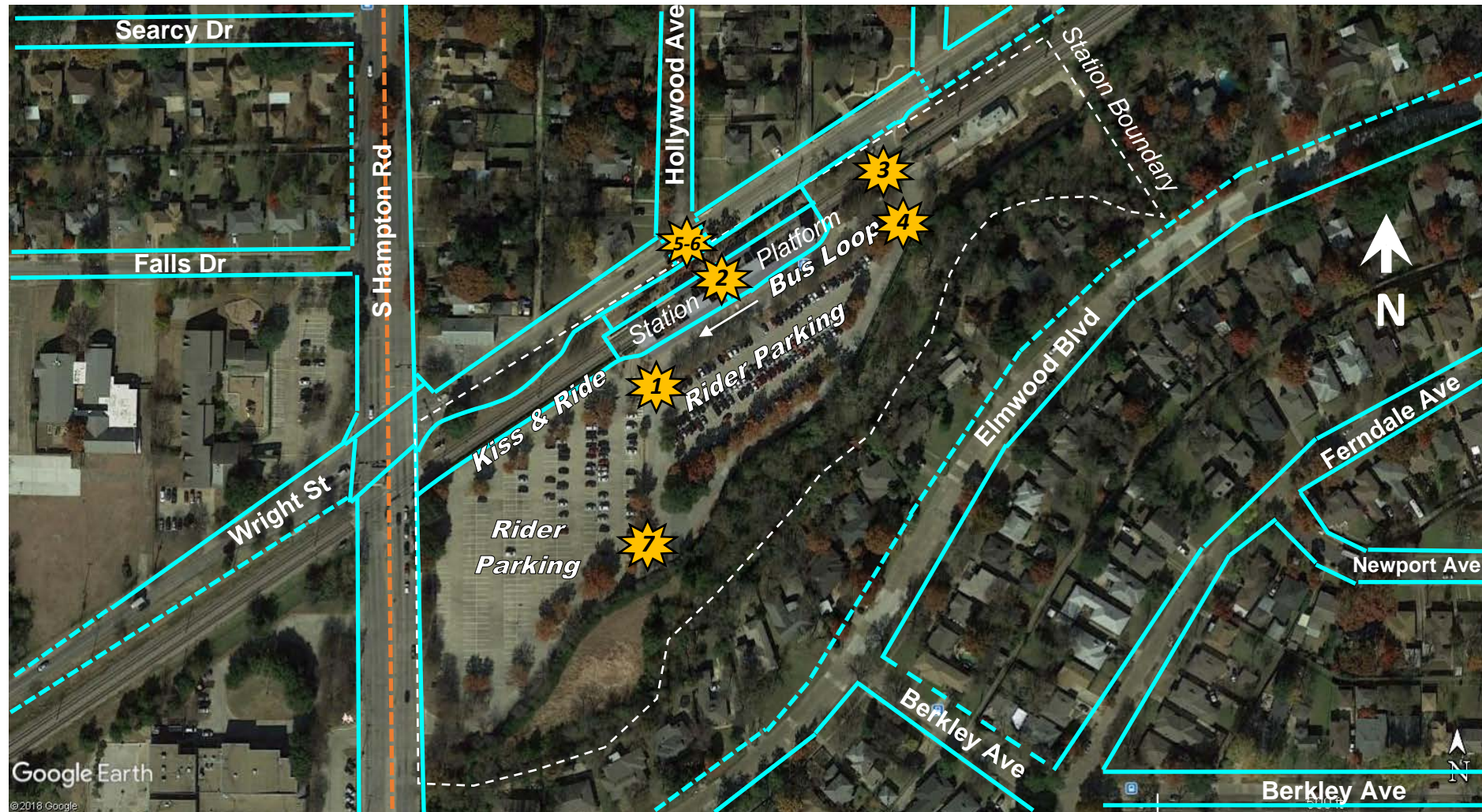
Legend

Sidewalk/Crosswalk

- Existing
- - - Proposed

Local On-Street Bikeway

- - - Proposed



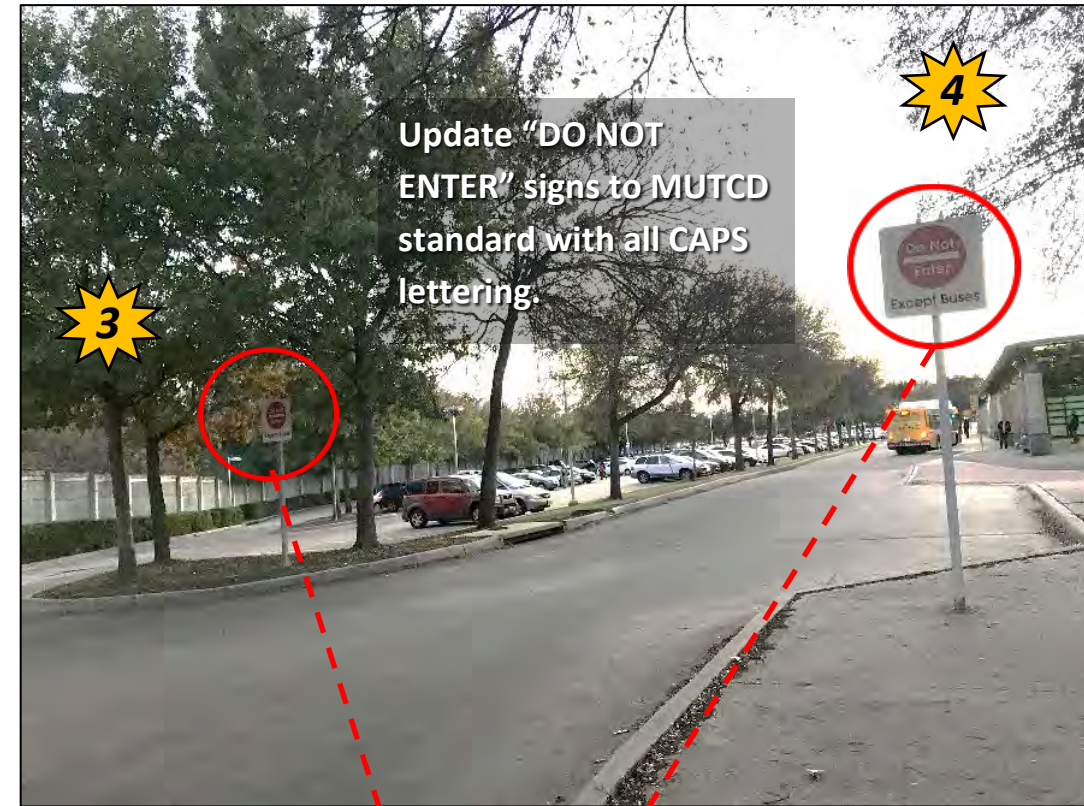
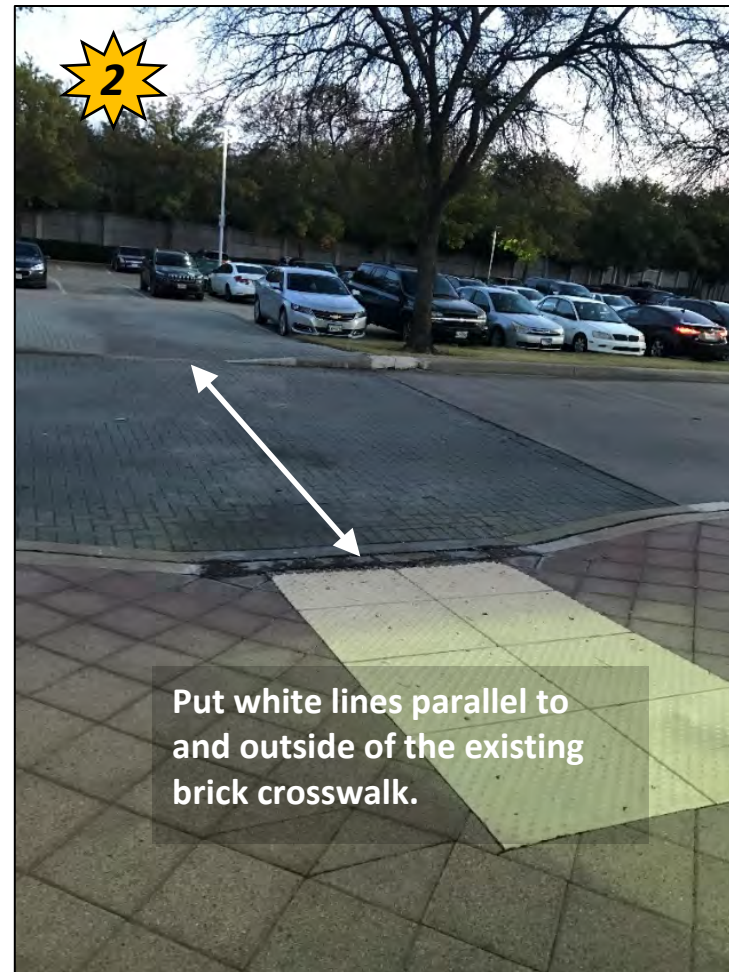
Number	Description
1	Remove decorative brick work and replace with standard pavement wherever it overlaps or intersects a marked crosswalk. Decorative brick work completely outside of marked crosswalks should either be removed and replaced with standard pavement (which is what has been priced for the cost estimate) or removed and replaced with architectural features that do not mimic the brick work also found in other actual crosswalks designed for pedestrian use in and adjacent to the station area. For example, similar brick work is used for crosswalks at Location #2 and at the signalized intersection of Hampton Rd and Wright St. (White lines bordering the signalized crosswalks are being recommended to the City of Dallas). The presence of similar materials in locations where crosswalks are not intended may temporarily confuse distracted pedestrians. A design for crosswalks in the area that is consistent, legal, and distinct from architectural flourishes is recommended for proper emphasis of correct pedestrian crossing locations. Extend the existing crosswalk pavement markings across the area where pavers were removed.
2	Put white lines parallel to and outside of the existing brick crosswalk.
3-4	Update "DO NOT ENTER" signs to meet MUTCD standards.
5-6	Coordinate with City of Dallas to add two signed and marked, high-visibility crosswalks across Wright St at Hollywood Avenue. In conjunction with this improvement, some fence removal will be needed to provide gaps. Provide pedestrian ramps on the south side of Wright St to connect the new crosswalks to the existing sidewalk that is set back from the street by a grass strip.
7	The existing STOP sign needs to be removed and replaced with a STOP sign on an octagonal panel that does not have the rectangular white background.

Not for Construction

FIGURE 6B-1.1 NOT TO SCALE MAY 2020



Hampton Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 6B-1.2 NOT TO SCALE MAY 2020

Hampton Station Existing Conditions at Improvement Locations

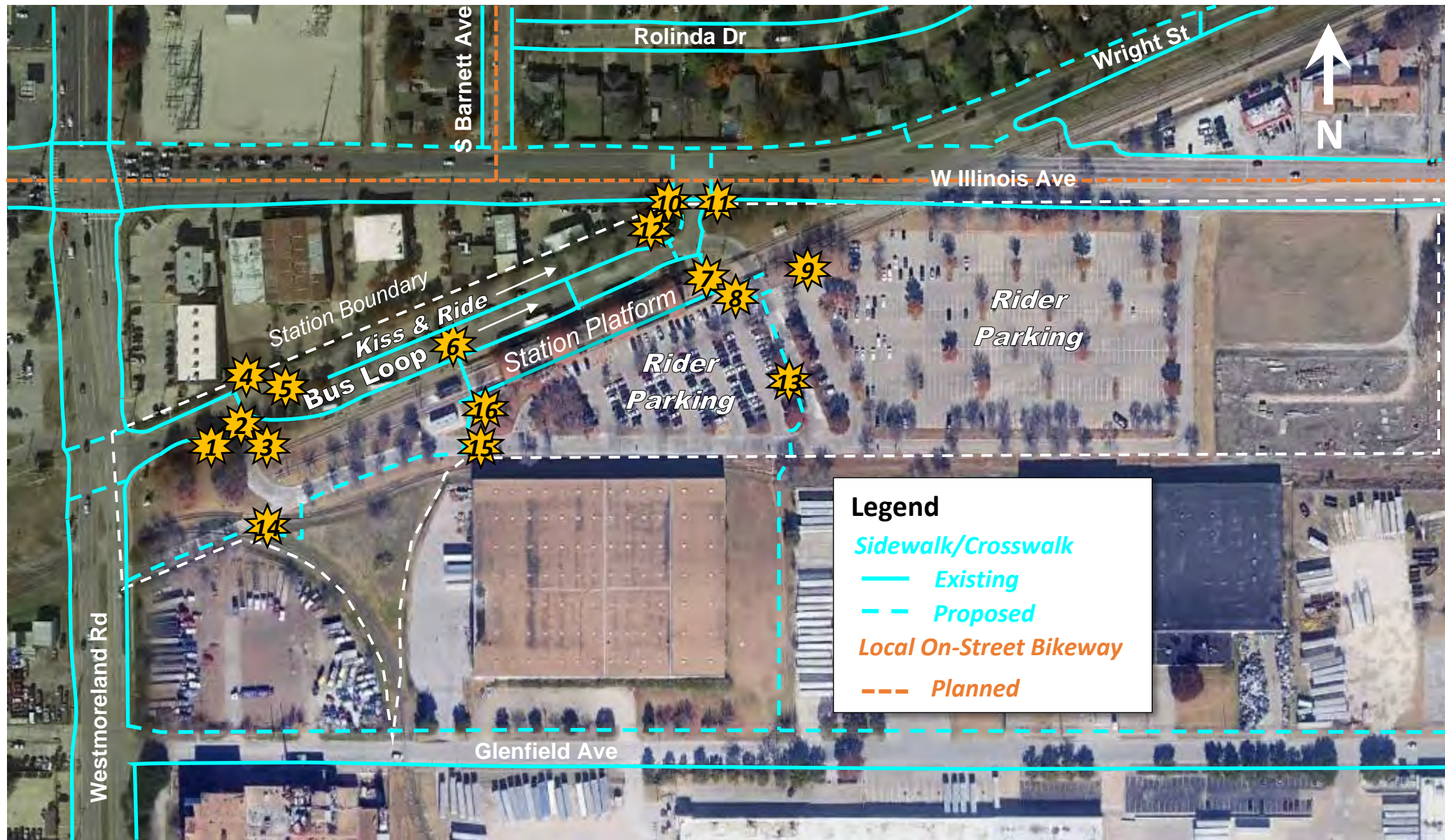


Not for Construction

FIGURE 6B-1.3 NOT TO SCALE MAY 2020



Westmoreland Station Recommended Access Improvements



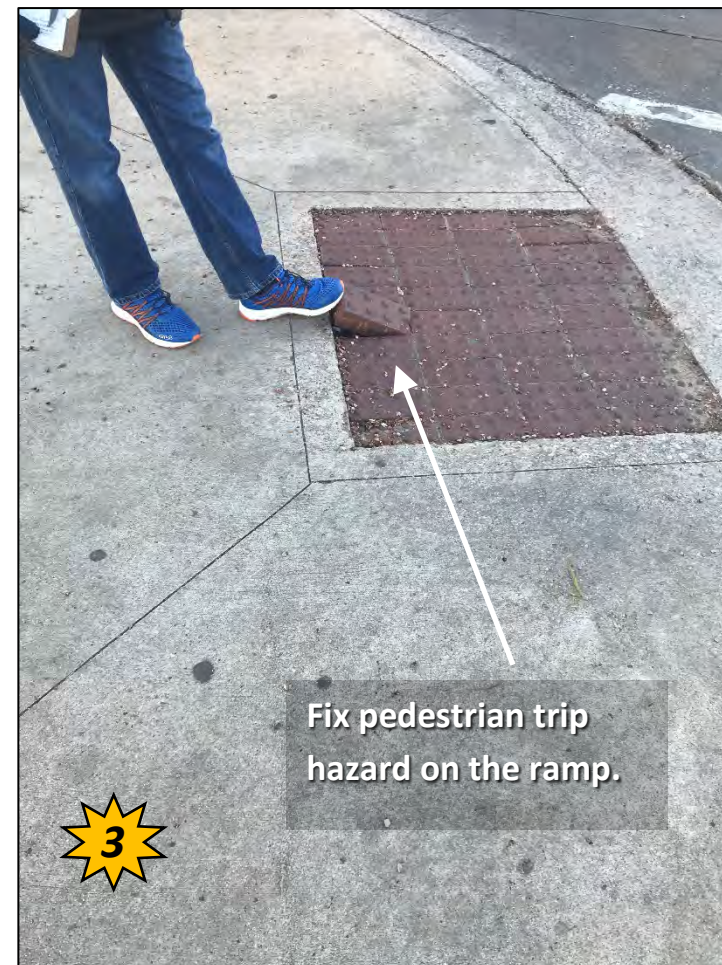
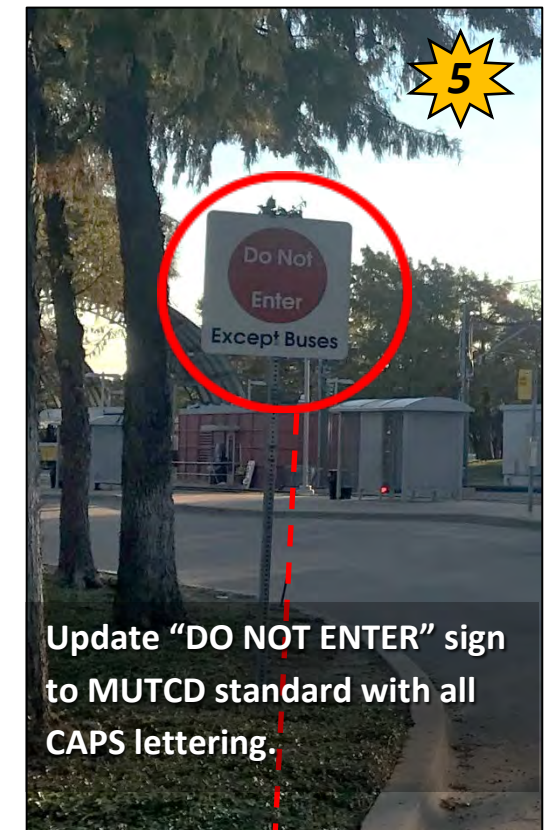
Number	Description
8	Stripe a new crosswalk with new pedestrian ramps crossing from the northwest to northeast corner of the intersection. Relocate two pedestrian warning signs away from the stop-controlled crosswalks where they aren't needed (and where one partially obstructs the sidewalk). Relocate them adjacent to the new crosswalk across the north leg. Restripe the existing crosswalk from the southwest to southeast corner that has been mostly covered with new pavement. Add two new pedestrian ramps and two more pedestrian warning signs adjacent to it.
9	Relocate pedestrian light pole by moving it out of the sidewalk to the north on the grass.
10-11	Relocate the "STOP" and "DO NOT ENTER" signs off of the sidewalk so pedestrian travel will not be impeded.
12	Add new sidewalk. Relocation of the existing streetlighting pole will be necessary. Add new crosswalk connecting to the north side of the station platform.
13	Provide a new sidewalk connection through the DART Park & Ride lot to properties to the south along Glenfield Dr. Narrow the driveway aisle from the current 24 feet to 14 feet, making it one-way southbound, and use the extra 10 feet on the west side to provide a new sidewalk. Add two "DO NOT ENTER" signs at the south end of the driveway aisle. Coordinate with City of Dallas and private property owner to the south regarding connection to potential sidewalk on private property connecting to Glenfield Ave.
14	Pedestrians were observed walking on the entrance driveway here in the absence of sidewalk. New sidewalk is recommended to be built to accommodate pedestrian needs. Root damage to three trees may occur when building sidewalk near Westmoreland Rd. The abandoned, skewed BNSF freight rail spur tracks would need to be removed where they cross the proposed sidewalk alignment. The tracks are clearly no longer in use since they have been removed where they previously crossed Westmoreland Rd just to the west. Sidewalk near the east end of the segment may require removing a portion of the abandoned freight rail spur line to the south to avoid impacts to existing trees planted along the curb line.
15	Add a signed and marked high-visibility crosswalk across the DART station driveway south of the platform.
16	Add sidewalk from the south west end of the station platform for passengers walking to/from the south along Westmoreland Rd. Some regrading may be needed, and root damage could occur to a few trees depending on the sidewalk alignment.

Number	Description
1	Add pedestrian warning signs.
2	Stripe new pedestrian crosswalk.
3	Fix trip hazard where pedestrian ramp has loose bricks.
4	Update westbound pedestrian warning sign to meet MUTCD standards. The existing signs have the wrong panel shape, and do not have supplemental arrow plaques as required to meet MUTCD standards. Add a new pedestrian warning sign facing eastbound traffic.
5	Update "DO NOT ENTER" sign to meet MUTCD standards.
6	Stripe new pedestrian crosswalk and add 2 new STOP signs.
7	Install stone pillar bollards between the south side of the platform and the station parking area, similar to how they're present between the north side of the platform, to prevent motorized vehicles from trying to enter.

Not for Construction

FIGURE 6C-1.1 NOT TO SCALE MAY 2020

Westmoreland Station Existing Conditions at Improvement Locations



* Replace non-standard sign with W11-2 sign from MUTCD. Sign should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.



Not for Construction

FIGURE 6C-1.2 NOT TO SCALE MAY 2020

Westmoreland Station Existing Conditions at Improvement Locations



Relocate pedestrian sign from this location to new crosswalk as described above



* Add a diagonal arrow panel beneath the existing pedestrian sign.

W11-2
W16-7P

Not for Construction

Westmoreland Station Existing Conditions at Improvement Locations



Relocate pedestrian light pole



Relocate the "STOP" and "DO NOT ENTER" signs off of the sidewalk so pedestrian travel will not be impeded.

Not for Construction

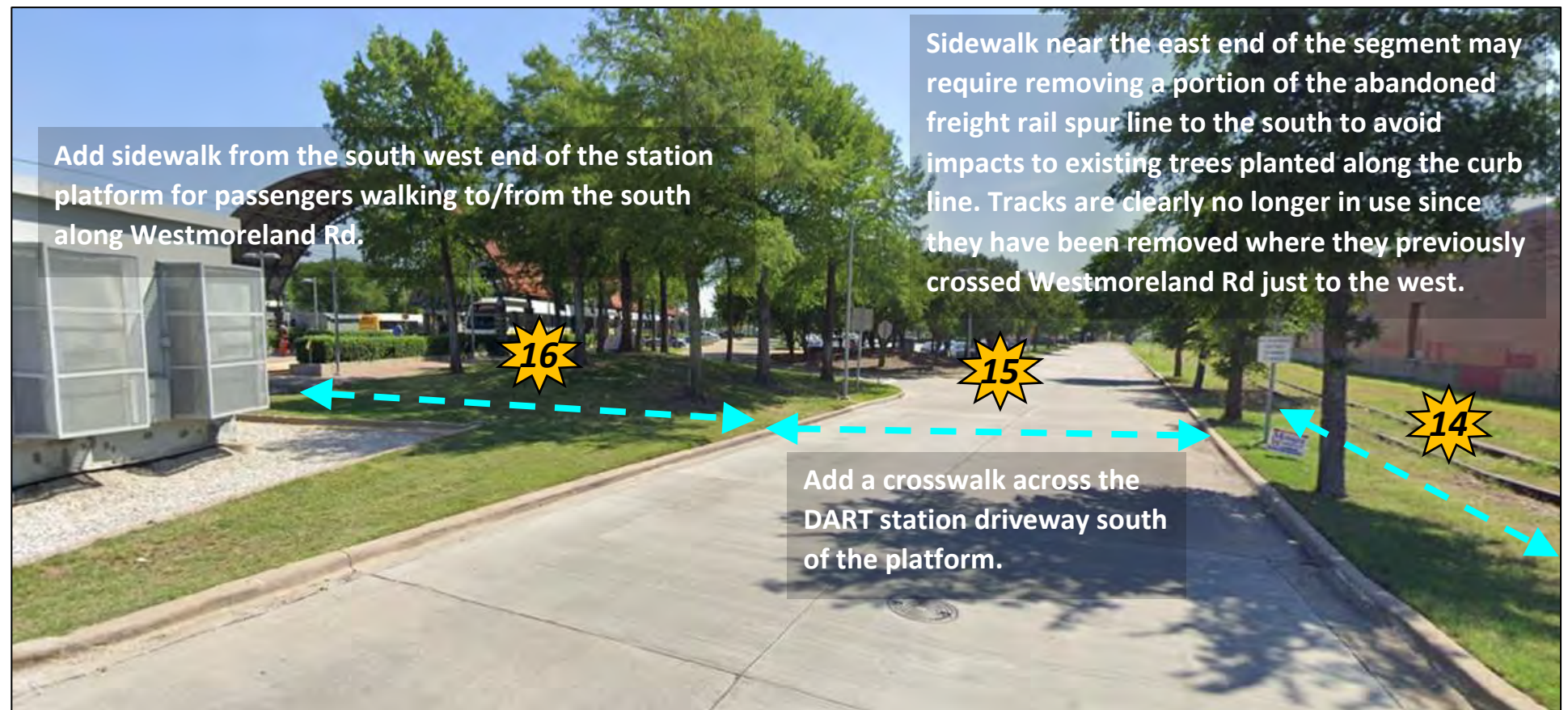
Westmoreland Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 6C-1.5 NOT TO SCALE MAY 2020

Westmoreland Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 6C-1.6 NOT TO SCALE MAY 2020

3.1.15 Illinois Station (on DART Property)

Figure 7A-1.1 on page 69 identifies eleven improvements recommended at Illinois Station on DART property. Figures 7A-1.2 through 7A-1.4 on pages 70-72 illustrate existing conditions at the eleven improvement locations.

The recommended improvements include:

- Constructing new sidewalk segments to connect the station platform more directly to Louisiana Ave, S Corinth Street Rd and a future shared use path on the Regional Veloweb. Tree and fence removal may be needed as part of these connections.
- Adding ADA ramps for better wheelchair access on the station platform.
- Adding pedestrian warning signs at crosswalks to the station platform.
- Updating or relocating signs to meet MUTCD standards.

Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$34,000. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.

3.1.16 Kiest Station (on DART Property)

Figure 7B-1.1 on page 73 identifies one improvement recommended at Kiest Station on DART property. Figure 7B-1.2 on page 74 illustrates existing conditions at the one improvement location.

The pushbutton to activate the crosswalk across southbound Lancaster Road is located in a dangerous location and needs to be removed from the pole and reinstalled on a separate pole. Accessible pedestrian signal (APS) pushbuttons are recommended. The traffic signal controller needs to integrate with the light rail constant warning time equipment. DART will need to coordinate with the City of Dallas for the pedestrian pushbutton installation and traffic signal integration.

Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$59,000. Tables listing the estimated costs for this improvement, as well as line item calculations, are included in Appendix H.

3.1.17 VA Medical Center Station (on DART Property)

Figure 7C-1.1 on page 75 identifies one improvement recommended at VA Medical Center Station on DART property, as well as existing conditions at the improvement location.

Due to the higher need for accessibility adjacent to the VA Medical Center, DART should coordinate with the City of Dallas to replace all existing pedestrian pushbuttons at the intersection of Lancaster Road with Mentor Ave/Ave of Flags with accessible pedestrian signal (APS) pushbuttons, relocated to accessible locations. Refer to the figures for additional details.

The total OPCC for the DART improvements is approximately \$71,000. Tables listing the estimated costs for this improvement, as well as line item calculations, are included in Appendix H.

3.1.18 CityPlace/Uptown Station (on DART Property)

Figure 8A-1.1 on page 76 identifies that no improvements are needed at CityPlace/Uptown Station on DART property. The station itself is underground beneath U.S. 75, and the above ground access points provide good access from both the east and west sides.

3.1.19 Convention Center Station (on DART Property)

Figure 8B-1.1 on page 77 identifies that no improvements are needed at Convention Center Station on DART property. The station is at ground level underneath the Convention Center building structure, with good connections to the adjacent public sidewalks.

3.1.20 Cedars Station (on DART Property)

Figure 8C-1.1 on page 78 identifies six improvements recommended at Cedars Station on DART property. Figures 8C-1.2 and 8C-1.3 on pages 79-80 illustrate existing conditions at the six improvement locations.

The recommended improvements include:

- Striping existing crosswalks that are currently composed of decorative brickwork only.
- Updating or relocating signs to meet MUTCD standards.
- Adding ADA ramps for better wheelchair access on the station platform.

Refer to the figures for additional details. The total OPCC for the DART improvements is approximately \$33,000. Tables listing the estimated costs for individual improvements, as well as line item calculations, are included in Appendix H.



Illinois Station Recommended Access Improvements

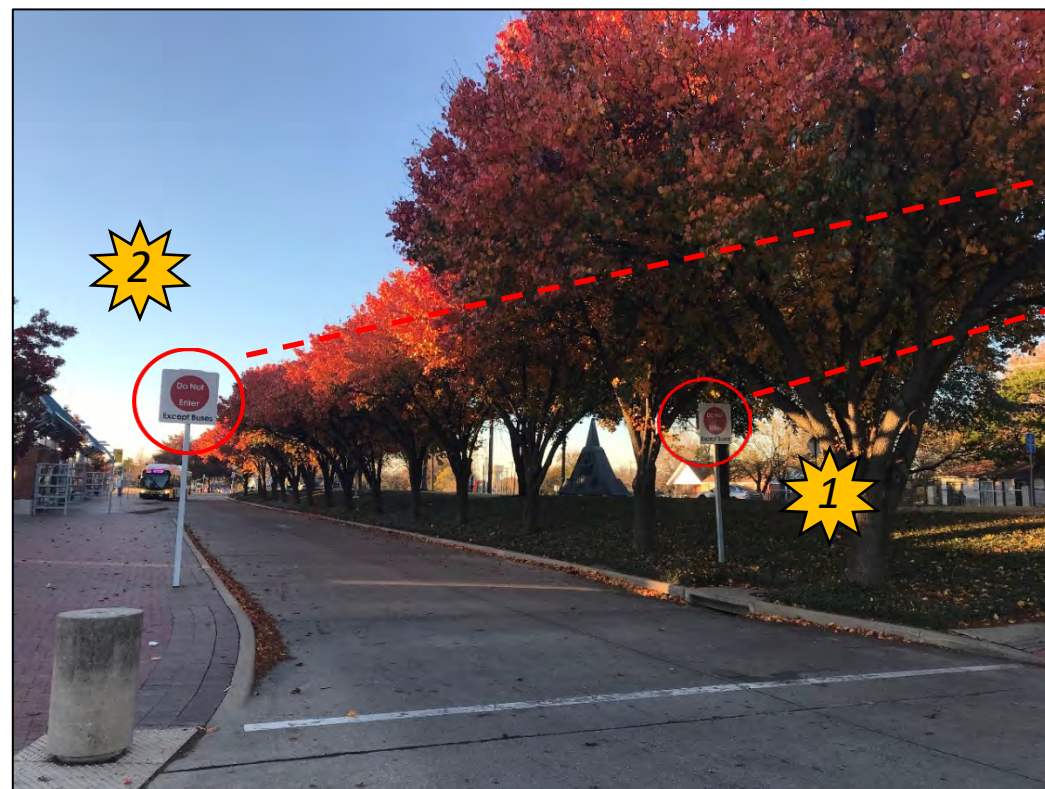
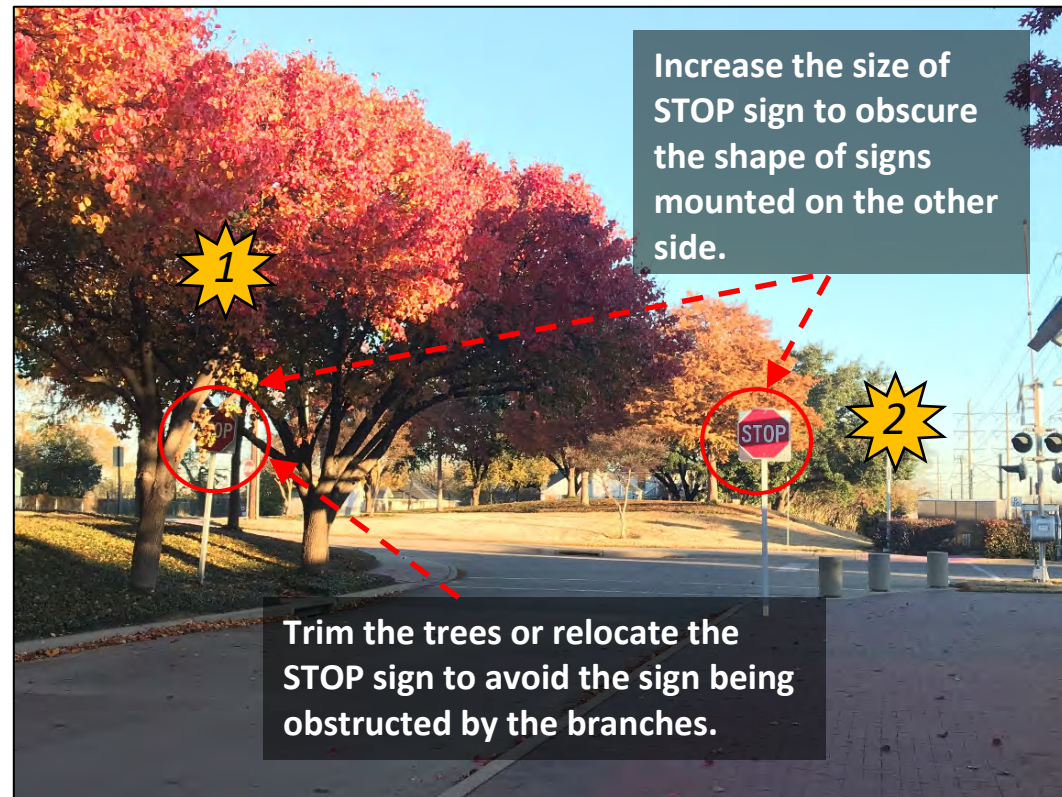


Number	Description
1-2	Update "DO NOT ENTER" signs to meet MUTCD standards. Increase the size of STOP signs to obscure the shape of signs mounted on the other side. For #1, tree trimming or STOP sign relocation is needed to avoid branches obscuring the sign.
3-4	Update "DO NOT ENTER" signs to meet MUTCD standards.
5-6	Update pedestrian warning signs to meet MUTCD standards. The existing signs have the wrong panel shape, and do not have supplemental arrow plaques as required to meet MUTCD standards.
7-8	Update "DO NOT ENTER" signs to meet MUTCD standards.
9	Build new ramp to accommodate pedestrian needs. A short segment of new sidewalk may be needed to connect the new ramp to the existing sidewalk.
10	Build new connection from #4 to sidewalk on north side of Louisiana Ave. The improvement would include a small segment of sidewalk (including ramps), crosswalk striping and removal of a segment of existing fence. One or two trees may experience root damage or need to be removed. Add 2 pedestrian warning signs.
11	Build pedestrian ramps, short sidewalk segment, and provide break in fence at DART property boundary to connect station platform to future Regional Veloweb trail. Remove existing crosswalk inside fenced police station parking lot. Add new crosswalk outside of fenced lot with 2 pedestrian warning signs.

Not for Construction

FIGURE 7A-1.1 NOT TO SCALE MAY 2020

Illinois Station Existing Conditions at Improvement Locations



R5-1

Update "DO NOT ENTER" signs to MUTCD standards with all CAPS lettering and remove "EXCEPT BUSES" legend since wrong-way buses should also be prohibited.



EXCEPT BUSES

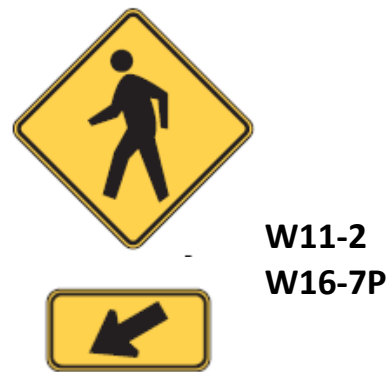
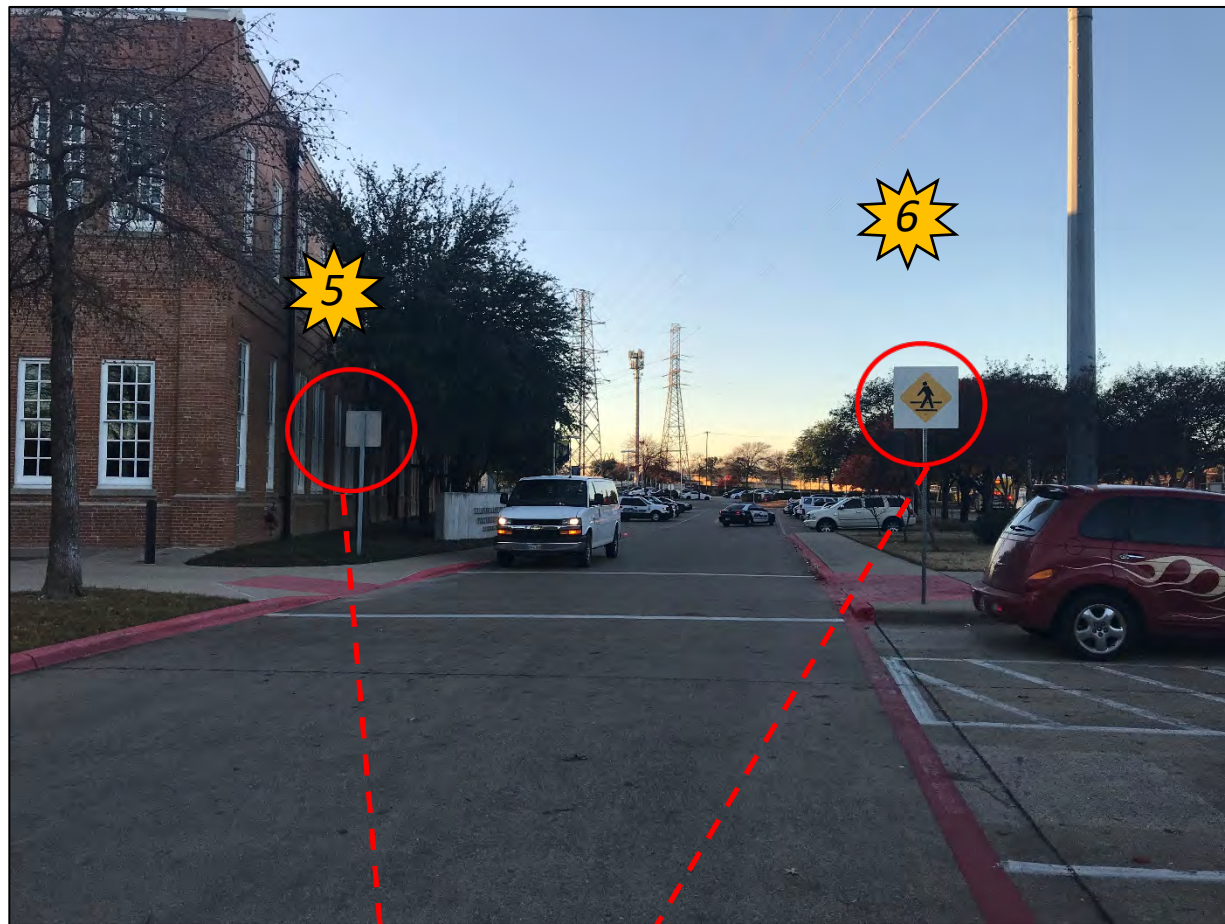
R5-1

Update "DO NOT ENTER" signs to MUTCD standards with "EXCEPT BUSES" legend on separate lower panel.

Not for Construction

FIGURE 7A-1.2 NOT TO SCALE MAY 2020

Illinois Station Existing Conditions at Improvement Locations



W11-2
W16-7P

Replace non-standard signs with W11-2 signs from MUTCD. Signs should be retro-reflective for increased nighttime visibility. The sign panel shall be diamond-shaped instead of having an image of a diamond-shaped sign on a rectangular panel. Uniform signs reinforce driver respect as legitimate traffic control devices.



Add new ramp. A short segment of new sidewalk may be needed to connect the new ramp to the existing sidewalk.

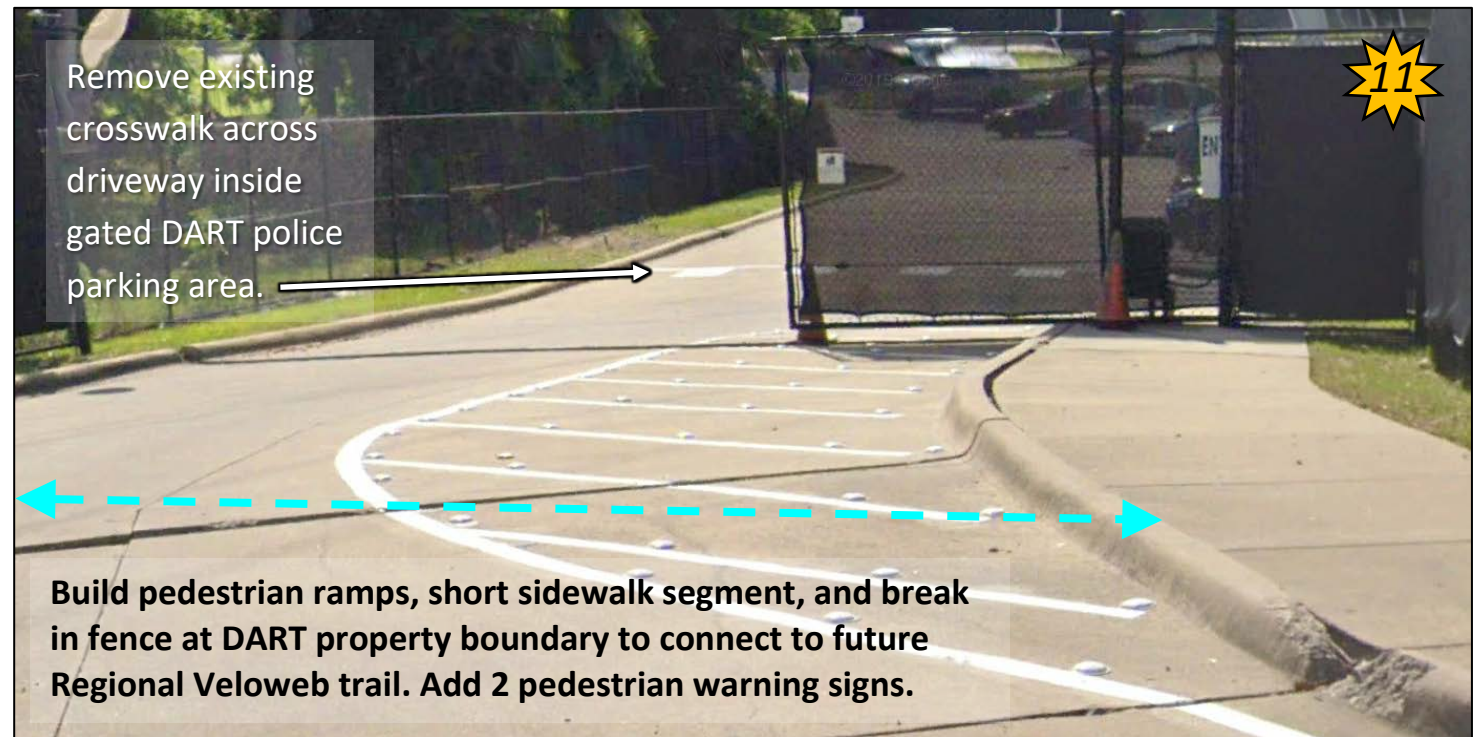


Update "DO NOT ENTER" signs to MUTCD standard with "EXCEPT BUSES" legend on separate lower panel.

Not for Construction

FIGURE 7A-1.3 NOT TO SCALE MAY 2020

Illinois Station Existing Conditions at Improvement Locations



Not for Construction

FIGURE 7A-1.4 NOT TO SCALE MAY 2020

Kiest Station Recommended Access Improvements



Legend

- Sidewalk/Crosswalk
- Existing
- - Proposed
- Local On-Street Bikeway
- Planned

Number	Description
1	<p>The pushbutton to activate the crosswalk across southbound Lancaster Rd from the station platform is located in a dangerously narrow 2.5' wide space between the dynamic envelope of the southbound light rail trains and the southbound travel lanes on Lancaster Rd.</p> <p>Coordinate with City of Dallas to remove the pushbutton from this pole and install a new pushbutton on a separate pole from the pedestrian signal, which should remain in its existing location. The new pushbutton should be located on the station platform, east of the southbound track. Due to proximity to another pushbutton for crossing the northbound lanes, all existing pushbuttons at the crossing of both northbound and southbound lanes will need to be replaced with accessible pedestrian signal (APS) pushbuttons, and voice messages will need to be used to differentiate between the crossings each pushbutton serves.</p> <p>Integrate the traffic signal controller with the light rail constant warning time equipment so that pedestrian calls across the southbound Lancaster Rd lanes are not served when trains are present or approaching.</p>

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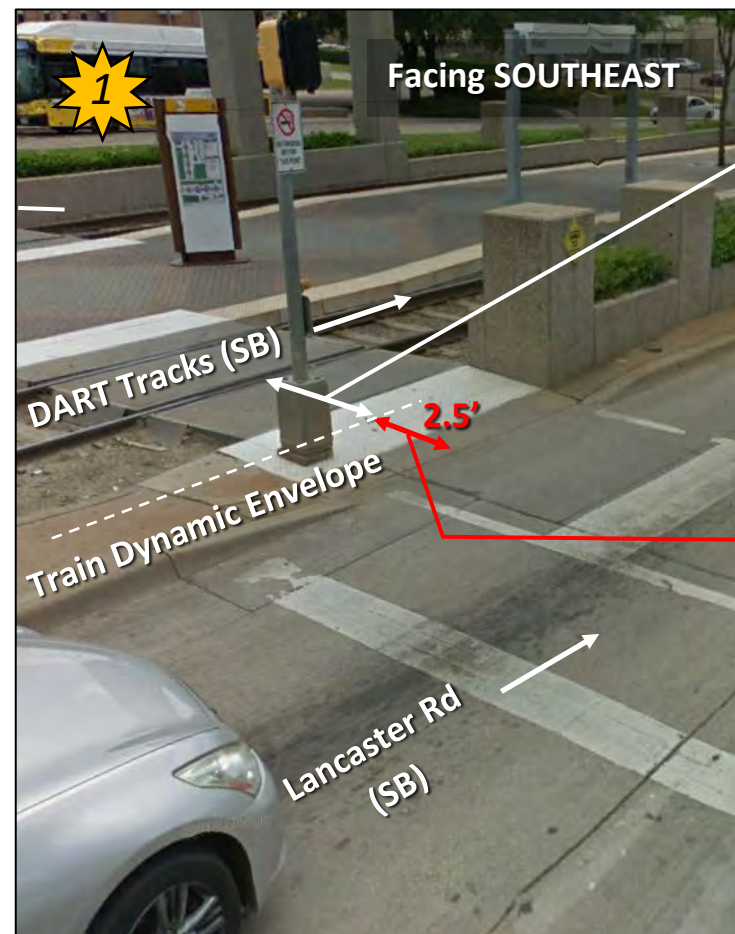
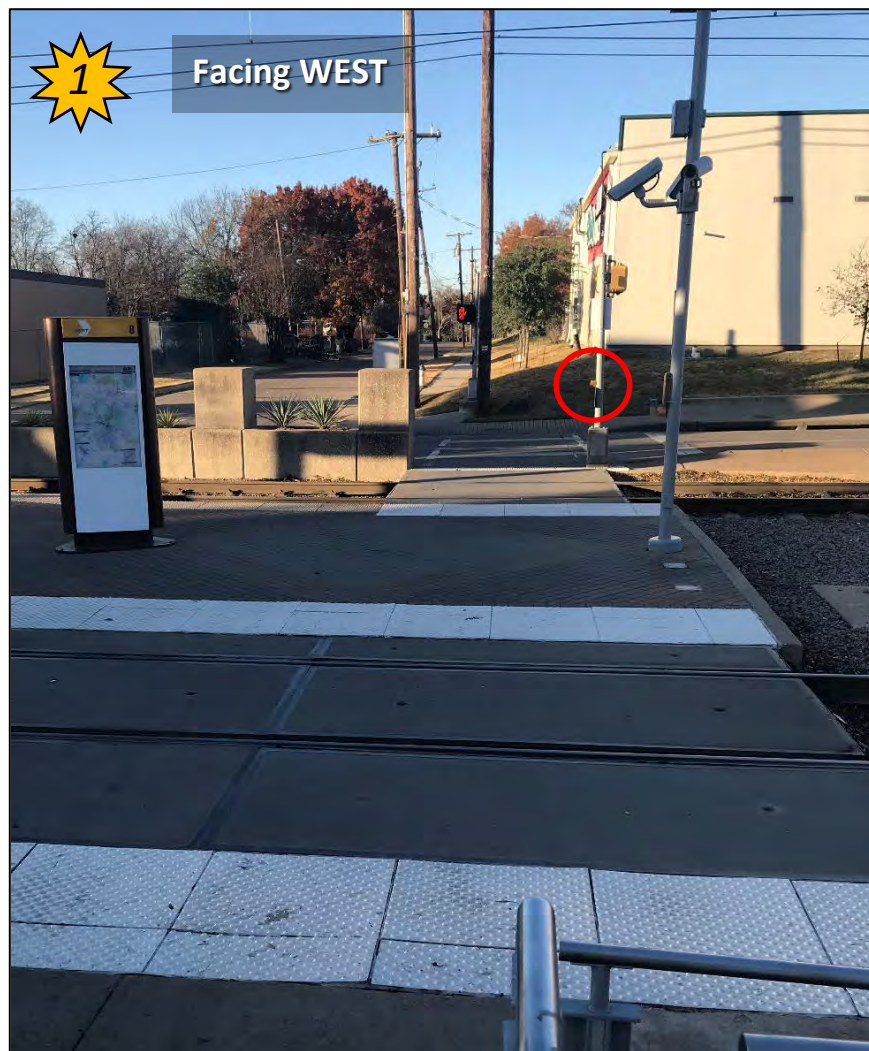
FIGURE 7B-1.1 NOT TO SCALE MAY 2020

Kiest Station Existing Conditions at Improvement Locations



Remove pedestrian pushbutton from existing pedestrian signal pole where there is insufficient space to wait between the light rail tracks and the southbound lanes of Lancaster Rd. Replace all existing pushbuttons for the crossing with new APS pushbuttons, including a second pushbutton on the station platform to call the walk phase for the crosswalk across the southbound lanes of Lancaster Rd.

Integrate the traffic signal controller with the light rail constant warning time equipment so that pedestrian calls across the southbound Lancaster Rd lanes are not served when trains are present or approaching.



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FIGURE 7B-1.2 NOT TO SCALE MAY 2020

VA Medical Center Station Recommended Access Improvements



Legend

Sidewalk/Crosswalk

- Existing
- - - Proposed



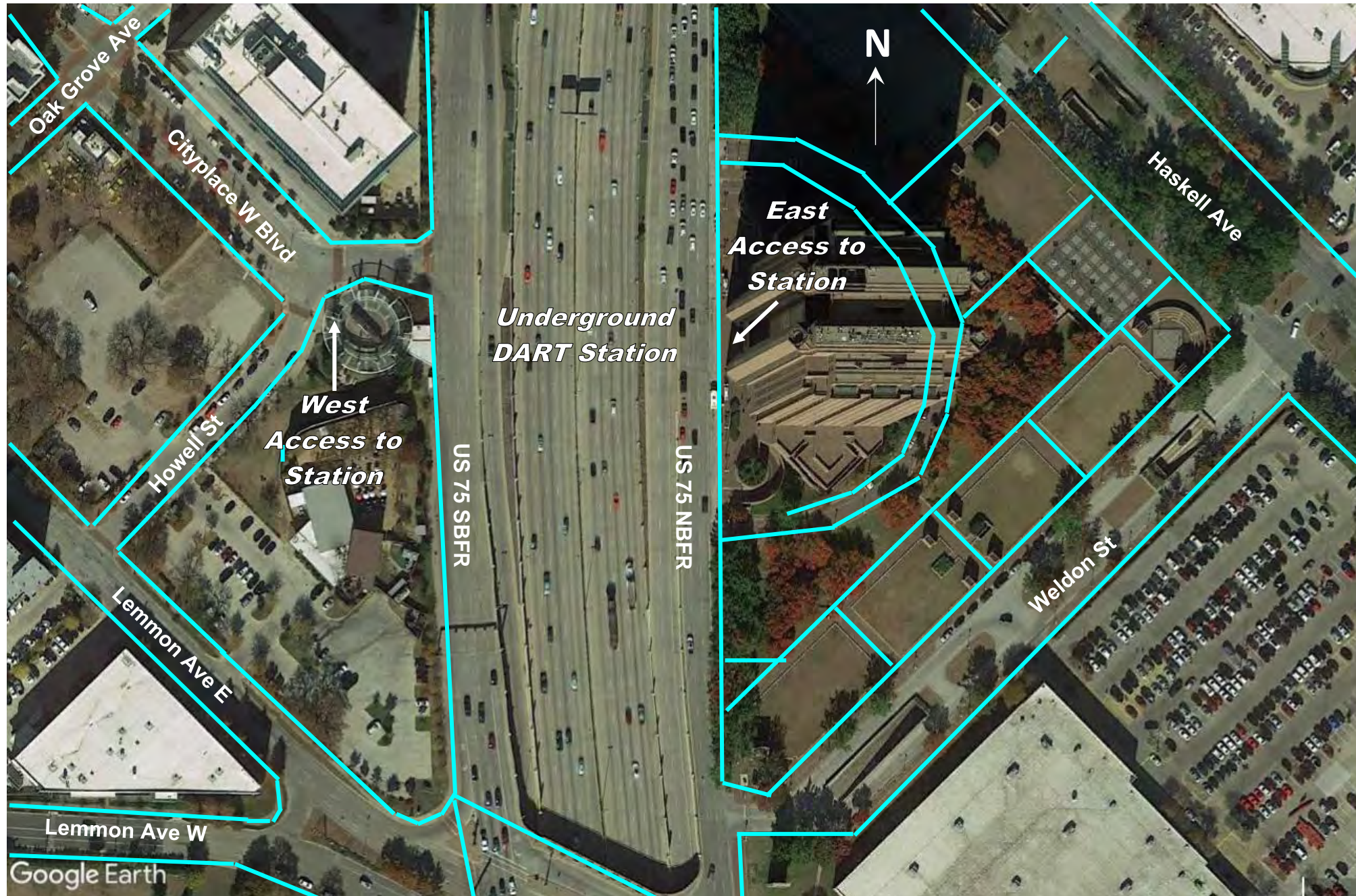
Number	Description
1	Coordinate with City of Dallas to replace all existing pedestrian pushbuttons at the intersection of Lancaster Rd with Mentor Ave/Ave of Flags with accessible pedestrian signal (APS) pushbuttons, relocated to accessible locations. These improvements are important given the higher need for accessibility adjacent to the VA Medical Center.

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FIGURE 7C-1.1 NOT TO SCALE MAY 2020



Cityplace/Uptown Station Existing Conditions

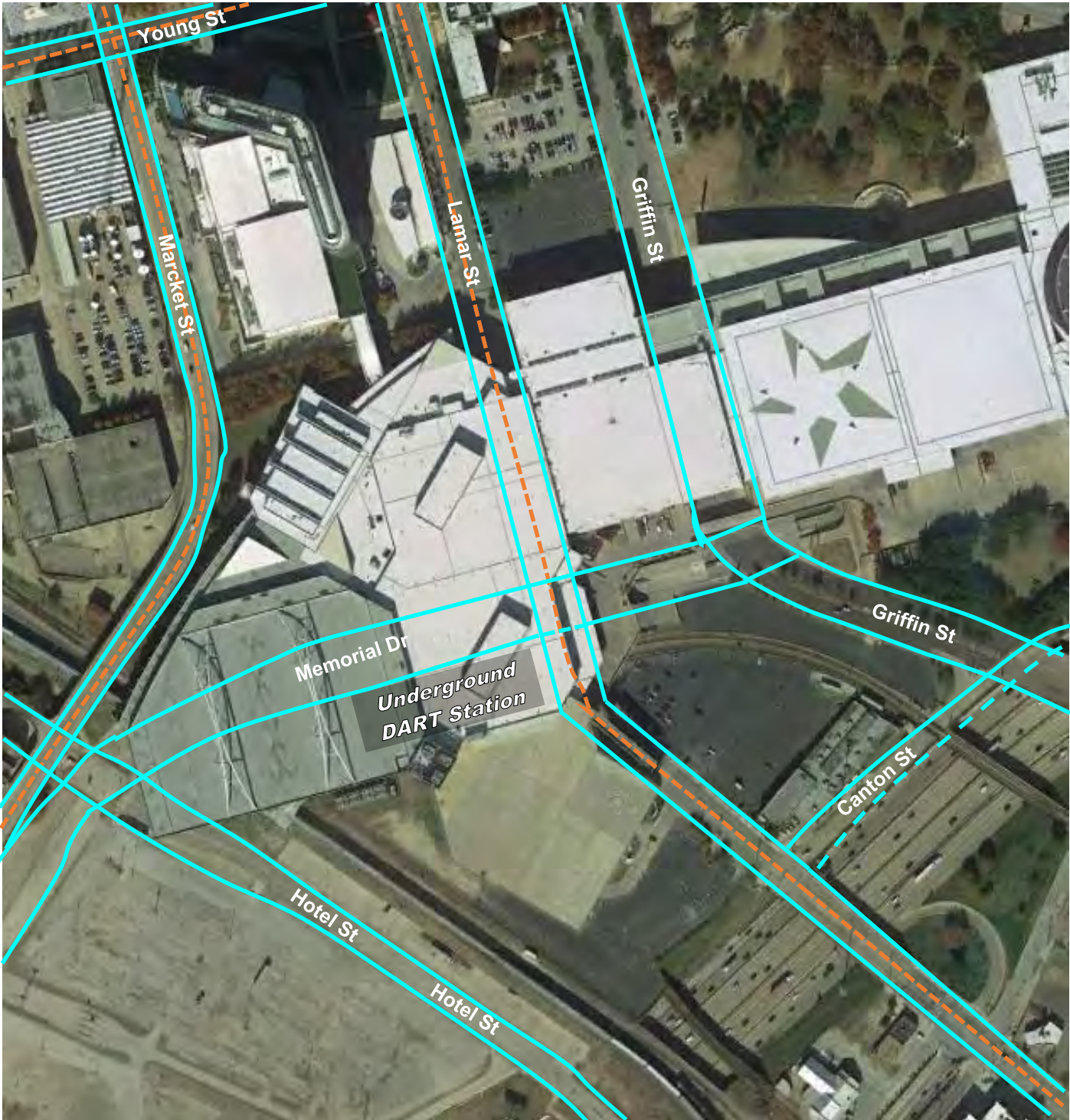


Legend
Sidewalk/Crosswalk
— Existing
- - Proposed

Underground Station

No necessary access improvements identified on DART property

Convention Center Station Existing Conditions



Legend

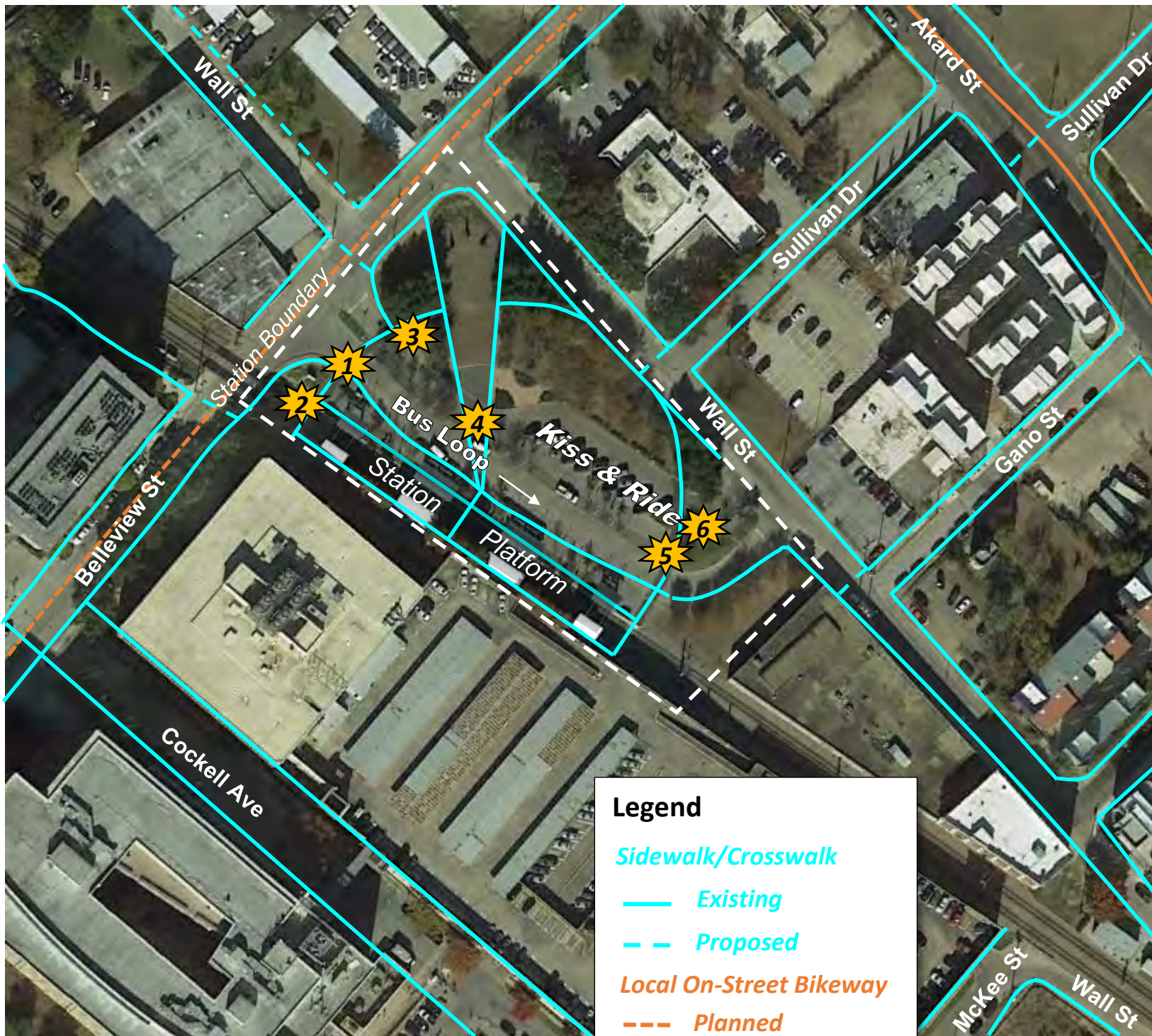
- Sidewalk/Crosswalk
 - Existing
 - Proposed
- Local On-Street Bikeway
 - Planned

Underground Station
No necessary access improvements identified on DART property

DRAFT – Not for Construction

FIGURE 8B-1.1 NOT TO SCALE MAY 2020

Cedars Station Recommended Access Improvements

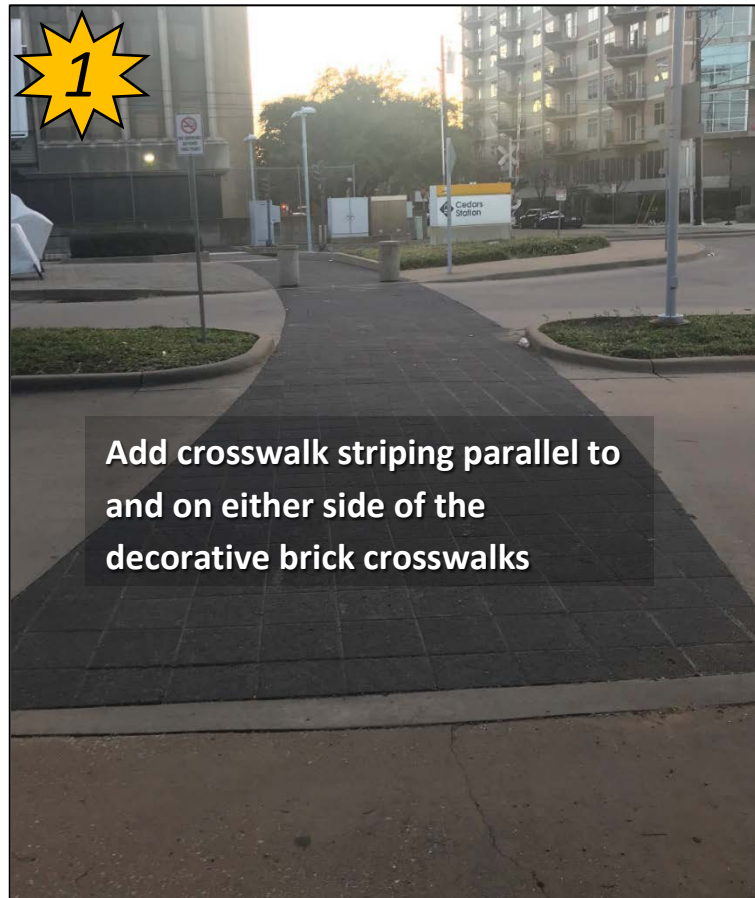


Number	Description
1	Add crosswalk striping parallel to and on either side of the decorative brick crosswalks to make them high-visibility crosswalks and to properly define them as legal crosswalks where pedestrians have the right-of-way.
2-3	Update pedestrian warning signs to meet MUTCD standards. The existing signs do not have supplemental arrow plaques as required to meet MUTCD standards.
4	Install white lines at existing crosswalk. Add pedestrian ramps, median cut-throughs, and pedestrian warning signs.
5	Add crosswalk striping parallel to and on either side of the decorative brick crosswalks to make them high-visibility crosswalks and to properly define them as legal crosswalks where pedestrians have the right-of-way.
6	Add pedestrian warning signs and update the existing sign to meet MUTCD standards. The existing sign does not have a supplemental arrow plaque as required to meet MUTCD standards. Relocate the white "theft or damage" sign elsewhere on a separate post, as this is not a traffic control device.

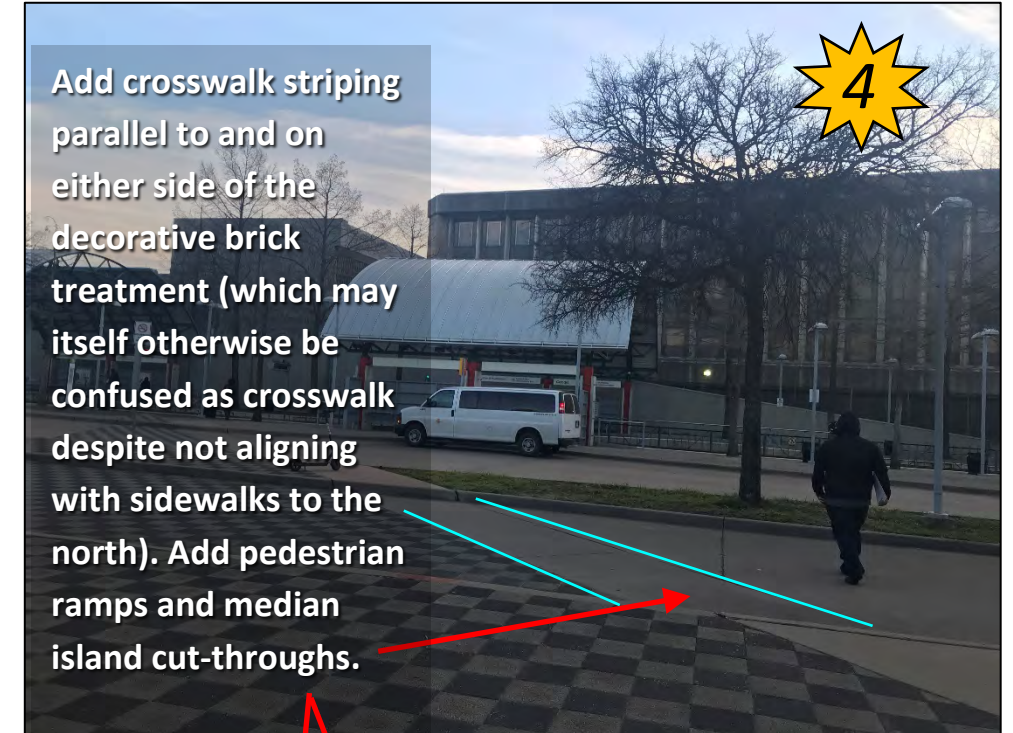
DRAFT – Not for Construction

FIGURE 8C-1.1 NOT TO SCALE MAY 2020

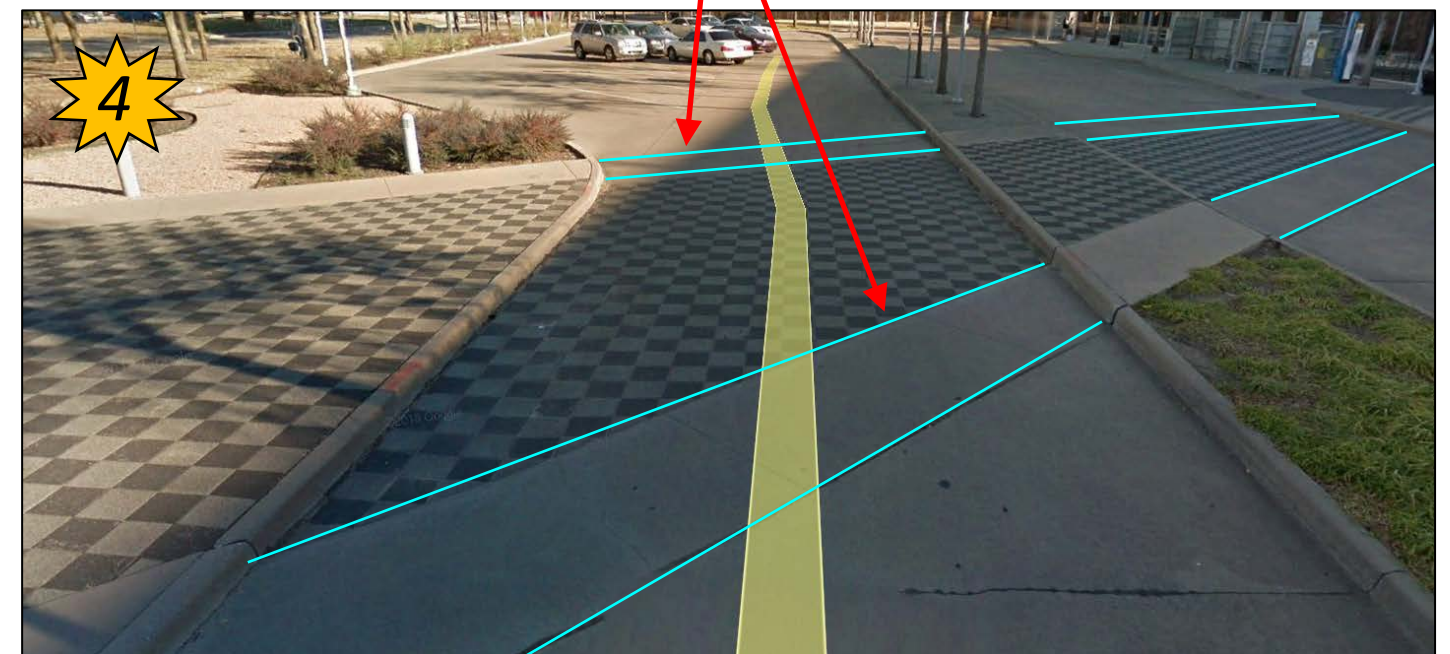
Cedars Station Existing Conditions at Improvement Locations



Add crosswalk striping parallel to and on either side of the decorative brick crosswalks



Add crosswalk striping parallel to and on either side of the decorative brick treatment (which may itself otherwise be confused as crosswalk despite not aligning with sidewalks to the north). Add pedestrian ramps and median island cut-throughs.



Add supplemental arrow plaques as required to meet MUTCD standards

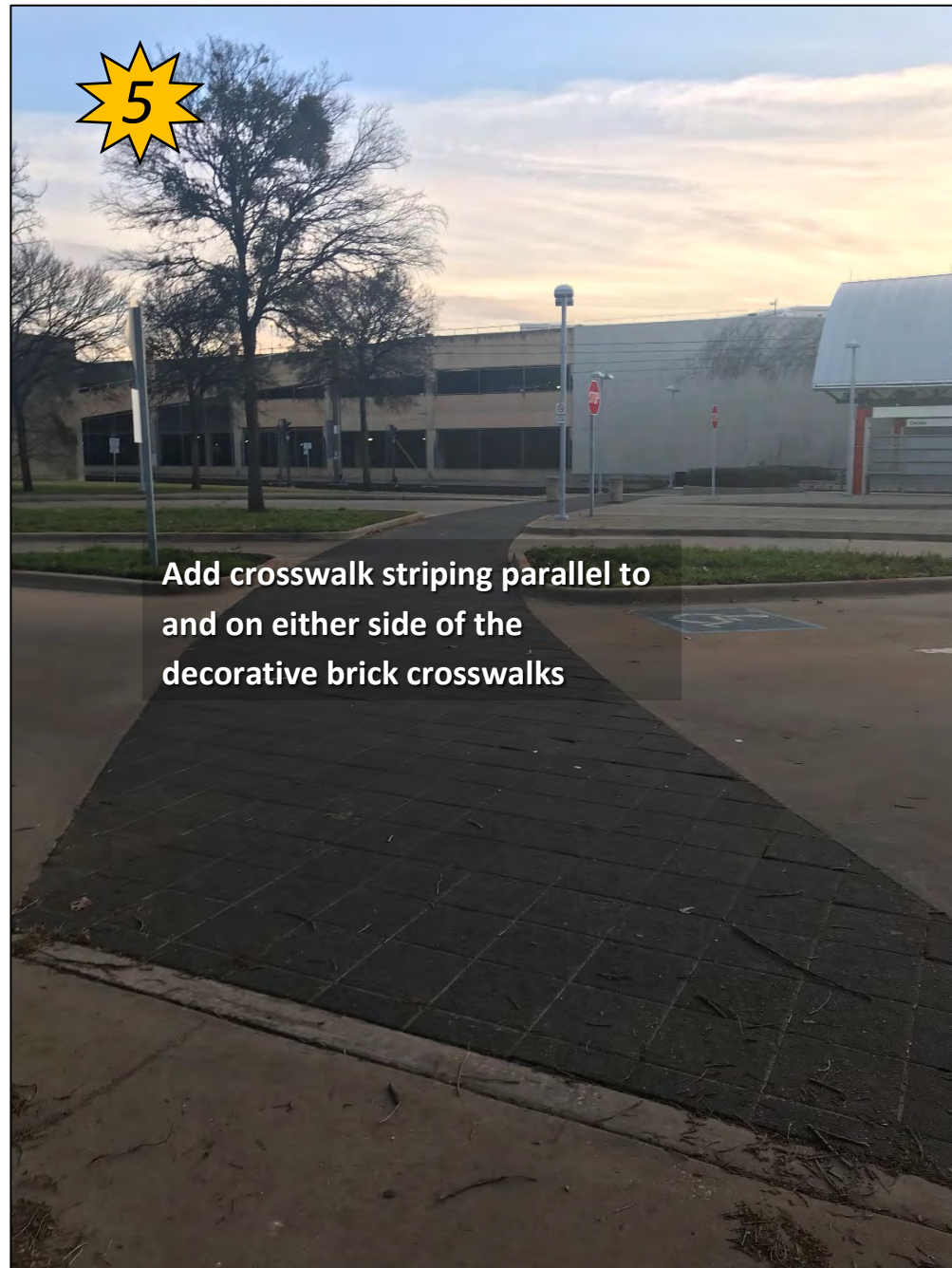
W11-2
W16-7P

DRAFT – Not for Construction

FIGURE 8C-1.2 MAY 2020



Cedars Station Existing Conditions at Improvement Locations



W11-2
W16-7P

Add supplemental arrow plaques as required to meet MUTCD standards. Also, add two more pedestrian signs (one for each end of the crosswalk).

DRAFT – Not for Construction

FIGURE 8C-1.3 MAY 2020



3.2 Half-Mile Area Recommendations

Figures 3C-2 through 8C-2.2 on pages 82-118 identify recommended high-, medium- and low-priority improvements as separate construction packages for each station's half-mile area in Dallas. These figures are collectively referred to as phasing maps. High-priority improvements should be considered for Phase 1 of construction at each station. As funding is available the medium and low-priority improvements should be implemented either with the Phase 1 improvements or as part of future phases.

The legend for each map includes a brief summary of opinions of probable construction cost for each phase and station, which are described in greater detail in Section 3.3.

For additional context, Appendix I contains detailed maps of the recommendations for each station's half-mile area, including existing, planned, and funded regional and local shared use paths, as well as existing, planned and funded on-street bicycle networks.

In each phasing map, existing sidewalks are shown in light blue. The density of individual parcels' population plus employment are shown in grayscale, with darker colors representing higher values.

Proposed sidewalk and crosswalk improvements are shown in multiple colors, according to the assigned priority: red for high-priority (Phase 1), orange for medium-priority (Phase 2), and light pink for low-priority (Phase 3). Gaps to remain are shown in dark pink. For more details about these categories, refer to Appendix F.

Each high- medium- and low-priority improvement, along with all gaps to remain, are indicated by the boxed number labels near each improvement location. The lower right corner of each phasing map includes a legend that describes the abbreviations in the improvement ID codes, which can be used to cross-reference the improvement matrices that appear in Appendix J.

For solid red, orange, or light pink lines, the recommended improvement for a sidewalk gap is either a new or repaired 5-foot wide sidewalk or a new 10-foot shared use path along the length shown. Repairs are noted in the matrix notes for each improvement in Appendix J, and assume full removal of damaged, existing sidewalk prior to replacement.

For crosswalk gaps, the type of improvement recommended is shown with numbered circles located near each crosswalk. The numbers in the circles correspond to the legend of possible pedestrian safety countermeasures appearing at the upper right of the figure. More details about these improvements can be found in Section 2.6, as well as in Appendix C, Appendix D, and Appendix J. Treatments recommended somewhere on the phasing maps have a red box around them in the legend for easier reference.

The "Half Mile Area Improvements Matrices" appearing in Appendix J for each station list for each improvement the owner, improvement type, location, length, notes, priority score, and (in the case of high priority improvements not built by others) the opinion of probable construction cost. Additional information useful for interpreting the tables in Appendix J may be found in Appendix I.

3.2.1 LBJ Central Station (Half-Mile Area)

Figure 3C-2 on page 82 shows the recommended improvements in the half-mile area around the LBJ Central Station. IH- 635 forms a significant barrier to multi-modal travel to and from the north. The station has good sidewalk access to one newer apartment complex directly to its east and to the Texas Instruments campus to the south. However, connectivity to other apartment buildings along Markville Drive to the southeast and to the single family residential neighborhood to the west suffers due to sidewalk gaps.

South of the station, a new Regional Veloweb shared use path is proposed in DART right-of-way along the west side of the tracks (3C-LC-VW-V03 and 3C-LC-VW-V04 in Figure 3C-2). Separately, the City of Dallas intends to construct sidewalk along both sides of the meandering alignment of TI Blvd south of the station.

A new crosswalk with a pedestrian refuge island (or at a minimum, advanced yield signing and striping) and rectangular rapid flashing beacons (RRFB's) is recommended to serve users of the Veloweb shared use path where it will cross TI Blvd southwest of the station. A road diet along this section of TI Blvd would further facilitate construction of the refuge island. Similar enhanced crosswalks with advanced yield lines and signing as well as RRFB's are recommended for crossing Markville Drive immediately south of the station and at Vantage Point Drive.

Sidewalk improvements along the south side of Markville Road will allow more comfortable pedestrian access to and from the station for apartment residents.

Additional details about these and other improvements recommended in Figure 3C-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for LBJ Central Station that can be found in Appendix I and Appendix J.

3.2.2 Forest Lane Station (Half-Mile Area)

Figure 3D-2 on page 83 identifies the recommended improvements in the half-mile area around the Forest Lane Station. Recommended improvements include construction of a new Regional Veloweb shared use path in DART right-of-way along the west side of the tracks (3D-FL-VW-V01 and 3D-FL-VW-V02 in Figure 3D-2). The shared use path will intersect Forest Lane over 600 feet from the nearest signalized crosswalk, so many pedestrians and cyclists are likely to avoid this extra travel distance. Therefore, strong consideration should be given to an enhanced crosswalk with a pedestrian hybrid beacon at this location. Pedestrian hybrid beacons should also be considered for mid-block crossings of the U.S. 75 frontage roads near the western limits of the half-mile area boundary.

Each of the crosswalk locations mentioned should have advance "Yield Here to Pedestrians" signing and yield line striping (Item #3 in the "Possible Pedestrian Safety Countermeasures" legend).

Other improvements include sidewalk along both sides of the Forest Central Drive business park roadway and both sides of TI Blvd. Marked crosswalks and countdown, accessible pedestrian signals should be provided at the intersection of Forest Lane and TI Blvd.

Additional details about these and other improvements recommended in Figure 3D-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Forest Lane Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections LBJ Central Station August 2020



Figure 3C-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

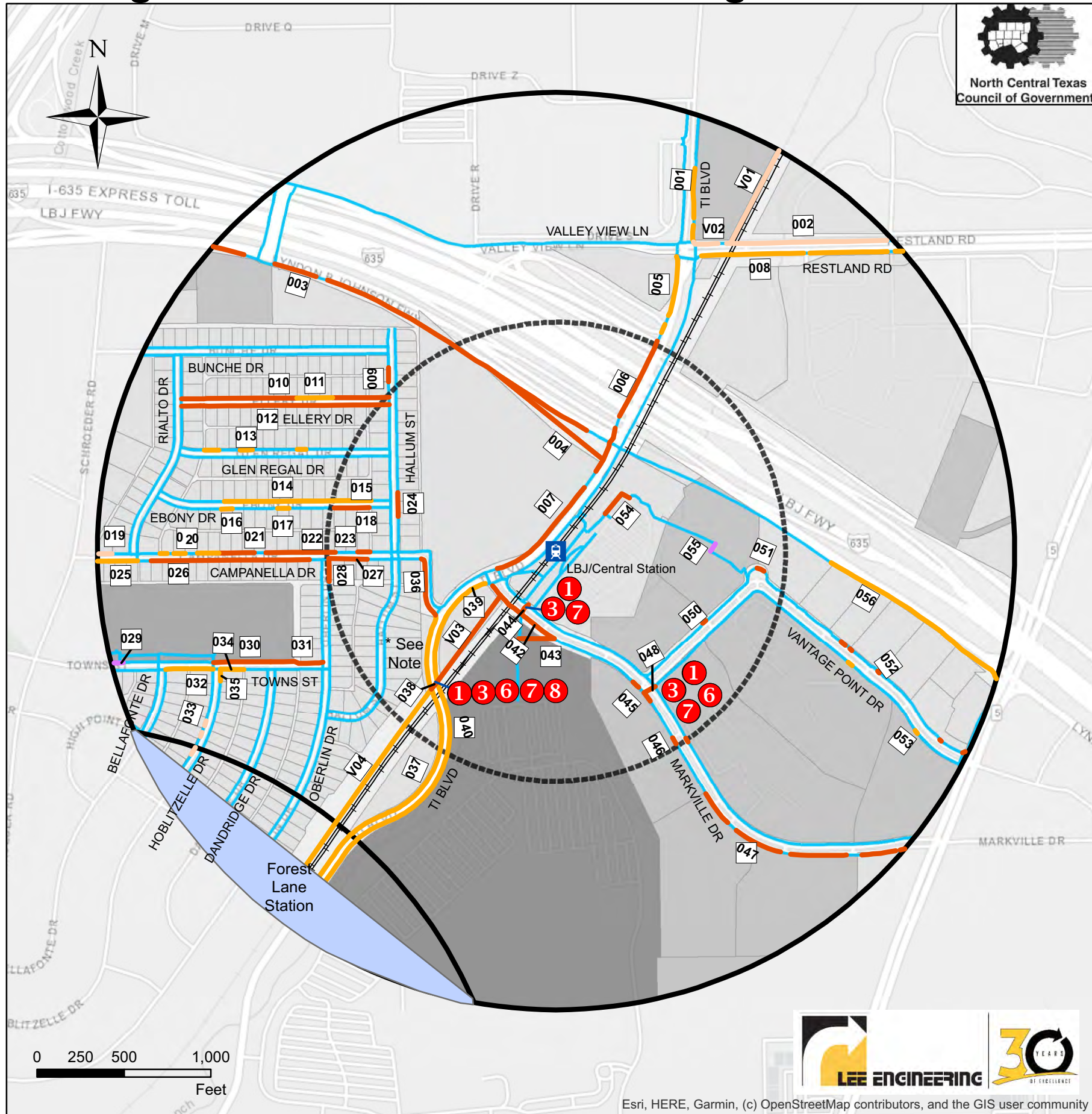
Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,300,000
Medium	\$400,800
Low	\$307,300
Total	\$2,008,100

- Built by Others
- Gap to Remain

Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339

Improvement Code Legend (See Matrix)

3C-LC-SW-01

- 3C ← Station Number
- LC ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

*Crosswalk improvement contingent on construction of Regional Veloweb shared use path.



FTA DART Stations Last Mile Connections Forest Lane Station August 2020



Figure 3D-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,081,800
Medium	\$93,200
Low	\$314,500
Total	\$1,489,500

- Built by Others
- Gap to Remain

Buffers

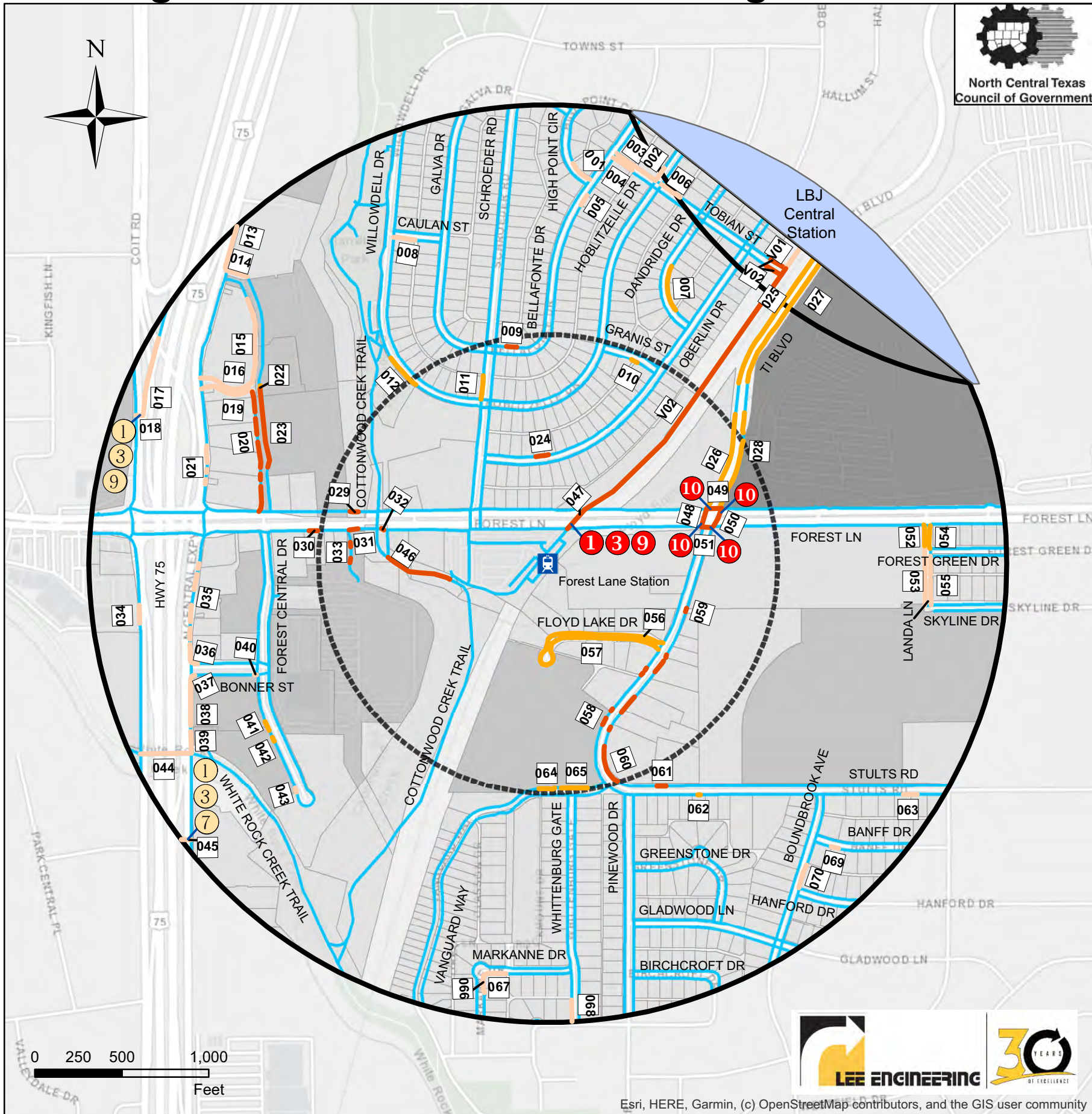
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339

*Note: Need for improvement contingent on construction of local shared use-path.



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

3D-FL-SW-01

- 3D ← Station Number
- FL ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.2.3 Walnut Hill Station (Half-Mile Area)

Figure 4A-2 on page 85 identifies the recommended improvements in the half-mile area around the Walnut Hill Station. The station is relatively well connected to the surrounding area for pedestrians and bicyclists. However, notable sidewalk gaps exist along Walnut Hill Lane east of the station and within the campus of Texas Health Presbyterian Hospital Dallas to the south. The City of Dallas will need to coordinate with Presbyterian Hospital Dallas to help facilitate sidewalk improvements on their property south of the station.

The City of Dallas will need to coordinate with DART on a recommendation to improve access to the station. The recommendation is for DART to provide gaps in the decorative fence posts between the sidewalk and stairways to the elevated station platform for more direct pedestrian and bicyclist access. However, since this may increase the number of pedestrians who would otherwise attempt to cross Walnut Hill Lane at-grade and mid-block under the elevated station platform, it is also recommended to provide anti-climb median fencing in the median. This will discourage pedestrian crossings except via the overhead station platform or at the signalized crosswalk at Glen Lakes Drive 350 feet to the east. The City will need to coordinate with DART for construction of the anti-climb median fencing. See Section 3.1.3 on page 8 and station area improvement 4A-WH-ST-10 on Figures 4A-1.1, 4A-1.3 and 4A-1.4 (pages 15, 17 & 18) for more details.

Other improvements of note include adding marked crosswalks, pedestrian ramps, and countdown accessible pedestrian signals at the intersection of Walnut Hill Lane and Rambler Road at the signalized northern entrance to the hospital, and providing an RRFB for more conspicuous pedestrian crossings of Glen Lakes Drive at its intersection with Walnut Hill Lane, where the right "turn" from Walnut Hill Lane has the geometry of a through movement at potentially higher speeds.

Additional details about these and other improvements recommended in Figure 4A-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Walnut Hill Station that can be found in Appendix I and Appendix J.

3.2.4 Park Lane Station (Half-Mile Area)

Figure 4B-2 on page 86 identifies the recommended improvements in the half-mile area around the Park Lane Station. The station is somewhat connected to the surrounding area for pedestrians and bicyclists. However, notable sidewalk gaps exist along Greenville Avenue and Twin Hills Avenue to the north and south, as well as within and around the private Caruth Plaza and North Park shopping centers and the Glen America business park to the west. Park Lane is itself a barrier to access for some multi-modal trips arriving to and from the south, since the overhead station platform bridges over the roadway but is only accessed from the north side.

Two improvements straddling the station property and adjacent City of private right-of-way will need to be coordinated between the City, DART, and the Caruth Plaza property owner. One of these improvements would be a sidewalk connection from the station property west across the Caruth Plaza parking lot to the shopping center building. The other would be a crosswalk with pedestrian hybrid beacon across Park Lane beneath the overhead rail bridge. See Section 3.1.4 on page 20 for more details.

Other improvements include filling sidewalk gaps along the roadways mentioned above (among others) and adding marked crosswalks and countdown, accessible pedestrian signals at the intersection of Greenville Avenue and Blackwell Street.

Additional details about these and other improvements recommended in Figure 4B-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Park Lane Station that can be found in Appendix I and Appendix J.

3.2.5 Lovers Lane Station (Half-Mile Area)

Figure 4C-2 on page 87 identifies the recommended improvements in the half-mile area around the Lovers Lane Station. Central Expressway (U.S. 75) poses a boundary to multi-modal access to the station from the western low-density neighborhoods in Dallas and University Park. Otherwise, multi-modal access is fairly complete along the existing street grid, with a few sidewalk gaps on Greenville Avenue, Northway Drive and one small gap on Milton Street just east of the station being notable exceptions.

The aforementioned sidewalk gaps would be filled, and marked crosswalks with curb extensions would be built to shorten pedestrian crossing distances across Amesbury Drive at Milton Street and Birchbrook Drive, as well as for crossing Matilda Street at Milton Street.

Additional details about these and other improvements recommended in Figure 4C-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Lovers Lane Station that can be found in Appendix I and Appendix J.

3.2.6 Mockingbird Station (Half-Mile Area)

Figure 4D-2 on page 88 identifies the recommended improvements in the half-mile area around the Mockingbird Station. Multi-modal access is good in this area, particularly along pedestrian desire lines to the highest density residential and business land uses. Some sidewalk gaps exist, though typically only where sidewalk is available on the opposite side of the same street. U.S. 75 forms a boundary that makes trips to and from the Southern Methodist University campus more indirect.

Sidewalk should be constructed to fill gaps on the south side of Mockingbird Lane and the north side of Twin Sixties Drive. Advanced yield lines and "Yield Here to Pedestrians" signing should be added to the existing multi-lane crossings of SMU Blvd at Prentice Street and Worcola Street.

Additional details about these and other improvements recommended in Figure 4D-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Mockingbird Station that can be found in Appendix I and Appendix J.



**FTA DART Stations
Last Mile Connections
Walnut Hill
Station
August 2020**

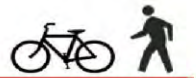


Figure 4A-2 Construction Packages



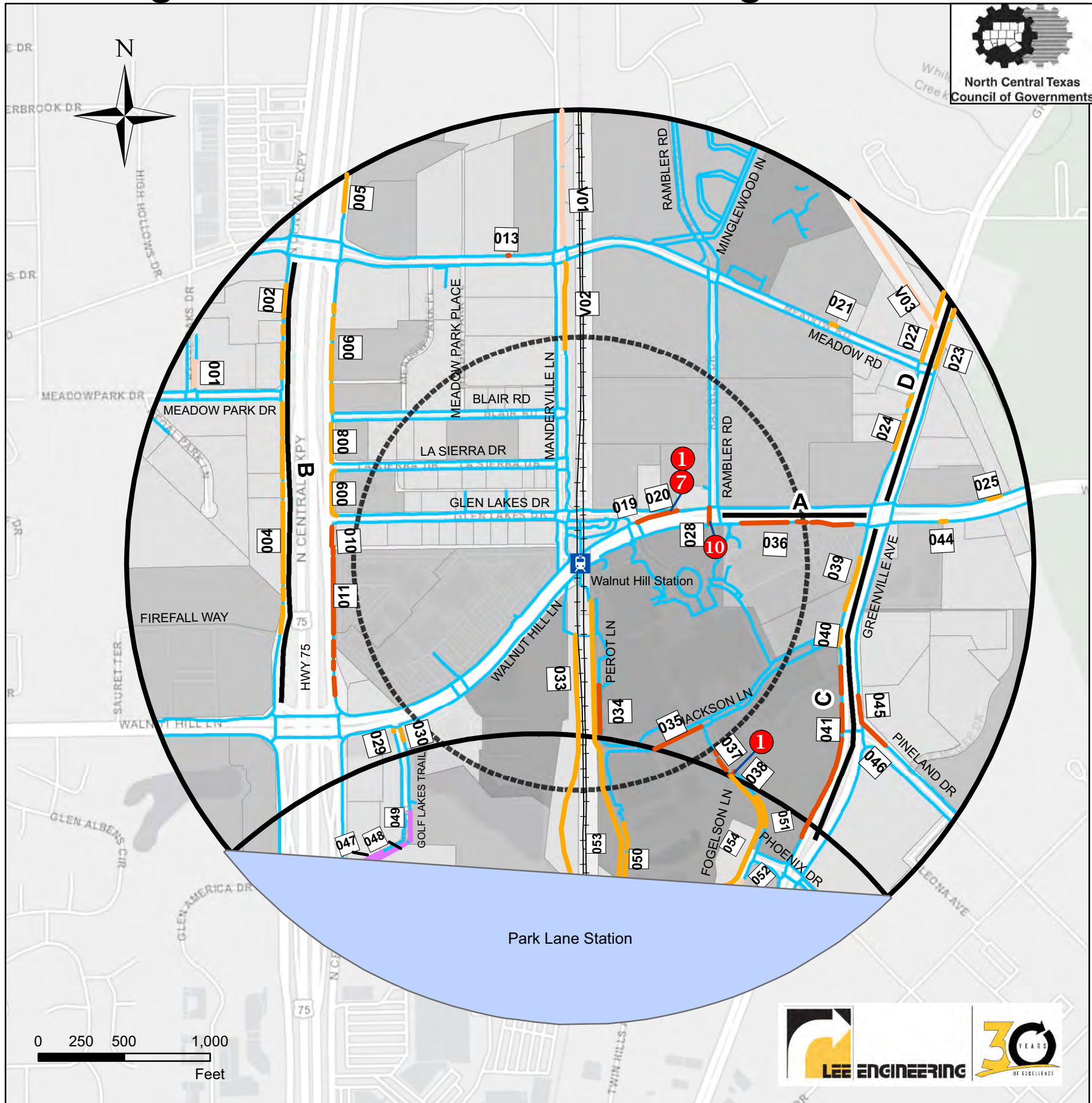
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority**
- High \$1,157,500
- Medium \$1,155,000
- Low \$649,200
- \$2,961,700
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

	0 - 234
	235 - 1049
	1050 - 2586
	2587 - 5364
	5365 - 10339



Possible Pedestrian Safety Countermeasures

- Unsignalized Crosswalk Improvements**
- | Hi | Md | Lo | Oth | Description |
|----|----|----|-----|--------------------------------------|
| 1 | 1 | 1 | 1 | Crosswalk Signs, Markings & Lighting |
| 2 | 2 | 2 | 2 | Raised Crosswalk |
| 3 | 3 | 3 | 3 | Advance "Yield Here" Sign |
| 4 | 4 | 4 | 4 | In-Street Pedestrian Crossing |
| 5 | 5 | 5 | 5 | Curb Extension |
| 6 | 6 | 6 | 6 | Pedestrian Refuge Island |
| 7 | 7 | 7 | 7 | Rectangular Rapid Flashing Beacon |
| 8 | 8 | 8 | 8 | Road Diet |
| 9 | 9 | 9 | 9 | Pedestrian Hybrid Beacon |
- Signalized Crosswalk Improvements**
- | | | | | |
|----|----|----|----|--|
| 10 | 10 | 10 | 10 | Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals |
| 11 | 11 | 11 | 11 | Traffic Signal |

Primary Routes

Route	Street
A	Walnut Hill Ln
B	Cntrl Expy Access
C	Greenville Ave
D	Greenville Ave

Improvement Code Legend (See Matrix)

4A-WH-SW-01

4A ← Station Number
WH ← Station Abbreviation
SW ← Sidewalk (or CW for Crosswalk)
01 ← Improvement Number (Matches **1** on Map)



FTA DART Stations Last Mile Connections Park Lane Station August 2020



Figure 4B-2 Construction Packages

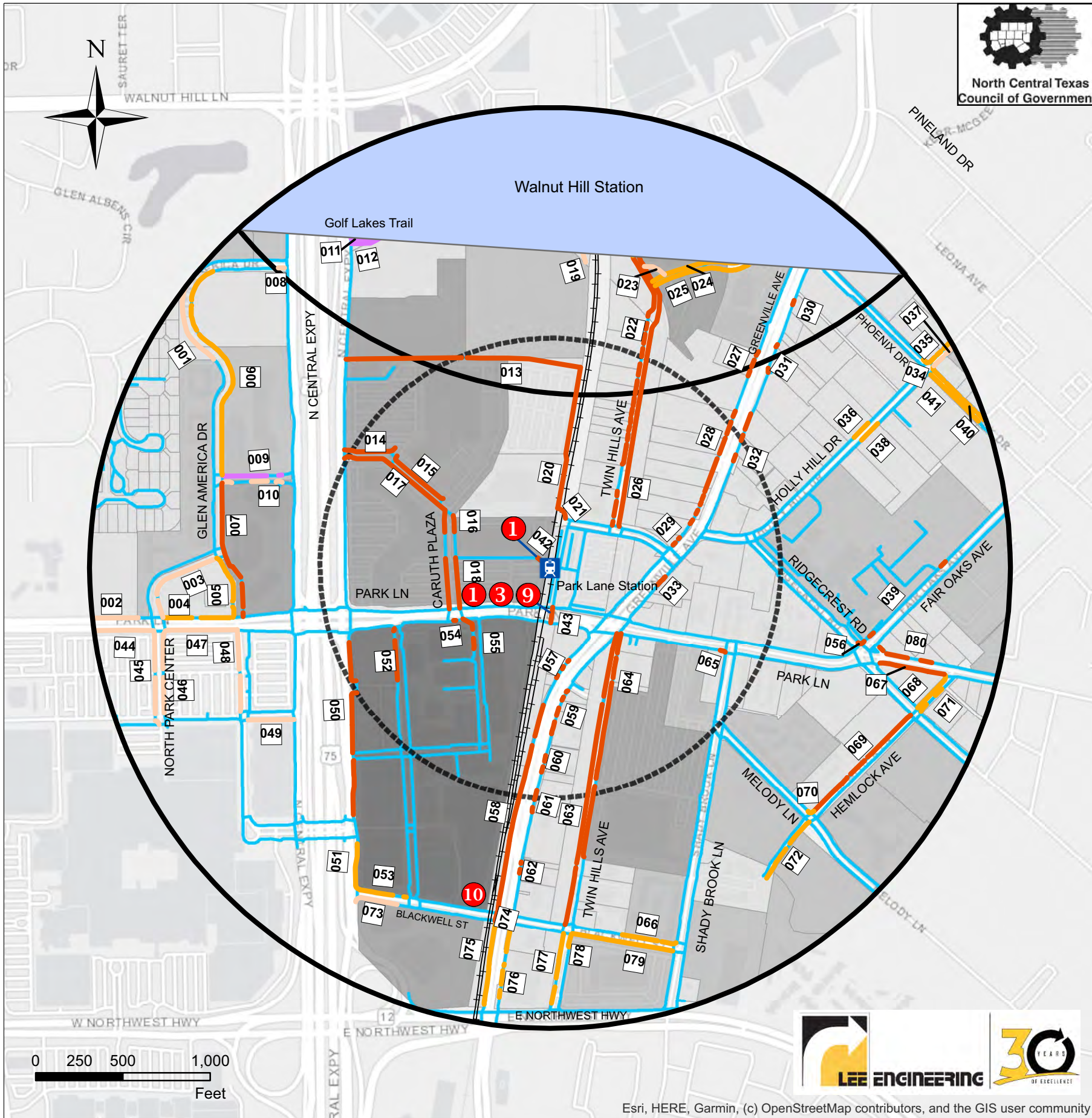
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
 - Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority**

Priority	Construction Cost Estimate
High	\$2,440,100
Medium	\$1,087,600
Low	\$729,700
Total	\$4,257,400
- Built by Others** (Blue line)
- Gap to Remain** (Purple line)
- Buffers**
 - 0.5 Mile Buffer
 - 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

- Ppl
- 0 - 234
 - 235 - 1049
 - 1050 - 2586
 - 2587 - 5364
 - 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

- | Hi | Md | Lo | Oth | Countermeasure |
|----|----|----|-----|--------------------------------------|
| 1 | 1 | 1 | 1 | Crosswalk Signs, Markings & Lighting |
| 2 | 2 | 2 | 2 | Raised Crosswalk |
| 3 | 3 | 3 | 3 | Advance "Yield Here" Sign |
| 4 | 4 | 4 | 4 | In-Street Pedestrian Crossing |
| 5 | 5 | 5 | 5 | Curb Extension |
| 6 | 6 | 6 | 6 | Pedestrian Refuge Island |
| 7 | 7 | 7 | 7 | Rectangular Rapid Flashing Beacon |
| 8 | 8 | 8 | 8 | Road Diet |
| 9 | 9 | 9 | 9 | Pedestrian Hybrid Beacon |

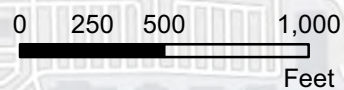
Signalized Crosswalk Improvements

- | | | | | |
|----|----|----|----|--|
| 10 | 10 | 10 | 10 | Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals |
| 11 | 11 | 11 | 11 | Traffic Signal |

Improvement Code Legend (See Matrix)

4B-PL-SW-01

- 4B ← Station Number
- PL ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches [] on Map)



FTA DART Stations Last Mile Connections Lovers Lane Station August 2020

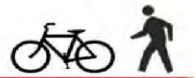


Figure 4C-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$369,600
Medium	\$238,300
Low	\$61,600
Total	\$669,500

- Built by Others
- Gap to Remain

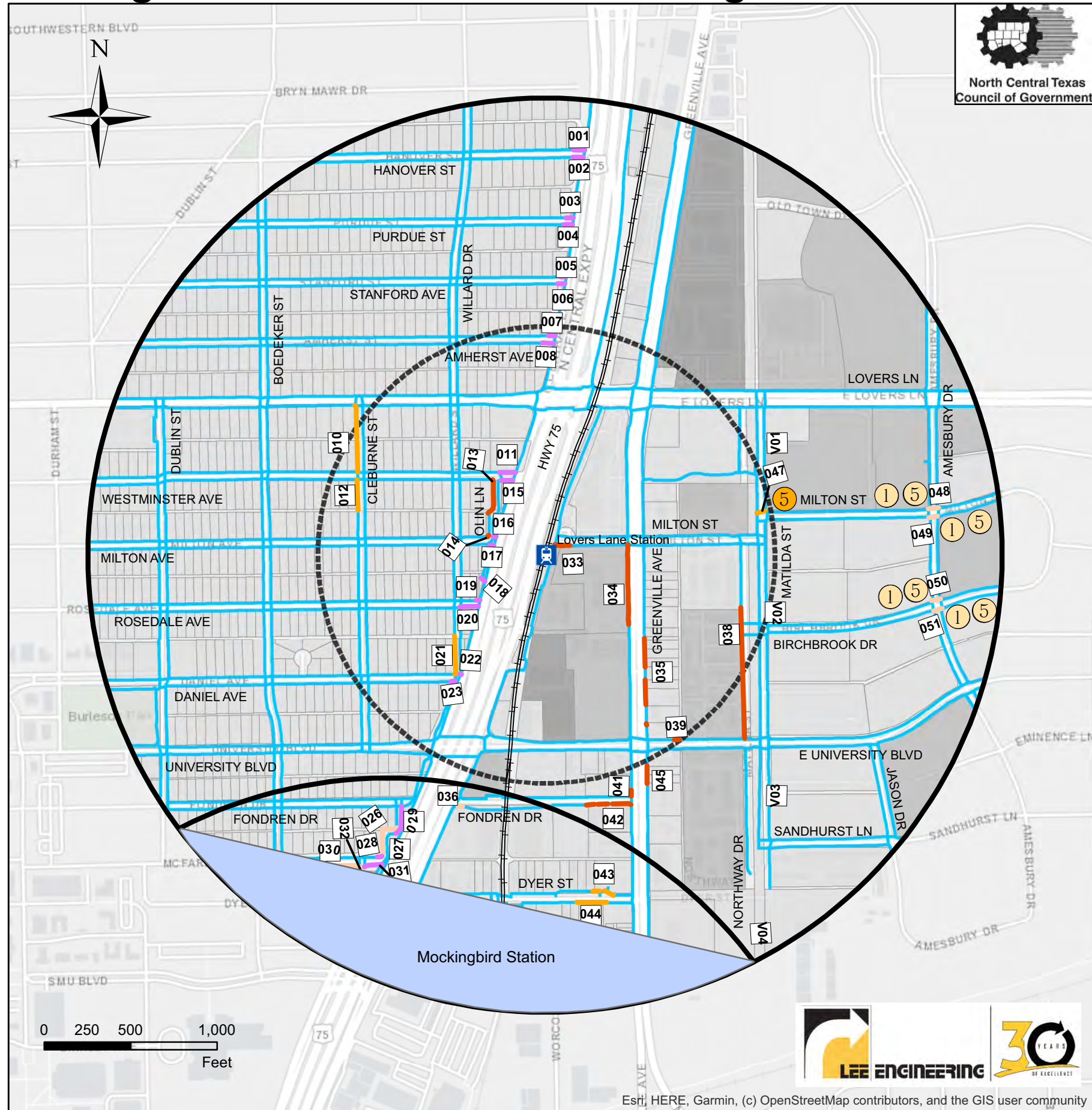
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

4C-LL-SW-01

- 4C ← Station Number
- LL ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Mockingbird Station August 2020



Figure 4D-2 Construction Packages

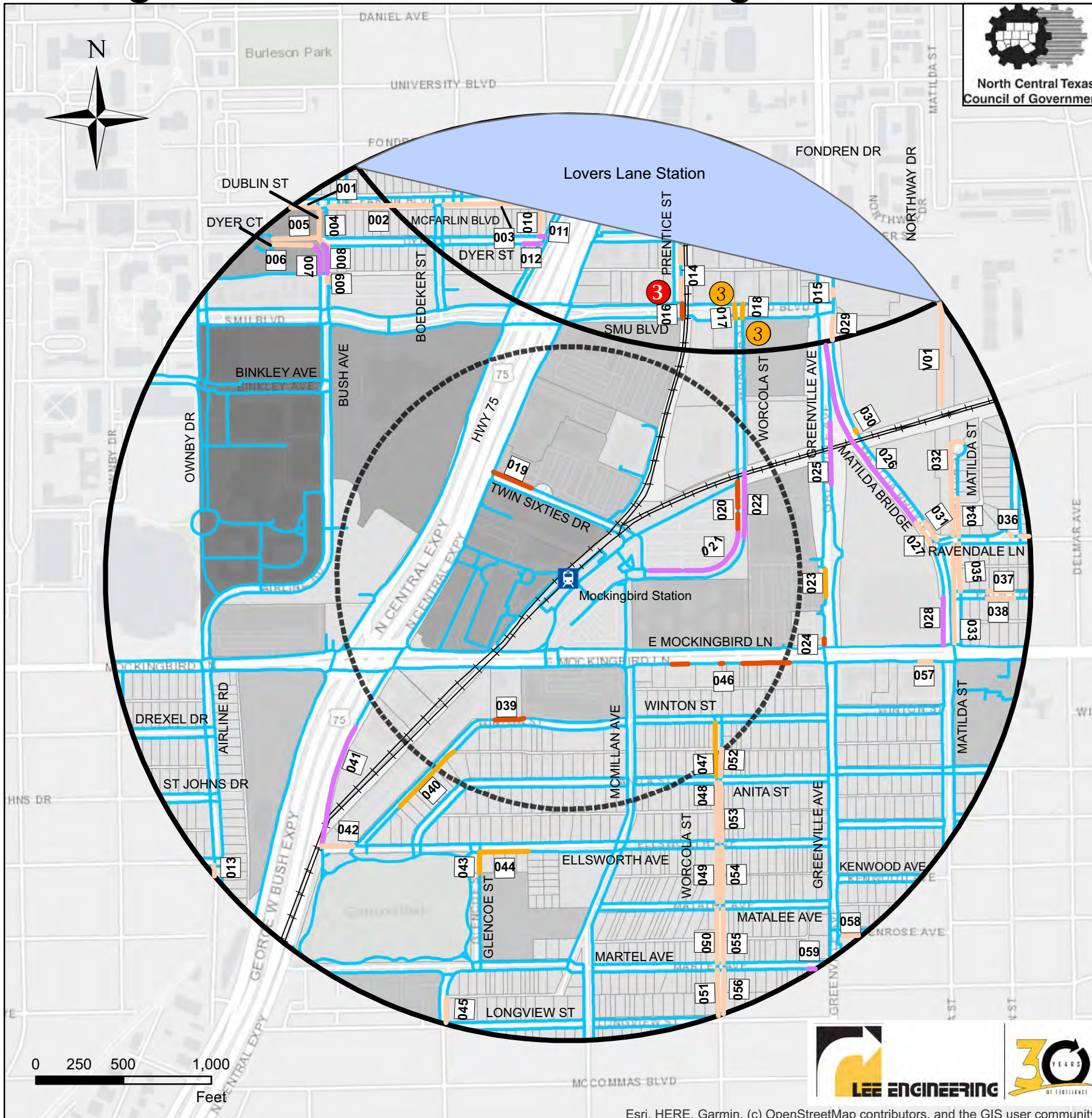
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
 - Existing Sidewalk/Crosswalk
- Proposed Sidewalk/ Crosswalk by Priority**

Priority	Construction Cost Estimate
High	\$513,400
Medium	\$210,600
Low	\$1,565,900
Total	\$2,289,900
- Built by Others** (Blue line)
- Gap to Remain** (Purple line)
- Buffers**
 - 0.5 Mile Buffer
 - 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

- Ppl
- 0 - 234
 - 235 - 1049
 - 1050 - 2586
 - 2587 - 5364
 - 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

- | Hi | Md | Lo | Oth | Description |
|----|----|----|-----|--------------------------------------|
| | | | | Crosswalk Signs, Markings & Lighting |
| | | | | Raised Crosswalk |
| | | | | Advance "Yield Here" Sign |
| | | | | In-Street Pedestrian Crossing |
| | | | | Curb Extension |
| | | | | Pedestrian Refuge Island |
| | | | | Rectangular Rapid Flashing Beacon |
| | | | | Road Diet |
| | | | | Pedestrian Hybrid Beacon |

Signalized Crosswalk Improvements

- | | | | | |
|--|--|--|--|--|
| | | | | Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals |
| | | | | Traffic Signal |

Improvement Code Legend (See Matrix)

- 4D-MB-SW-01
- 4D ← Station Number
 - MB ← Station Abbreviation
 - SW ← Sidewalk (or CW for Crosswalk)
 - 01 ← Improvement Number (Matches on Map)



3.2.7 LBJ Skillman Station (Half-Mile Area)

Figure 4E-2 on page 90 identifies the recommended improvements in the half-mile area around the LBJ Skillman Station. The station is fairly poorly connected to the surrounding land uses, with continuous sidewalk being the exception rather than the rule along area streets.

Many sidewalks will be constructed by upcoming projects. The City of Dallas will reconstruct the intersection of Skillman Street and Audelia Road, with new sidewalk on both sides of each reconfigured approach street. TxDOT will construct continuous sidewalk along the outside of the IH-635 frontage roads. Additional coordination with TxDOT will be required to provide a connection between sidewalk on the west side and the existing pedestrian bridge over IH-635 to the station platform, as illustrated by improvement 4E-LS-SW-055 on Figure 4E-2.

The City of Dallas and DART should coordinate with the owners of adjacent apartment complexes to add short sidewalk connections to their properties (improvements 4E-LS-SW-056 and 4E-LS-SW-059 on Figure 4E-2) to reduce the walking distance to the station for apartment residents.

Worn paths in the grass were observed on the undeveloped DART property north of the station platform, indicating existing pedestrian demand to the apartments located along Adleta Blvd. DART has communicated that proposals have been made for development of the vacant portion of this property. The sidewalk connections represented as improvements 4E-LS-SW-035 and 4E-LS-SW-037 should be built together with the development construction (if not sooner).

New sidewalk is also proposed along both sides of Miller Road south of the station and in the industrial areas to the east accessed by Pagemill Road, Dilworth Road, Sandhill Road, and Rockwall Road to provide more access to employment.

A pedestrian traffic signal should be considered for crossing Audelia Road to Valmarie Drive west of the existing sidewalk that parallels the north side of the DART tracks and connects to the bridge over IH-635 to the station platform. A pedestrian hybrid beacon should be considered at the existing crosswalk across Miller Road at Markson Road for better access to the industrial employment centers on the south side of the intersection.

Additional details about these and other improvements recommended in Figure 4E-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for LBJ Skillman Station that can be found in Appendix I and Appendix J.

3.2.8 White Rock Station (Half-Mile Area)

Figure 4F-2 on page 91 identifies the recommended improvements in the half-mile area around the White Rock Station. Good multi-modal connections exist to apartments east and south of the station. The single-family home neighborhoods to the west and southwest lack sidewalk in many cases. A shared use path exists on the north side of Northwest Highway, with connections to the White Rock Creek Trail and White Rock Lake Loop Trail providing access to points beyond the half-mile area.

Improvements 4F-WR-SW-41 through 4F-WR-SW-43 in Figure 4F-2 show the location of a recommended sidewalk connection to Walling Circle, Walling Lane, and the neighborhood west of the station where Walling Circle's sidewalk currently dead ends at the fence surrounding the

DART property. The City of Dallas DART should consider working together with DART to provide a pedestrian break in the fencing to connect to new sidewalk recommended on DART property connecting to the station platform. The City may also decide to build sidewalk along the west side of Walling Circle (see improvement 4F-WR-SW-40). See Section 3.1.8 for more details.

Other improvements further distant from the station mainly include sidewalk on several neighborhood residential streets, as well as along the north side of Mockingbird Lane. Enhanced crosswalks should be provided at the intersection of Lawther Drive with the westbound ramps for Mockingbird Lane at their grade-separated interchange. Advance yield lines and a pedestrian hybrid beacon are recommended at this intersection due to vehicular traffic speeds and the likely significant volumes of foot and bike traffic crossing to access the White Rock Creek Trail that runs along the east side of Lawther Road.

Additional details about these and other improvements recommended in Figure 4F-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for White Rock Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections LBJ/Skillman Station August 2020



Figure 4E-2 Construction Packages

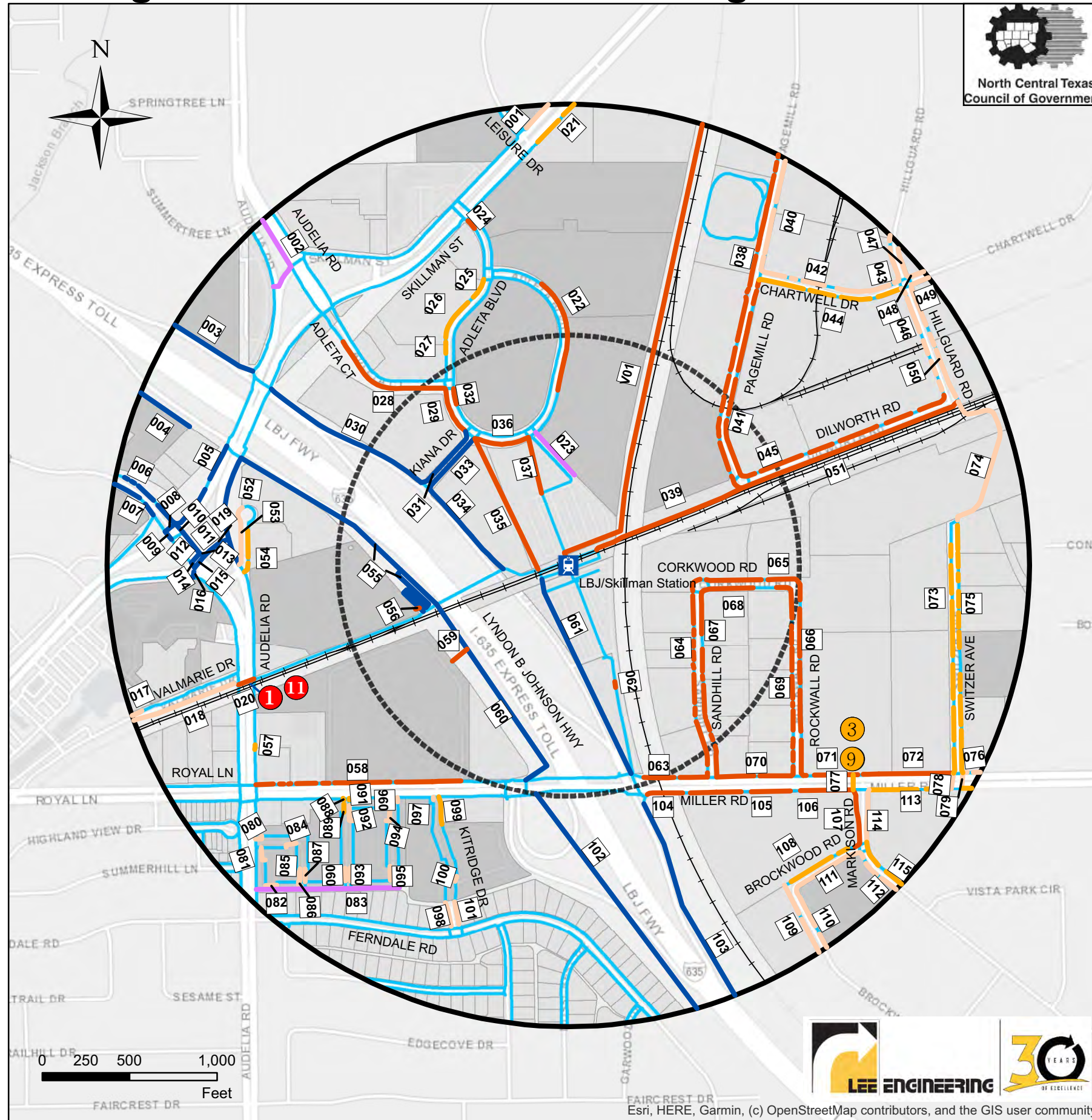
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
 - Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority**

Priority	Construction Cost Estimate
High	\$2,446,200
Medium	\$845,400
Low	1,216,300
Total	\$4,507,900
- Built by Others** (Blue line)
- Gap to Remain** (Purple line)
- Buffers**
 - 0.5 Mile Buffer
 - 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

- Ppl
- 0 - 234
 - 235 - 1049
 - 1050 - 2586
 - 2587 - 5364
 - 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

- | Hi | Md | Lo | Oth | Countermeasure |
|----|----|----|-----|--------------------------------------|
| 1 | 1 | 1 | 1 | Crosswalk Signs, Markings & Lighting |
| 2 | 2 | 2 | 2 | Raised Crosswalk |
| 3 | 3 | 3 | 3 | Advance "Yield Here" Sign |
| 4 | 4 | 4 | 4 | In-Street Pedestrian Crossing |
| 5 | 5 | 5 | 5 | Curb Extension |
| 6 | 6 | 6 | 6 | Pedestrian Refuge Island |
| 7 | 7 | 7 | 7 | Rectangular Rapid Flashing Beacon |
| 8 | 8 | 8 | 8 | Road Diet |
| 9 | 9 | 9 | 9 | Pedestrian Hybrid Beacon |

Signalized Crosswalk Improvements

- | | | | | |
|----|----|----|----|--|
| 10 | 10 | 10 | 10 | Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals |
| 11 | 11 | 11 | 11 | Traffic Signal |

Improvement Code Legend (See Matrix)

- 4E-LS-SW-01
- 4E ← Station Number
 - LS ← Station Abbreviation
 - SW ← Sidewalk (or CW for Crosswalk)
 - 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections White Rock Station August 2020



Figure 4F-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,232,700
Medium	\$2,163,700
Low	\$2,510,100
Total	\$5,906,500

- Built by Others
- Gap to Remain

Buffers

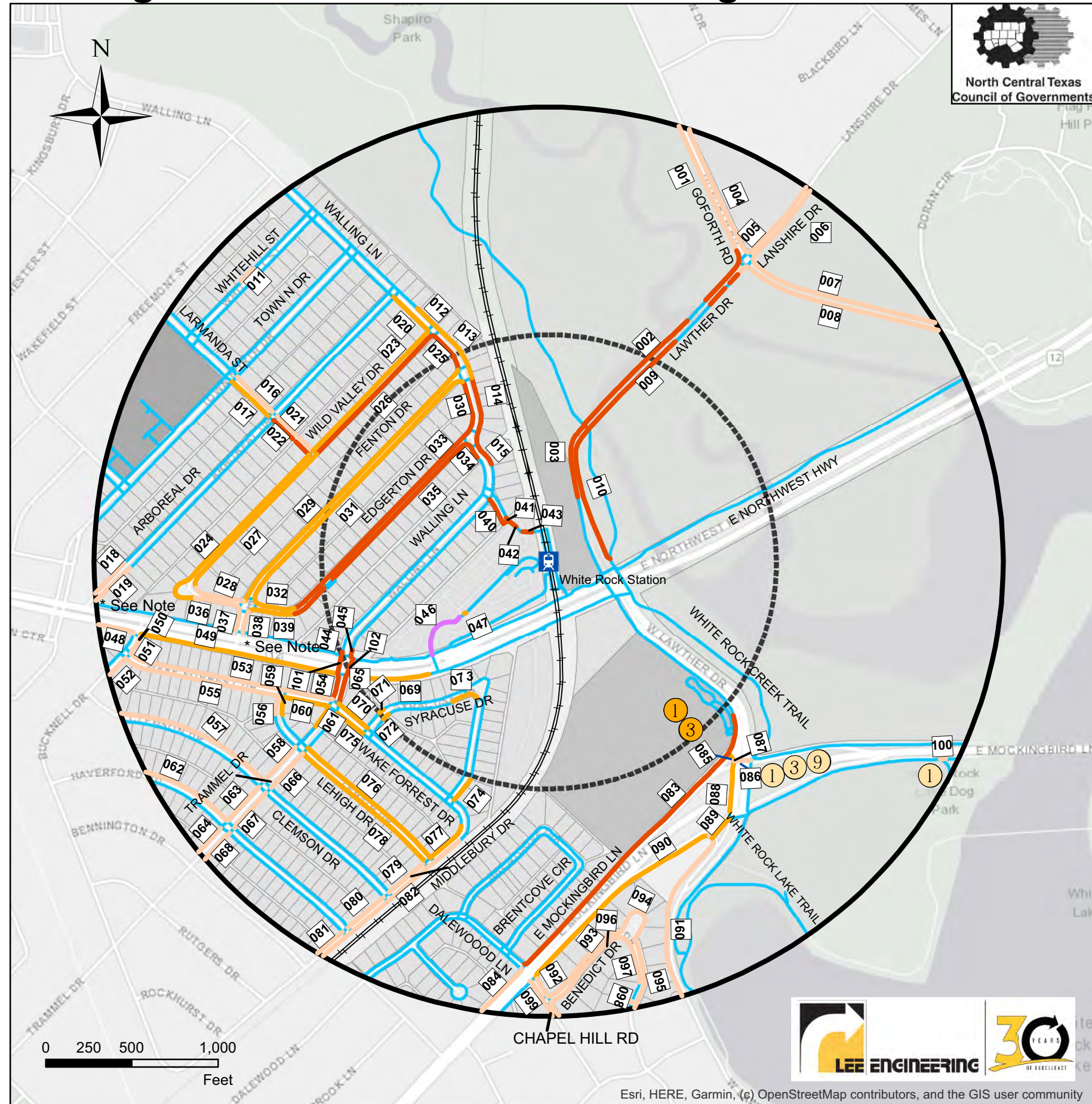
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339

* Relocate stop sign north of shared use path next to stop bar. Street name signs for Fenton Dr, Arboreal Dr, and Northwest Hwy should remain south of shared use path.



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

4F-WR-SW-01

- 4F ← Station Number
- WR ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.2.9 Eighth & Corinth Station (Half-Mile Area)

Figure 5A-2.1 on page 93 identifies the recommended improvements in the half-mile area around the Eighth & Corinth Station. Figure 5A-2.2 on page 94 provides a zoomed-in view of a portion of the station area with a dense concentration of improvements. Existing sidewalk connectivity is good along primary streets in the vicinity of the station, with Clarendon Drive west of 10th Street and 11th Street east of Eighth Street/Bonnie View Road being two exceptions. Many neighborhood streets lack sidewalk or have heavily damaged sidewalk. Much of the area northeast of the station is in the flood plain for the Trinity River, which does not support development but provides access to the station via the Trinity Skyline and Santa Fe Trestle Trails.

In addition to providing or replacing sidewalks, the recommendations include a shared use path along the north side of the DART tracks from the station platform west to Moore Street (improvement 5A-EC-VW-V01 and 5A-EC-VW-V02 on Figure 5A-2.1).

Where this shared use path crosses N Corinth Street Road (improvement 5A-EC-CW-084), the recommended improvement depends on details of the design that are not yet determined. If the crossing of Cedar Creek just west of Moore Street can be built to a sufficient elevation to also span directly over S Corinth St Rd, this would be preferred. A ramp or stairs up to this bridge would shorten the walking distance to the station for some residents to the southwest.

However, if the bridge over Cedar Creek can only connect to the west side of S Corinth St Rd at street level, then aesthetic, non-climbable fencing should be built in the median of S Corinth St Rd to discourage mid-block pedestrian crossings and channelize them instead 300 feet to the north to the signalized crosswalk at the intersection with E Clarendon Dr. The estimated cost for this improvement assumes construction of median fencing in lieu of the pedestrian bridge.

Enhanced crosswalks should be provided at three locations:

1. Across Eighth Street from the east end of the station platform to connect to the Santa Fe Trestle Trail (improvement 5A-EC-CW-136). Here, **advance yield lines and "Yield Here to Pedestrians" signing** should be added, pedestrian warning signs should be adjusted, and pushbutton activated rectangular rapid flashing beacons (RRFB's) attached to the pedestrian warning sign assemblies. The City of Dallas should coordinate with DART on these improvements, since some may lie on station right-of-way. See Station Improvement 5A-EC-ST-08 and Section 3.1.9 for more details.
2. Across Eighth Street at Denley Drive (improvement 5A-EC-CW-038), add lighting and additional signing to this existing marked school crosswalk. Add advance yield lines and "Yield Here to Pedestrians" signing at the yield lines, and pedestrian warning signs at the crosswalk. The City of Dallas should consider a road diet, pedestrian-actuated rectangular rapid flashing beacons (RRFB's) a median refuge area and/or a pedestrian hybrid beacon.
3. Across N Corinth Street Rd at Avenue B (improvements 5A-EC-CW-089 and 5A-EC-CW-090), the City should add crosswalk pavement markings and advance warning signs to these existing signed and lit but unmarked school crosswalks. Advance yield lines and "Yield Here to Pedestrians" signing should be added for each approach. The City should also consider a road diet from six lanes to four to allow construction of a median refuge island. Finally, the City should consider a pedestrian hybrid beacon to further enhance visibility of crossing.

Additional details about these and other improvements recommended in Figures 5A-2.1 and 5A-2.2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Eighth & Corinth Station that can be found in Appendix I and Appendix J.

3.2.10 Dallas Zoo Station (Half-Mile Area)

Figure 5B-2.1 on page 95 identifies the recommended improvements in the half-mile area around the Dallas Zoo Station. Figure 5B-2.2 on page 96 provides a zoomed-in view of a portion of the station area with a dense concentration of improvements. The station is highly disconnected from sidewalks in surrounding neighborhoods. The Dallas Zoo itself and Marsalis Avenue along its eastern boundary form a barrier which impedes more direct multi-modal travel between the station and neighborhoods on the opposite side of the zoo. Long sidewalk gaps on the south side of IH-35E also contribute to the problem.

Though Marsalis Avenue has sidewalks along both sides in some places, no connections are provided from the overpass bridge above to Clarendon Drive or the station platform below. Roughly half of the neighborhood streets lack existing sidewalk in good condition, and there are no existing shared use path or bicycle facilities in the area.

The improvements highlighted in yellow along Marsalis Avenue, Clarendon Drive, Ewing Avenue, Morrell Avenue, Strickland Street, and Galloway Avenue were selected by NCTCOG for 15% sidewalk design by the consultant team. Several improvements along the IH-35E frontage roads will be included as part of TxDOT's widening of the highway which is currently under construction.

Near the station platform, the City of Dallas should coordinate with DART to add pedestrian warning signs to the existing marked and lit crosswalk from the station platform across Clarendon Drive to the zoo entrance. Refer to improvement 5B-DZ-CW-085 on Figure 5B-4.1. This should include additional signing, striping, a pedestrian and pedestrian-actuated RRFB's. See Section 3.1.10 for more information.

Constructing an elevator and stairway connection between sidewalk on the Marsalis Ave bridge above and Clarendon Dr beneath near the station platform could significantly reduce walking distances to the station for many destinations west of the zoo and/or north of IH-35E, since they would no longer need to travel east out of the way via Ewing Ave. However, estimated construction cost for this improvement would require preliminary structural design outside this scope of work.

Additional details about these and other improvements recommended in Figures 5B-2.1 and 5B-2.2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Dallas Zoo Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections 8th and Corinth Station August 2020



Figure 5A-2.1 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$3,536,200
Medium	\$1,941,900
Low	\$1,075,900
Total	\$6,554,000

- Built by Others
- Gap to Remain

Buffers

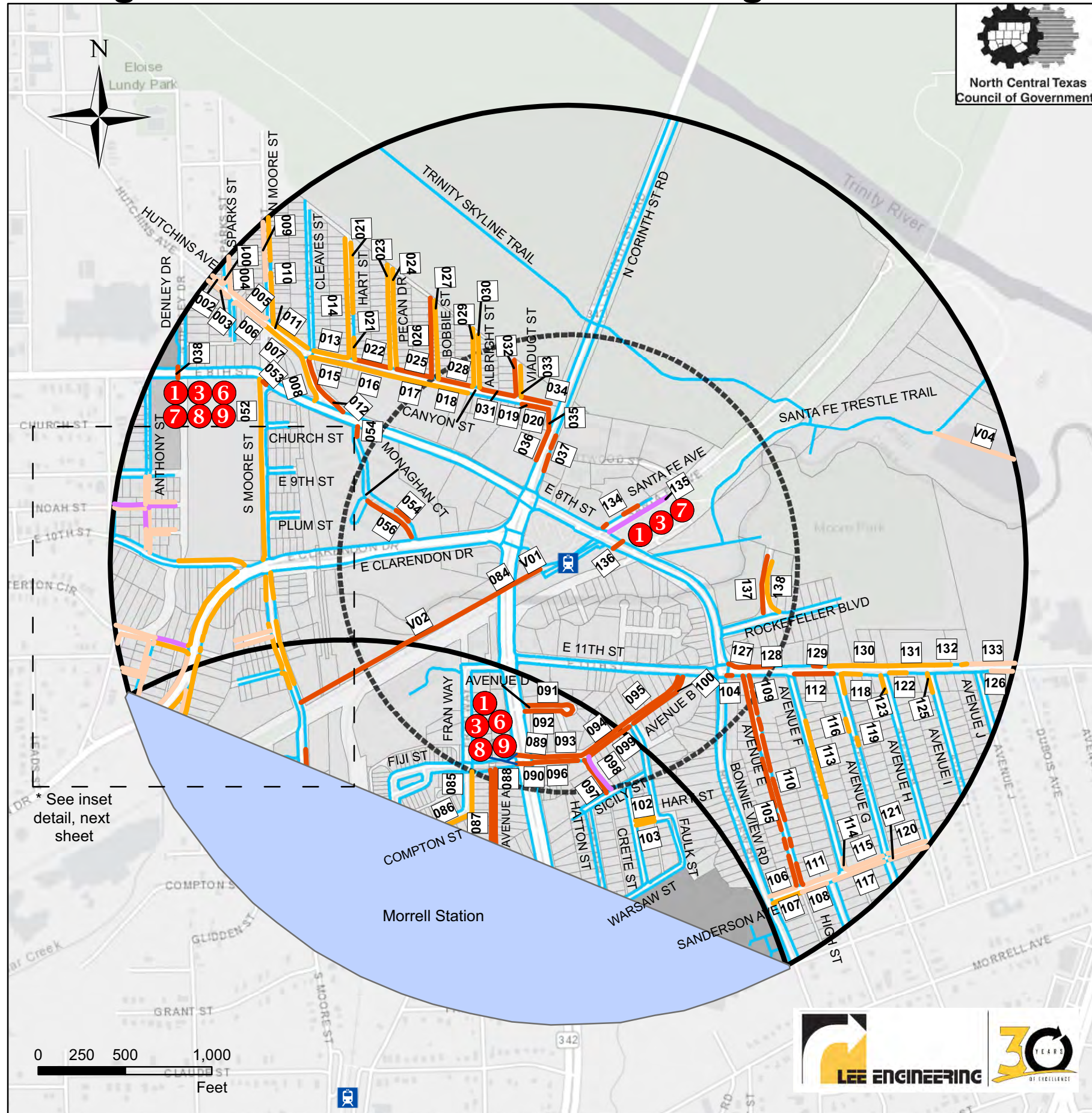
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339

* See inset detail, next sheet



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

5A-EC-SW-01

- 5A ← Station Number
- EC ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

FTA DART Stations Last Mile Connections 8th and Corinth Station August 2020



Figure 5A-2.2 Construction Packages Inset Detail

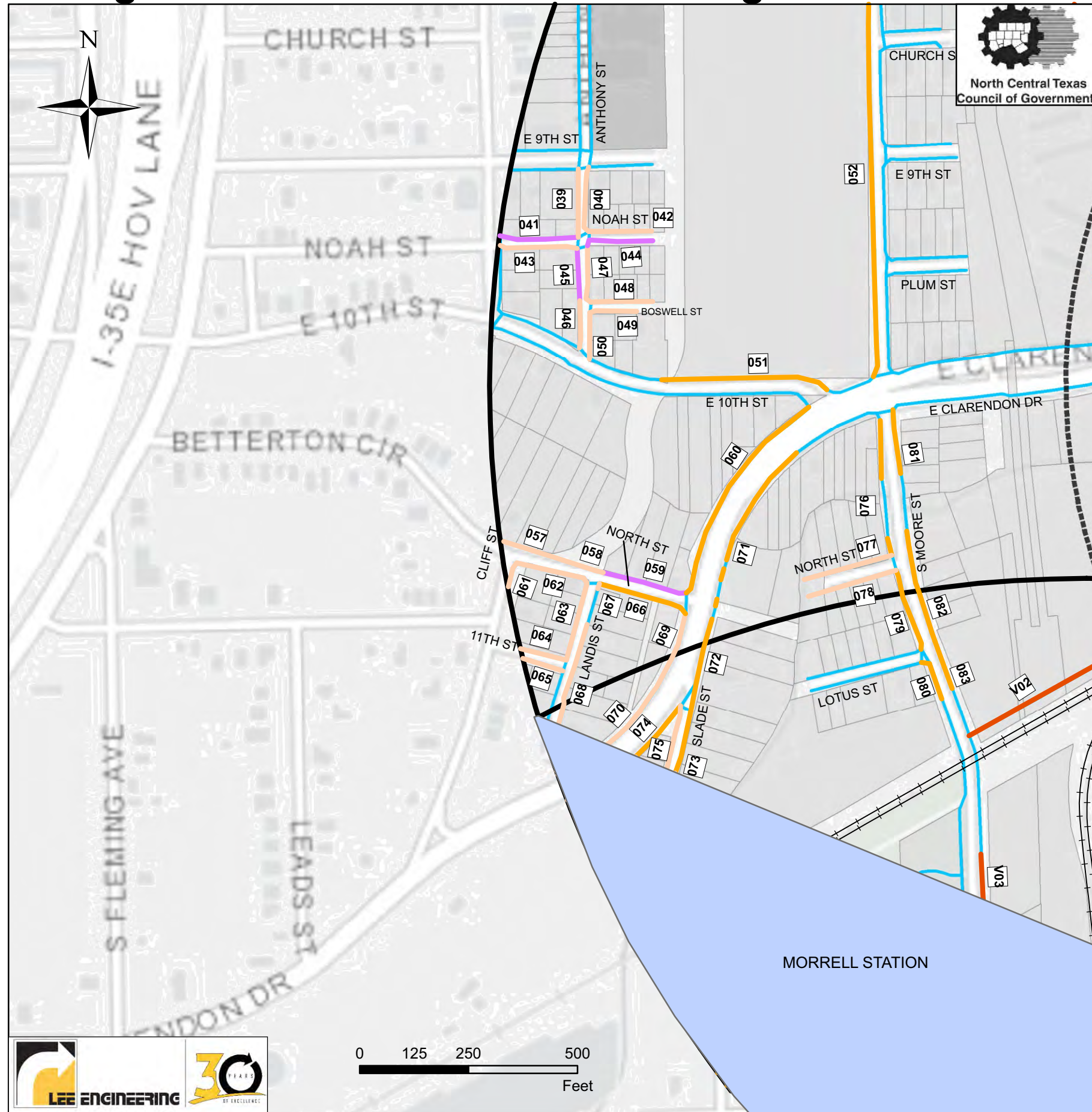
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

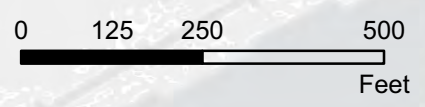
Hi	Md	Lo	Oth	Description
				Crosswalk Signs, Markings & Lighting
				Raised Crosswalk
				Advance "Yield Here" Sign
				In-Street Pedestrian Crossing
				Curb Extension
				Pedestrian Refuge Island
				Rectangular Rapid Flashing Beacon
				Road Diet
				Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

				Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
				Traffic Signal

Improvement Code Legend (See Matrix)

5A ← Station Number
EC ← Station Abbreviation
SW ← Sidewalk (or CW for Crosswalk)
01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Dallas Zoo Station August 2020



Figure 5B-2.1 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$3,304,400
Medium	\$1,843,000
Low	\$948,800
Total	\$6,096,200

- Built by Others
- Gap to Remain

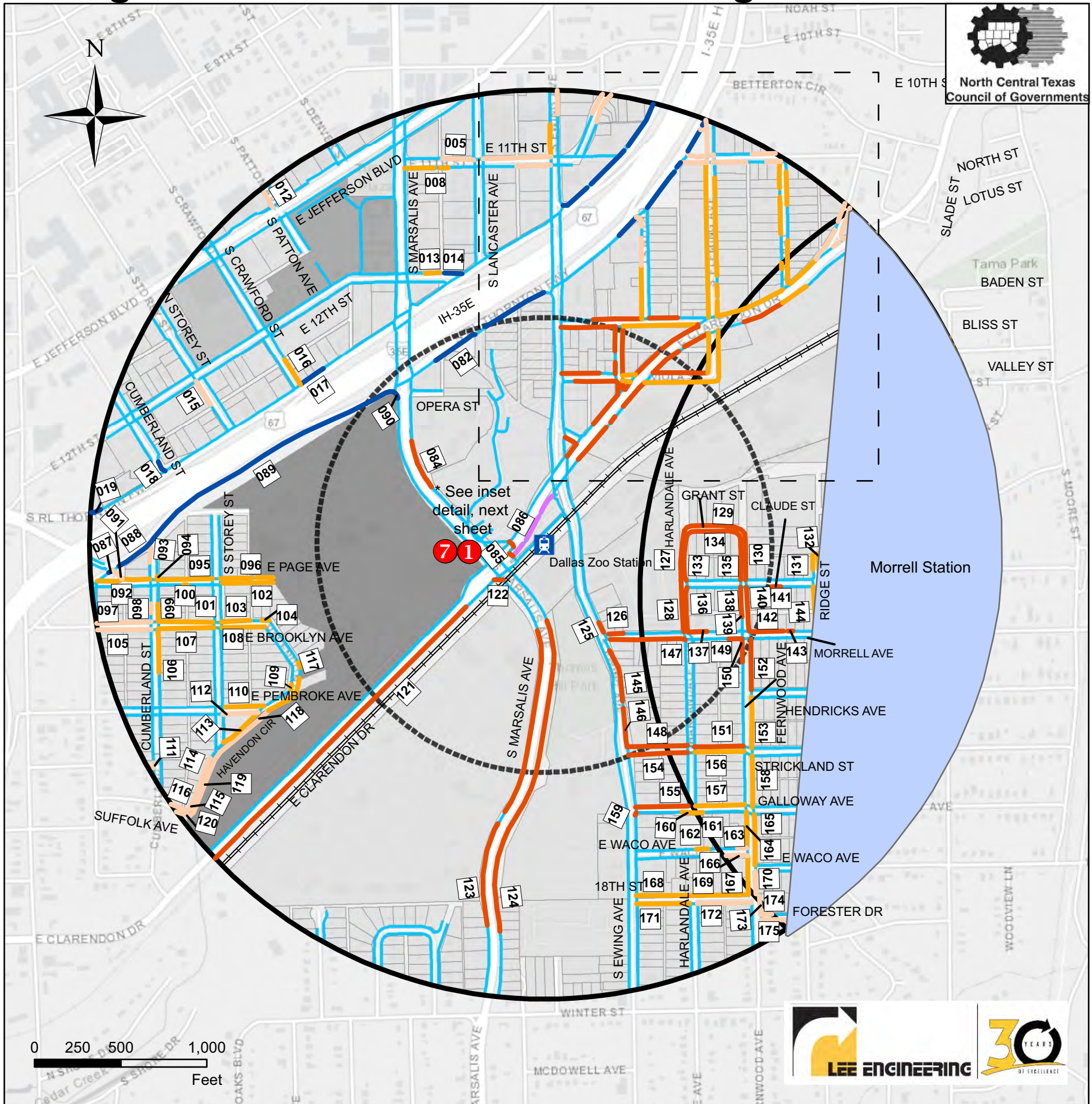
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

5B-DZ-SW-01

- 5B ← Station Number
- DZ ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)





FTA DART Stations
 Last Mile Connections
Dallas Zoo Station
 August 2020

Figure 5B-2.2 Construction Packages



Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339

Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

5B-DZ-SW-01

- 5B ← Station Number
- DZ ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.2.11 Morrell Station (Half-Mile Area)

Figure 5C-2.1 on page 98 identifies the recommended improvements in the half-mile area around the Morrell Station. Figure 5C-2.2 on page 99 provides a zoomed-in view of a portion of the station area with a dense concentration of improvements. This station is surrounded by mostly single-family homes. Many of the residential streets have sidewalk in fair to good condition. However, on many other streets sidewalk is almost entirely absent or deteriorated.

Across Morrell Avenue immediately south of the station, the City should coordinate with DART to install signed and marked crosswalks (see improvements 5C-MO-CW-66 through 5C-MO-CW-69). These should include new streetlighting, and consideration should be given to constructing a raised pedestrian refuge island in the median. See Section 3.1.11 and station improvements 5C-MO-ST-03 and 5C-MO-ST-04.

To the east along Morrell Avenue at its intersection with Hutchins Road (see improvements 5C-MO-CW-71 and 5C-MO-CW-72), the City should add school crossing signs at this existing marked and lit crosswalk, which is located within a signed school reduced speed zone for Franklin D. Roosevelt High School. The improvement should include adding advance yield lines and "Yield Here to Pedestrians" signing due to the high width of the two lane roadway (~40 feet). Consideration should also be given to constructing a median refuge island and/or curb extensions and adding pedestrian-actuated RRFB's.

A worn path in the grass east of Renner Road indicates existing pedestrian demand leading to a pedestrian bridge over Little Cedar Creek and stairs up to S Corinth Street Road, where a DART bus stop is present (see improvement 5C-MO-SW-107). Sidewalk to fill this gap should be constructed in conjunction with enhanced crosswalks across S Corinth Street Road (at locations 5C-MO-CW-108 and 5C-MO-CW-135) to allow DART riders to safely and comfortably access the bus stops on either side of the six-lane divided arterial at its intersection with High Hill Boulevard, where a road diet along South Corinth Street Road should be considered along with a pedestrian hybrid beacon and crosswalk signing and striping enhancements.

The City should coordinate with DART to ensure that the crosswalk design meets DART's needs for locating the bus stops, with bus stops downstream of the crosswalks for better sight lines if possible.

Additional details about these and other improvements recommended in Figures 5C-2.1 and 5C-2.2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Morrell Station that can be found in Appendix I and Appendix J.

3.2.12 Tyler Vernon Station (Half-Mile Area)

Figure 6A-2.1 on page 100 identifies the recommended improvements in the half-mile area around the Tyler Vernon Station. Figures 6A-2.2 and 6A-2.3 on pages 101-102 provide a zoomed-in view of two portions of the station area with dense concentrations of improvements.

This station serves a mostly residential area. A largely connected rectangular grid street system partially compensates for the lack of sidewalk on many streets north and southwest of the station, though Clarendon Drive and the creek to the north of it are a barrier to linear travel for the neighborhood to their north. To the southeast of the station, sidewalks are completely absent from the lower density residential neighborhood.

Significant segments of sidewalk are proposed along Leganon Avenue, adjacent to the station, as well as along Nolte Drive, Polk Street, Tyler Street, and Vernon Avenue as well as along many neighborhood streets.

Enhanced crosswalks are proposed at several locations. Among the most notable are:

- Across Tyler Street adjacent to the east end of the station platform, where a pedestrian traffic signal and median refuge island are recommended.
- Across the Polk Street Cutoff at Buckalew Street, where new markings, lighting, yield lines and signing, a road diet, and pedestrian hybrid beacon should all be added or considered for this existing signed but unmarked school crosswalk across a three-lane, one-way street. A DART bus stop is located on the west side of the street near this crosswalk.
- Across Tyler Street at Page Avenue, where new markings, yield lines and signing, a road diet, and pedestrian hybrid beacon should all be added or considered for this existing signed but unmarked school crosswalk across a three-lane, one-way street in a 20 mph reduced speed school zone. A DART bus stop is located on the east side of the street near this crosswalk.
- Across Tyler Street at Burlington Avenue, where new markings, lighting, yield lines and signing, a road diet, and pedestrian hybrid beacon should all be added or considered for this existing signed but unmarked school crosswalk that crosses a six-lane divided arterial but which is not in a reduced speed school zone. DART bus stops are located on either side of Tyler St at this location.
- Across Vernon Avenue at Ferndale Avenue, where DART bus stops with modest ridership are present on both sides of the six-lane divided roadway here. The improvement should include advance yield lines and signing, and strong consideration should be given for a pedestrian hybrid beacon and/or a road diet from six to four lanes.

Additional details about these and other improvements recommended in Figures 6A-2.1, 6A-2.2, and 6A-2.3, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Tyler Vernon Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections Morrell Station

August 2020



Figure 5C-2.1 Construction Packages

Legend

DART Rail Station

Railroad Track

Sidewalk

Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$2,365,650
Medium	\$1,615,700
Low	\$1,151,300

Built by Others

Gap to Remain

Buffers

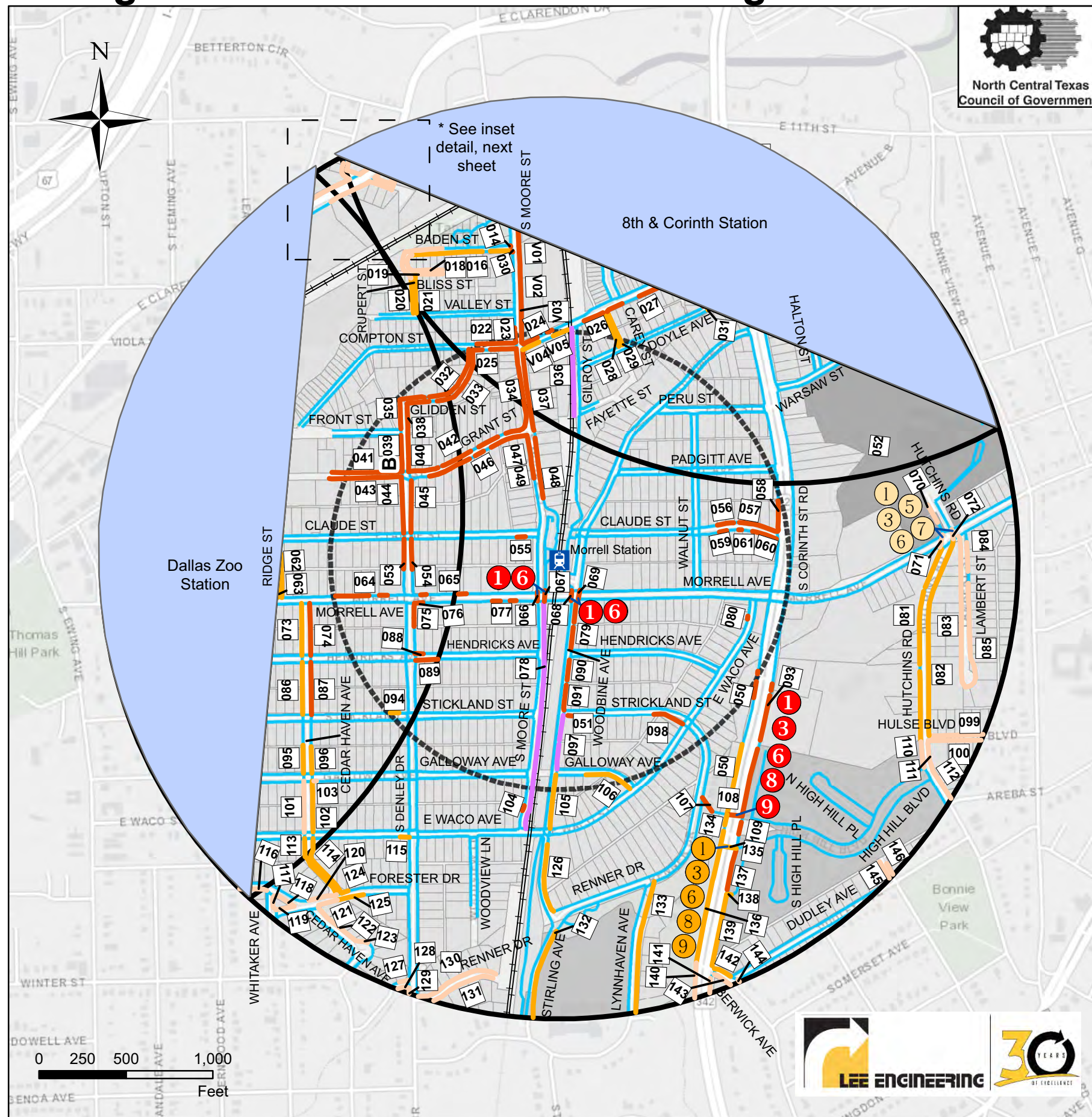
0.5 Mile Buffer

0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

5C	←	Station Number
MO	←	Station Abbreviation
SW	←	Sidewalk (or CW for Crosswalk)
01	←	Improvement Number (Matches 1 on Map)

FTA DART Stations Last Mile Connections Morrell Station

August 2020

Figure 5C-2.2 Construction Packages Inset Detail



Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

5C-MO-SW-01

- 5C ← Station Number
- MO ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

FTA DART Stations Last Mile Connections Tyler/Vernon Station August 2020



Figure 6A-2.1 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$3,790,900
Medium	\$4,017,100
Low	\$3,514,900
Total	\$11,322,900

- Built by Others
- Gap to Remain

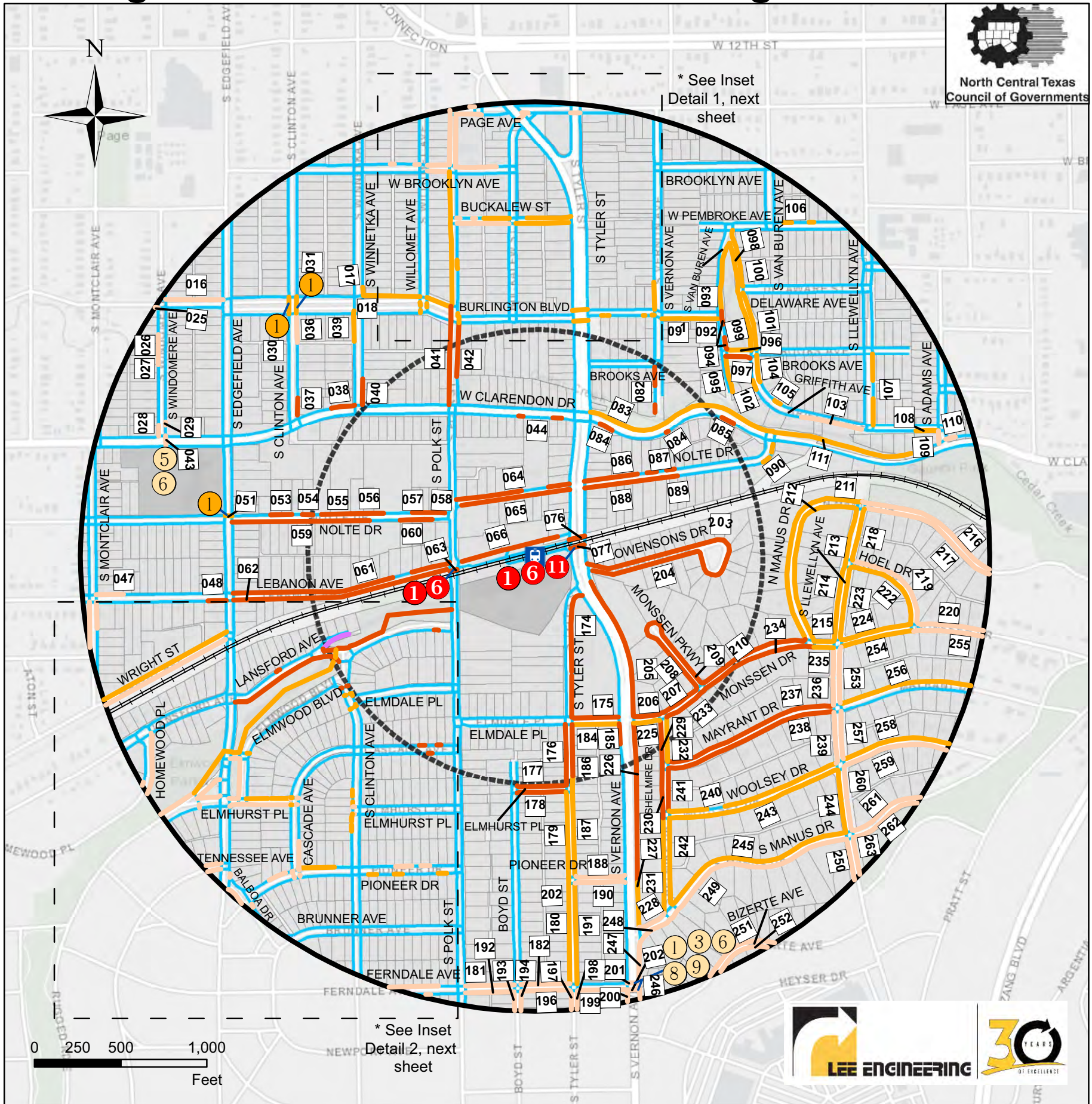
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

6A-TV-SW-01

- 6A ← Station Number
- TV ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations
Last Mile Connections
Tyler/Vernon

Station
August 2020

Figure 6A-2.2
Construction Packages Inset Detail 1



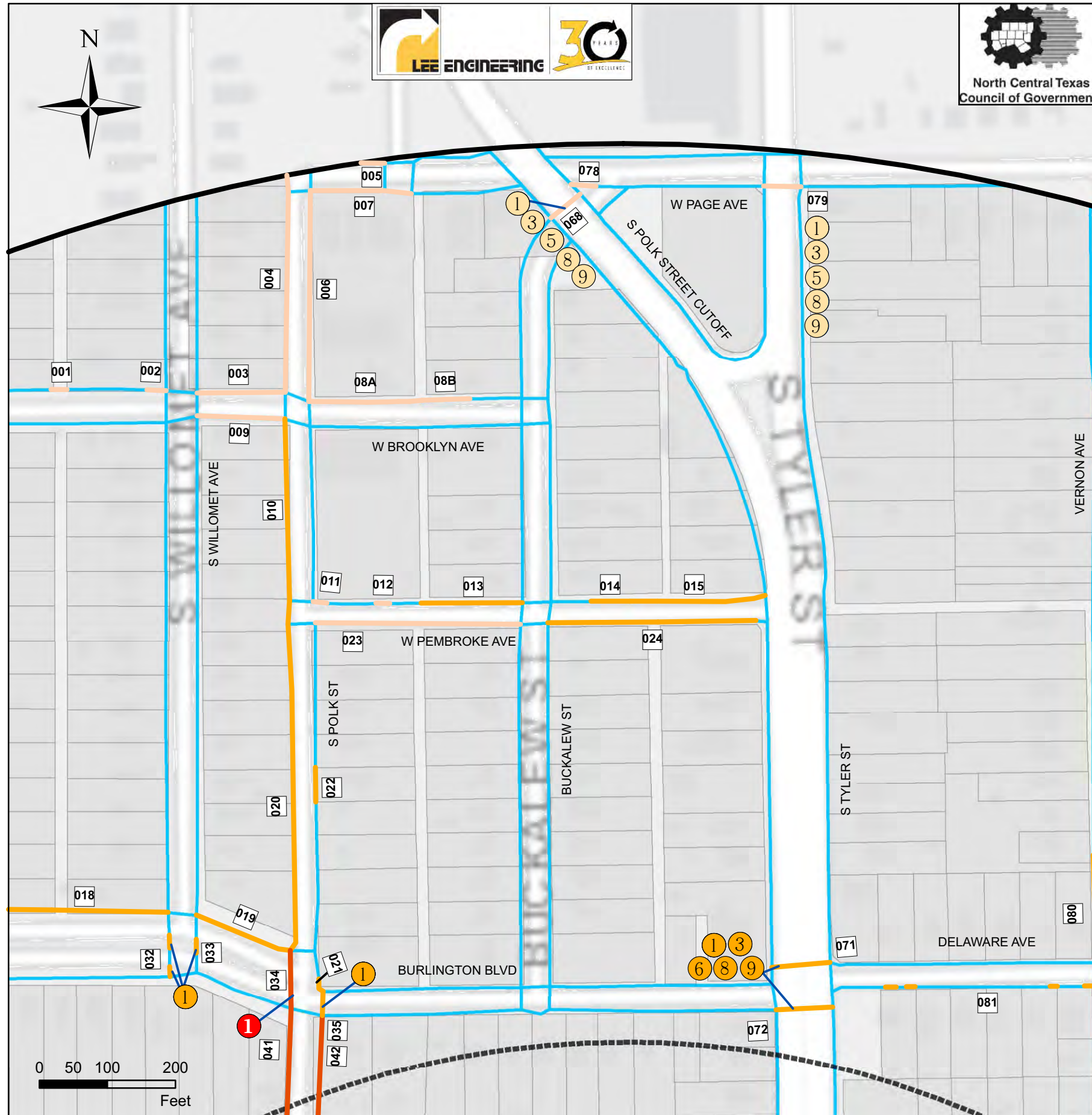
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

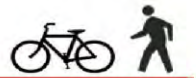
Improvement Code Legend (See Matrix)

6A-TV-SW-01

- 6A ← Station Number
- TV ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

**FTA DART Stations
Last Mile Connections
Tyler/Vernon
Station
August 2020**

**Figure 6A-2.3
Construction Packages Inset Detail 2**

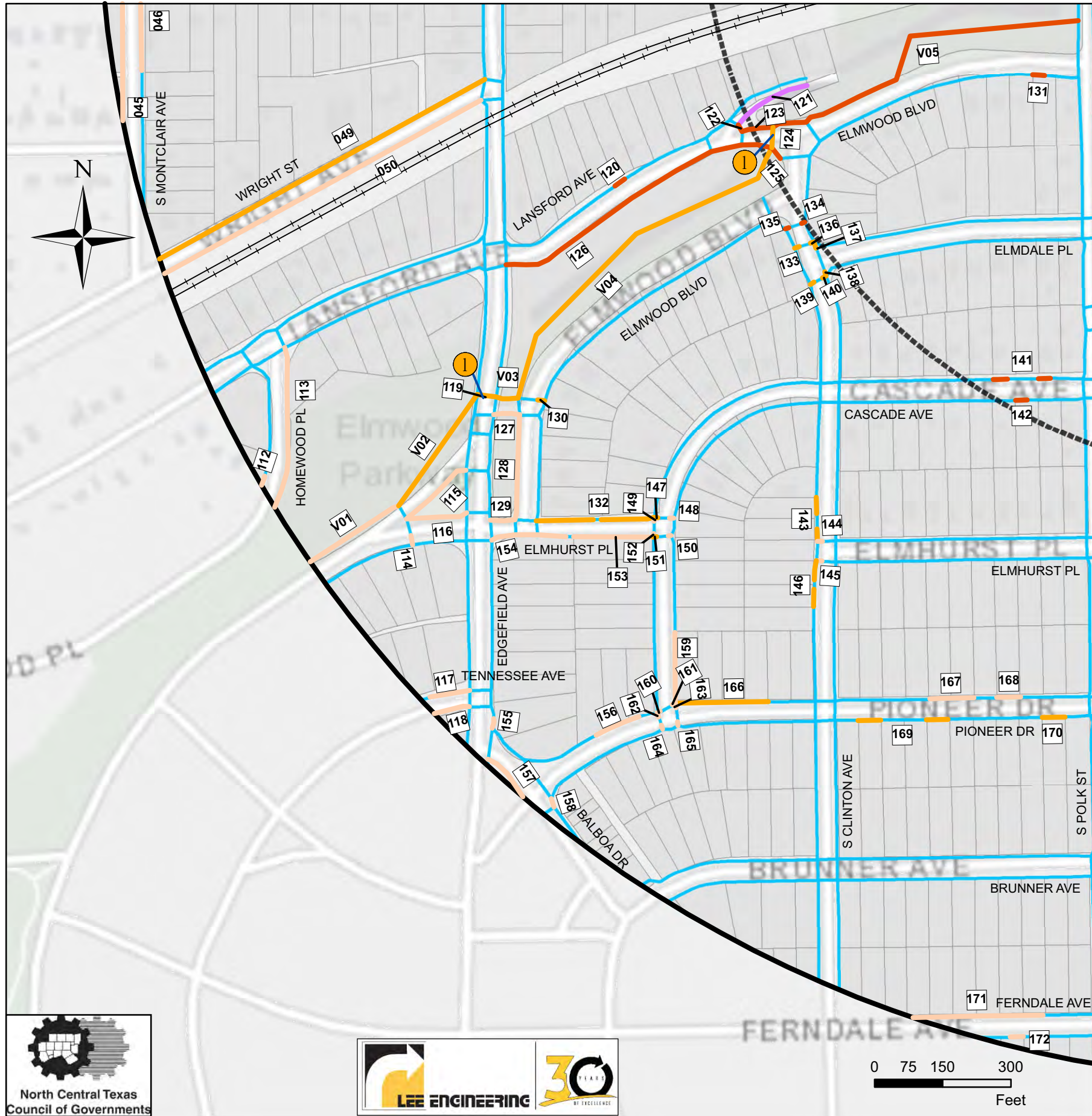


Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

- Ppl**
- 0 - 234
 - 235 - 1049
 - 1050 - 2586
 - 2587 - 5364
 - 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

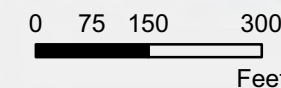
- | Hi | Md | Lo | Oth | |
|---|--|--|--|--------------------------------------|
| 1 | 1 | 1 | 1 | Crosswalk Signs, Markings & Lighting |
| 2 | 2 | 2 | 2 | Raised Crosswalk |
| 3 | 3 | 3 | 3 | Advance "Yield Here" Sign |
| 4 | 4 | 4 | 4 | In-Street Pedestrian Crossing |
| 5 | 5 | 5 | 5 | Curb Extension |
| 6 | 6 | 6 | 6 | Pedestrian Refuge Island |
| 7 | 7 | 7 | 7 | Rectangular Rapid Flashing Beacon |
| 8 | 8 | 8 | 8 | Road Diet |
| 9 | 9 | 9 | 9 | Pedestrian Hybrid Beacon |

Signalized Crosswalk Improvements

- | | | | | |
|---|---|---|---|--|
| 10 | 10 | 10 | 10 | Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals |
| 11 | 11 | 11 | 11 | Traffic Signal |

Improvement Code Legend (See Matrix)

- 6A-TV-SW-01
- 6A ← Station Number
 - TV ← Station Abbreviation
 - SW ← Sidewalk (or CW for Crosswalk)
 - 01 ← Improvement Number (Matches 1 on Map)



3.2.13 Hampton Station (Half-Mile Area)

Figure 6B-2 on page 104 identifies the recommended improvements in the half-mile area around the Hampton Station. Sidewalk connectivity is good for some streets but poor for others. The lack of sidewalk on the west side of Hampton Road north of the station is a barrier to pedestrian travel since there are no other signalized crossings north of Wright Street. Both sides of Wright Street east of the station are also without sidewalk. In addition to filling sidewalk gaps on the streets mentioned above and others, enhanced crosswalks are recommended at the following locations:

- For crossing Wright Street at Hollywood Avenue (improvements 6B-HA-CW-90 and 6B-HA-CW-91), the City of Dallas should coordinate with DART to add crosswalk markings and possibly a median refuge island. The improvements should be coordinated with DART, which will need to add sidewalk connections to the station platform where fences currently exist. See station improvements 6B-HA-ST-05 and 6B-HA-ST-06 and Section 3.1.13 for more details.
- For crossing Wright Street at Montreal Avenue next to the DART station (6B-HA-CW-92), the City should coordinate with DART to add a high-visibility crosswalk. Provide pedestrian ramps on the south side of Wright Street and consider constructing a median refuge island.
- At the signalized intersection of Hampton Road and Wright Street (6B-HA-CW-87 through 89 and 6B-HA-CW-105), the City should add parallel white edge lines to the existing brick crosswalk. See Station area improvements 6B-HA-ST-01 and 6B-HA-ST-02 and Section 3.1.13 regarding similar recommendations made to DART on station property.
- The intersection of Hampton Road and Elmwood Boulevard (6B-HA-CW-133), has a marked, signed, and lit school crosswalk near Moreno Elementary School. DART bus stops with modest ridership are present on either side of Hampton Road here. The City should add advance yield lines and signing and consider a pedestrian hybrid beacon.
- Across Hampton Road south of Illinois Avenue (6B-HA-CW-134) and Illinois Avenue at Hollywood Avenue (improvements 6B-HA-CW-204 and 205), the City should add or upgrade crosswalks with additional warning signs, advance yield lines and signing, and/or pedestrian hybrid beacons. Alternatively, the City and DART may consider consolidating the bus stops these crosswalks serve closer to those at Illinois Avenue or Hampton Road approximately 350 feet to the north or west, where signalized crosswalks are already present.
- For crossing Waverly Drive at Melbourne Avenue (6B-HA-CW-193 and 194), the City should add crosswalk markings and pedestrian ramps to the existing unmarked school crosswalk.

Additional details about these and other improvements recommended in Figure 6B-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Hampton Station that can be found in Appendix I and Appendix J.

3.2.14 Westmoreland Station (Half-Mile Area)

Figure 6C-2 on page 105 identifies the recommended improvements in the half-mile area around the Westmoreland Station. This station serves residential land uses to the north and west and industrial area to the southeast. Multimodal connectivity is relatively poor. Illinois Avenue north of the station and Westmoreland Road to the west are barriers to pedestrian travel since they each have six lanes of traffic and only one traffic signal where they intersect. Significant sidewalk gaps

are present along several major streets. In addition to constructing sidewalk, recommended improvements include:

- For crossing Illinois Avenue at the DART Station driveway (improvements 6C-WM-CW-100 and 101), the City of Dallas should work with DART to add a signed and marked crosswalk with pedestrian hybrid beacon with yield lines and "Yield Here to Pedestrians" signing.
- For crossing Westmoreland Avenue west of the DART station (6C-WM-CW-038, 039), the City should add a signed and marked crosswalk with pedestrian hybrid beacon, connecting to a funded segment of the Regional Veloweb that will extend to the west (6C-WM-VW-V02). Include yield lines and "Yield Here to Pedestrians" signing.
- South of the DART station property, the City of Dallas should work together with DART and the adjacent property owner to add a sidewalk connection to the industrial businesses along Glenfield Ave, approximately following the worn path in the grass that indicates existing pedestrian demand (6C-WM-SW-118 to 120). This work should be coordinated with recommended changes on DART property to provide continuous sidewalk to the train platform. See DART Station improvement 6C-WM-ST-13 and Section 3.1.14 for more details.
- The City of Dallas should add a marked crosswalk across Wright Ave at Illinois Ave (6C-WM-CW-102) due to high skew of the intersection, the resulting long crossing distance, and potential for high speed turns. The work should include new sidewalk through the Wright Ave median. Among other details, also consider adding pedestrian actuated rectangular rapid flashing beacons (RRFB's) in the median and on the northeast side of the intersection to face northeast-bound traffic for increased yielding compliance.
- At the existing signed crosswalk across the south leg of Westmoreland Rd at Texas Dr, a six-lane crossing with high traffic volumes, refresh pavement markings and give strong consideration to a pedestrian hybrid beacon (6C-WM-CW-112). Consider adding new crosswalk markings for the north leg of the intersection (6C-WM-CW-040), which has pedestrian warning signs. Add advance yield lines and "Yield Here to Pedestrians" signing.
- For crossing Westmoreland Road at two additional intersections at Rockford Drive (improvements 6C-WM-CW-036 and 037) and Banning Street (6C-WM-CW-042 and 043), the City should consider adding signed and marked crosswalks with pedestrian hybrid beacons. Add advance yield lines and "Yield Here to Pedestrians" signing.
- For crossing Illinois Avenue at Coombs Creek Drive (6C-WM-CW-016 and 017), the City should add advance yield lines and "Yield Here to Pedestrians" signing at this existing school crosswalk. Also, give strong consideration to adding a pedestrian hybrid beacon.
- For three crossings of Ravinia Drive at Texas Drive (6C-WM-CW-083), Rockford Drive (6C-WM-CW-085), and Rolinda Drive (6C-WM-CW-087), the City should install additional warning signs for the existing school crosswalks. Add advance yield lines, "Yield Here to Pedestrians" signing, and consider installing pedestrian-actuated RRFB's. Also consider a road diet to reduce Ravinia Dr to three lanes to build curb extensions or median refuge islands.

Additional details about these and other improvements recommended in Figure 6C-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Westmoreland Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections Hampton Station

August 2020

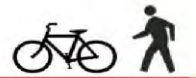


Figure 6B-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,286,200
Medium	\$1,705,600
Low	\$1,941,200
Total	\$4,933,000

- Built by Others
- Gap to Remain

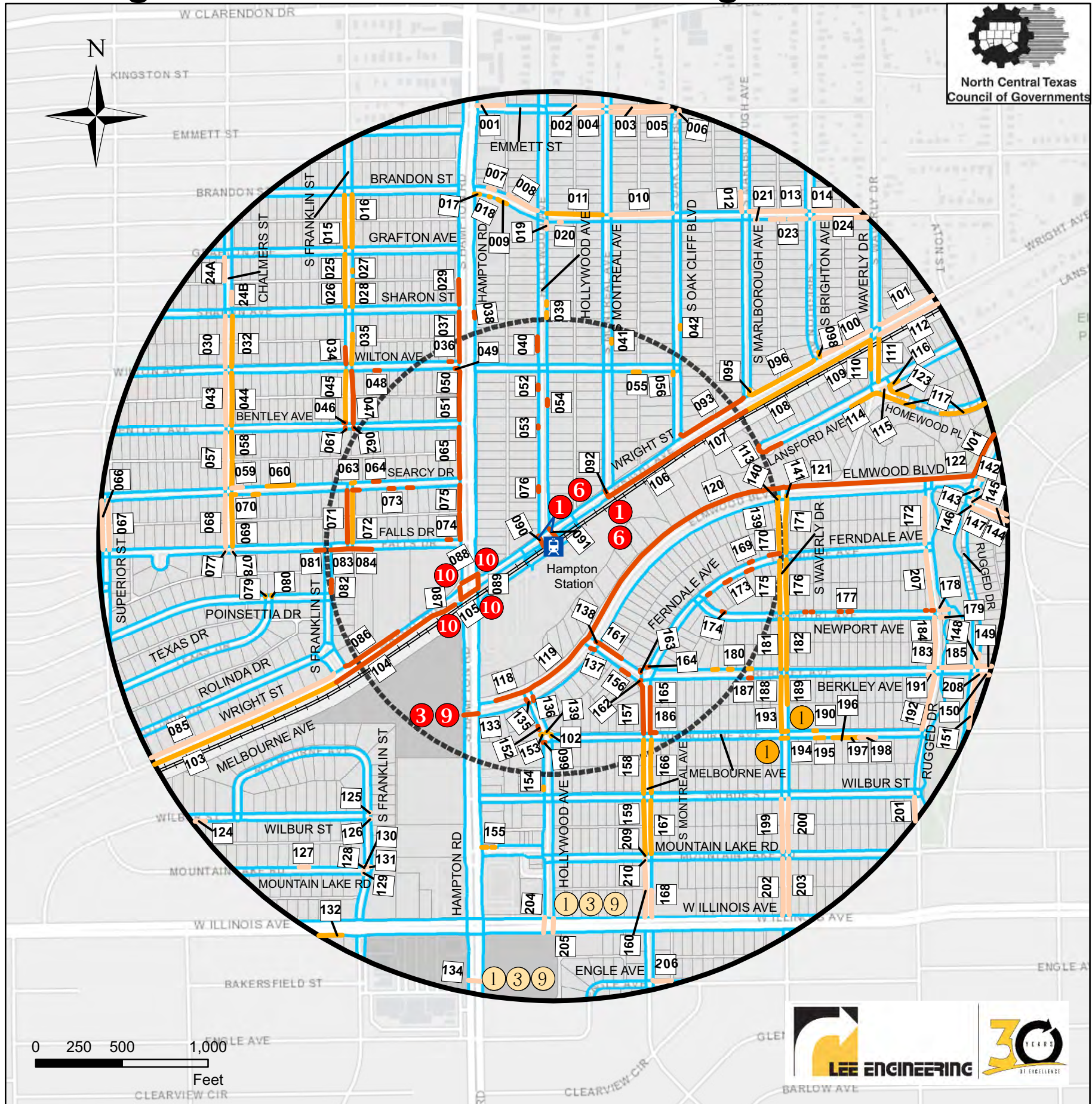
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

	0 - 234
	235 - 1049
	1050 - 2586
	2587 - 5364
	5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

6B-HA-SW-01

- 6A ← Station Number
- HA ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Westmoreland Station August 2020



Figure 6C-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$2,673,000
Medium	\$1,365,200
Low	\$1,405,300
Total	\$5,443,500

- Built by Others
- Gap to Remain

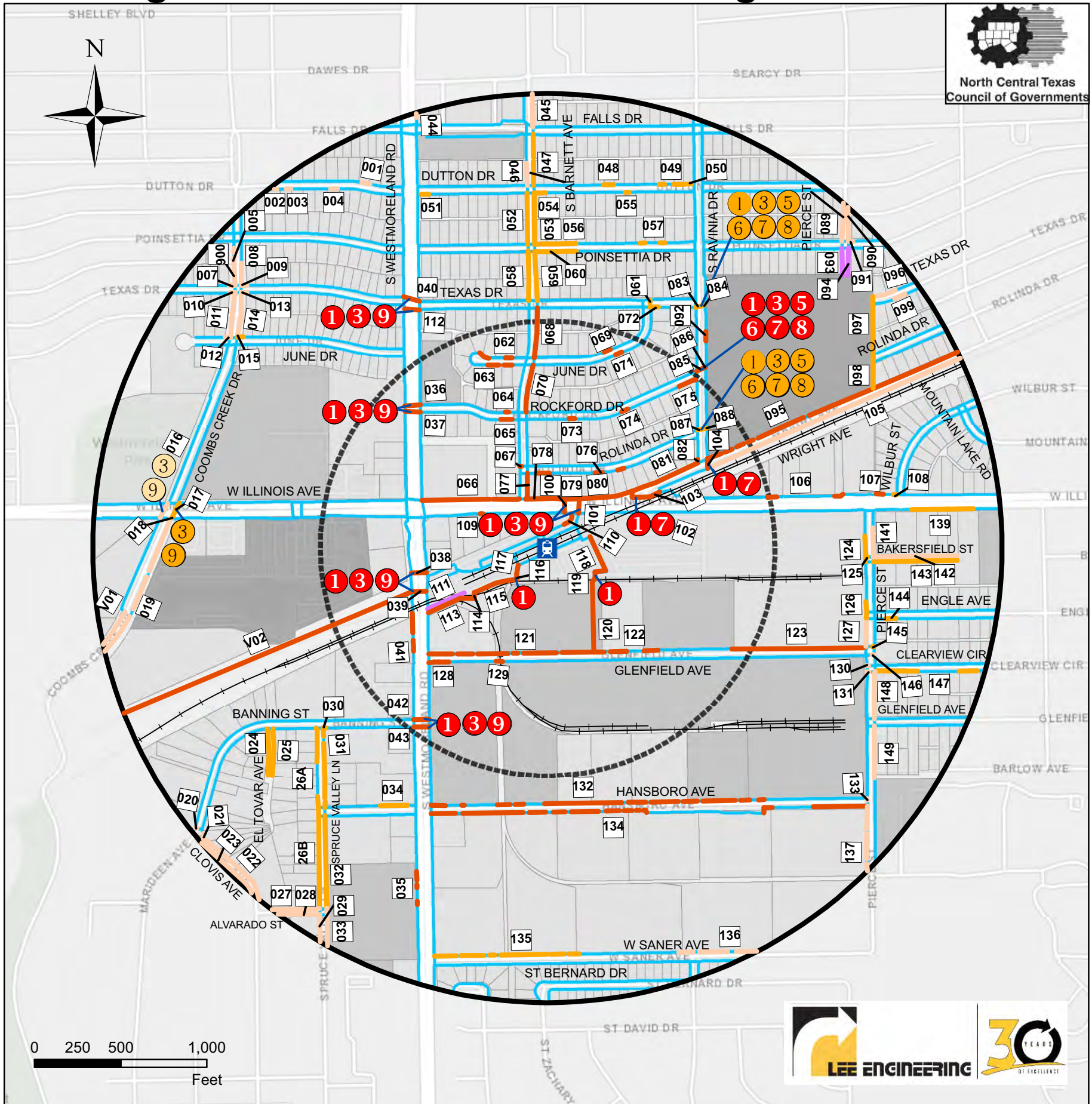
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

6C-WM-SW-01

- 6C ← Station Number
- WM ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.2.15 Illinois Station (Half-Mile Area)

Figure 7A-2.1 on page 107 identifies the recommended improvements in the half-mile area around the Illinois Station. Figures 7A-2.2 and 7A-2.3 on pages 108-109 provide zoomed-in views of two portions of the station area with dense concentrations of improvements. Sidewalk connectivity is very poor in this area. Most streets lack sidewalk on either side, though Illinois Avenue and Denley Drive, two critical links, do have sidewalk along most of their length. S Corinth Street Road is a significant barrier to east-west multi-modal travel due to its width, high speeds, and lack of sidewalk.

In addition to filling the many sidewalk gaps, the more notable recommended improvements include:

- At the intersection of S Corinth Street Road and Louisiana Avenue just northeast of the station, (improvements 7A-IL-CW-309 and 312), the City of Dallas should consider adding a pedestrian hybrid beacon and other supporting improvements. Also consider a road diet from six lanes to four to implement a median refuge area. DART bus stops are located on either side of S Corinth St Rd at this location.
- At the signalized intersection of S Corinth Street Road and the DART Station entrance (improvement 7A-IL-CW-319), the City of Dallas should add a marked crosswalk. Changes to a sloped retaining wall on the east side of the street and/or replacement of the two traffic signal poles on this side with a dual mast arm pole will be needed to make the intersection accessible.
- At the Illinois Avenue crossing of the planned Regional Veloweb shared use path (improvement 7A-IL-CW-176), install a pedestrian hybrid beacon and marked crosswalk with advance pedestrian warning signs, advance yield lines and signing. All recommended work is contingent on construction of the Regional Veloweb shared use path crossing. Consider a road diet so pedestrians only cross two lanes of traffic in each direction.
- At the signalized intersection of S Corinth Street Road and Illinois Avenue, (improvements 7A-IL-CW-266 and 321), the City should add marked crosswalks.
- At the intersection of Lancaster Road with S Corinth Street Road, (improvements 7A-IL-SW/CW-258 through 265), the City should add marked crosswalks across the stop- and yield-controlled approaches, build sidewalk through the adjacent median islands, adjust signing, add streetlighting, and install pedestrian-actuated rectangular rapid flashing beacons (RRFB's). The guardrail protecting the DART rail bridge pier in the median would need to be modified, and structural stone surrounding the pier would need to be regraded to provide sidewalk across the median. Across the east leg, care should be taken to maximize sight distance between pedestrians and drivers around the horizontal curve while making the crosswalk as perpendicular to S Corinth Street Road as possible to minimize the crossing distance. Consider geometric changes to the median island for improved sight distance and reduced speed northbound right turns.

Additional details about these and other improvements recommended in Figures 7A-2.1, 7A-2.2, and 7A-2.3, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Illinois Station that can be found in Appendix I and Appendix J.

3.2.16 Kiest Station (Half-Mile Area)

Figure 7B-2 on page 110 identifies the recommended improvements in the half-mile area around the Kiest Station. Sidewalk connectivity to the residential neighborhoods around this station is fair in some places and poor in others.

Figure 7B-4 shows the recommended improvements in the half-mile area around the Kiest Station. In addition to filling the many sidewalk gaps the exist, recommended improvements include:

- At the intersection of Kiest Boulevard and Frio Drive/Ramona Avenue (improvement 7B-KS-CW-057), the City of Dallas should add missing signs and advance yield lines and signing for this existing signed and marked school crosswalk that crosses a six-lane divided arterial but is not a reduced speed school zone.

The Cedar Crest Trail Regional Veloweb link was recently constructed (completed after field visit) on either side of Kiest Blvd to cross at this crosswalk. It is unclear if additional pedestrian crossing improvements have been made in conjunction with the trail construction. Consider a road diet to implement a median refuge. Give strong consideration to a pedestrian hybrid beacon, especially if a road diet is not implemented. The horizontal curve in Kiest Boulevard at this location heightens the need to make crossing pedestrians and cyclists more visible.

- At the intersection of Kiest Boulevard and Easter Avenue (improvement 7B-KS-CW-058), the City should add advance yield lines and signing for this existing signed and marked school crosswalk that crosses a six-lane divided arterial and is in a 20 mph reduced speed school zone. Consider a road diet to implement a median refuge. Give strong consideration to a pedestrian hybrid beacon, especially if a road diet is not implemented or if a study indicates significant pedestrian demand outside school arrival and dismissal hours.
- At the intersection of Overton Road and Easter Avenue (improvement 7B-KS-CW-124 and 125), the City should add pedestrian warning signs to this existing marked and lit crosswalk. Add yield lines and signing to mitigate risk of dual threat situation for pedestrians. Though Overton Rd has recently been widened from two to four lanes, no median or left turn lanes have been provided for pedestrian refuge at this crossing. Consider a road diet to allow for a median refuge island and/or bike lanes, consistent with the City's bicycle master plan for on-street bike lanes. Add pedestrian-actuated rectangular rapid-flashing beacons (RRFB's) mounted below the pedestrian warning signs.

Additional details about these and other improvements recommended in Figure 7B-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Kiest Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections Illinois Station August 2020



Figure 7A-2.1 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$4,950,800
Medium	\$4,043,600
Low	\$3,476,100
Total	\$12,470,500

- Built by Others
- Gap to Remain

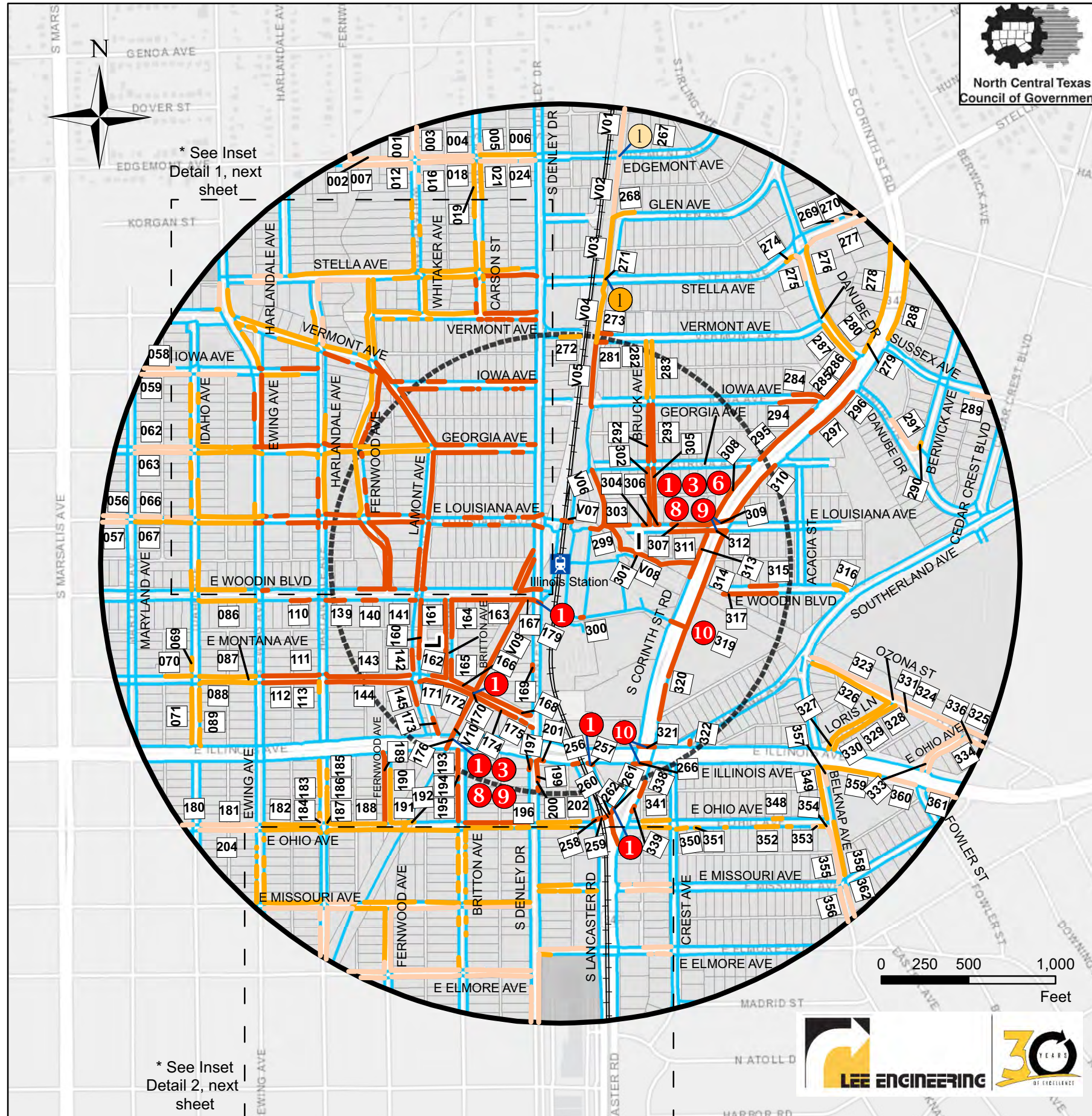
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

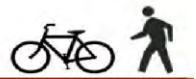
Improvement Code Legend (See Matrix)

7A-IL-SW-01

- 7A ← Station Number
- IL ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches on Map)



**FTA DART Stations
Last Mile Connections
Illinois Station
August 2020**



**Figure 7A-2.2
Construction Packages Inset Detail 1**

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority 1

- High
- Medium
- Low
- Built by Others
- Gap to Remain

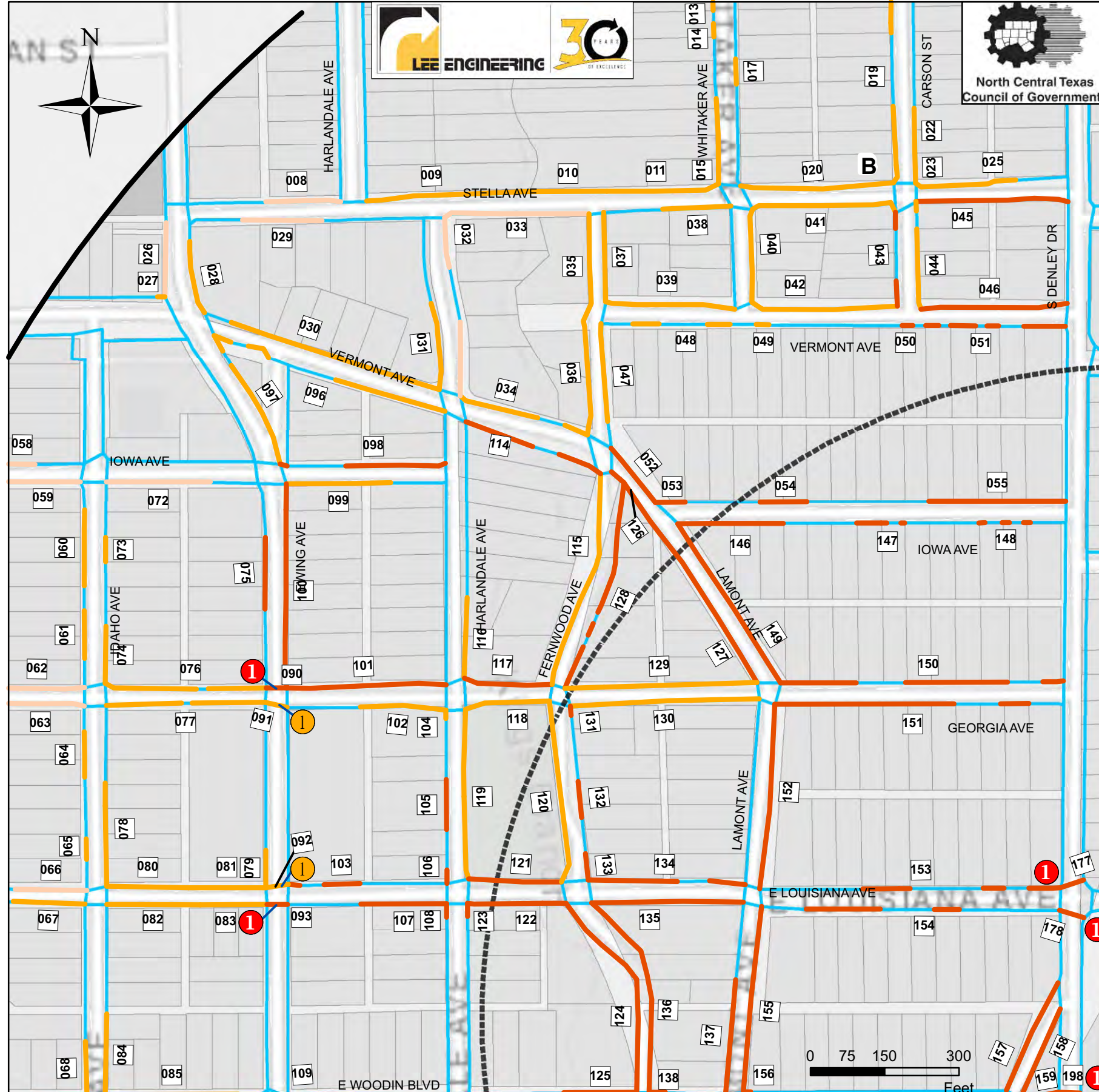
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

7A-IL-SW-01

- 7A ← Station Number
- IL ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

**FTA DART Stations
Last Mile Connections
Illinois Station
August 2020**

**Figure 7A-2.3
Construction Packages Inset Detail 2**



Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

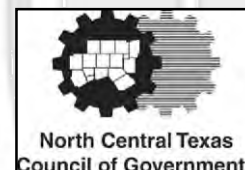
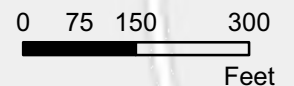
Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

7A-IL-SW-01

7A ← Station Number
IL ← Station Abbreviation
SW ← Sidewalk (or CW for Crosswalk)
01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Kiest Station

August 2020



Figure 7B-2 Construction Packages

Legend

DART Rail Station

Railroad Track

Sidewalk

Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,579,400
Medium	\$3,196,700
Low	\$2,228,400
Total	\$7,004,500

Built by Others

Gap to Remain

Buffers

0.5 Mile Buffer

0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

	0 - 234
	235 - 1049
	1050 - 2586
	2587 - 5364
	5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

7B	← Station Number
KS	← Station Abbreviation
SW	← Sidewalk (or CW for Crosswalk)
01	← Improvement Number (Matches 1 on Map)



3.2.17 VA Medical Center Station (Half-Mile Area)

Figure 7C-2 on page 112 identifies the recommended improvements in the half-mile area around the VA Medical Center Station. Multi-modal access to the main part of the Veterans Administration Hospital campus on the east side of Lancaster Road is good, though several crosswalks lack consistently applied, MUTCD-compliant warning signs. Some sidewalk gaps exist along the hospital vehicular access roads. Sidewalk connectivity to the neighborhood west of Lancaster Road is quite poor, with many sidewalks missing or severely damaged.

The City of Dallas and/or DART should work with the Veterans Administration Hospital to encourage and suggest the illustrated upgrades to crosswalk signing, as well as completion of a few segments of sidewalk. These changes will require the participation of the VA Hospital management.

On City of Dallas streets, notable recommendations in addition to filling sidewalk gaps are:

- At the intersection of Ann Arbor Avenue and Fernwood Avenue (improvements 7C-VA-CW-038 and 039), the City of Dallas should add crosswalk markings and pedestrian ramps to this existing signed but unmarked crosswalk between a church and its parking lot on the opposite side of a 4-lane undivided roadway.
- At the intersection of Ann Arbor Avenue and Denley Drive (improvement 7C-VA-CW-040), the City should consider upgrades to this existing signed and marked school crosswalk near a church and day care center on opposite sides of the street.

At both locations above, consider a road diet to reduce the street width to one lane in each direction, with curb extensions adjacent to on-street parallel parking for the church or a median refuge island if bike lanes planned by the City will replace parking spaces. If four travel lanes are to remain, add advance yield lines and signing at the yield lines. Also consider providing pedestrian-actuated rectangular rapid-flashing beacons (RRFB's).

Additional details about these and other improvements recommended in Figure 7C-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for VA Medical Center Station that can be found in Appendix I and Appendix J.

3.2.18 CityPlace/Uptown Station (Half-Mile Area)

Figure 8A-2 on page 113 identifies the recommended improvements in the half-mile area around the CityPlace/Uptown Station. The area is dense, urban, and very well connected for pedestrians and cyclists, with only a limited number of gaps in the sidewalk network. In addition to filling the limited number of sidewalk gaps, the recommended improvements include:

- For crossing Haskell Avenue at the mid-block locations northeast and east of the station (improvements 8A-CP-CW-031 through 034), the City of Dallas should add crosswalk signing and markings to these crossing locations which already include pedestrian ramps and brick paving in the median. Add advance yield lines and signing. Restrict parking where it blocks visibility and build a curb extension to reduce the crossing distance and improve sight distance. Consider RRFB's to further enhance visibility of crossing pedestrians.

- At the intersection of Haskell Avenue at Lemmon Avenue (improvements 8A-CP-CW-037 and 040-043), the City should provide crosswalks and countdown, accessible pedestrian signals where missing. Consider geometric changes to the intersection to signalize and/or slow the high-speed double right turn lanes from northeast-bound Lemmon Ave to southwest-bound Haskell Ave. Pedestrian-actuated RRFB's might also be considered for crossing the double right-turn movement if geometric changes are infeasible.
- For crossing Haskell Avenue at Munger Avenue (improvement 8A-CP-CW-044), the City should add advance yield lines and signing for the existing signed and marked school crosswalk. Consider pedestrian-actuated RRFB's or a pedestrian hybrid beacon to further enhance the visibility of crossing pedestrians.
- For crossing Lemmon Avenue E at Howell Street (improvement 8A-CP-CW-010), the City should add a marked crosswalk with additional signs and advance yield lines. Construct a pedestrian hybrid beacon to accommodate pedestrian crossings across four lanes of traffic.
- The west leg of Lemmon Avenue at Washington Avenue (improvement 8A-CP-CW-035) has a pedestrian crossing prohibition and lack of crosswalk. The City should reconsider if a single left turn would function adequately instead of double left turns for the northbound approach and/or explore other options to add the west leg crosswalk with countdown, accessible pedestrian signals.
- For crossing Lemmon Avenue at Caddo Street (improvement 8A-CP-CW-036), the City should add advance yield lines and signing for this existing signed and marked school crosswalk. Consider pedestrian-actuated RRFB's or a pedestrian hybrid beacon, particularly if no school crossing guard is present or study indicates pedestrian crossing demand outside school arrival/dismissal hours.
- For crossing Lemmon Avenue at Oak Grove Avenue (improvements 8A-CP-CW-008 and 009), the City should add advance yield lines, signing, and a pedestrian hybrid beacon for this existing signed and marked crosswalk.
- For crossing Blackburn Street at Travis Street (improvements 8A-CP-CW-003 and 004), the City should add pedestrian warning signs and white pavement marking lines outside of existing brickwork that may appear to casual observers to represent crosswalks. Add advance yield lines and signing and consider pedestrian-actuated RRFB's.
- At the crossing of Cole Avenue at Haskell Avenue (improvement 8A-CP-CW-001), a marked and signed crosswalk is already in place across three-lane, one-way street near North Dallas High School. The City should add advance yield lines and signing. Consider curb extensions and pedestrian-actuated RRFB's. Since this section of Cole Avenue will be converting from one-way operation to two-way operation as part of a City project in the near future, it may be possible to incorporate such changes into that project.

Additional details about these and other improvements recommended in Figure 8A-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for CityPlace/Uptown Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections VA Medical Center Station August 2020



Figure 7C-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$2,021,000
Medium	\$2,759,700
Low	\$3,464,300
Total	\$8,245,000

- Built by Others
- Gap to Remain

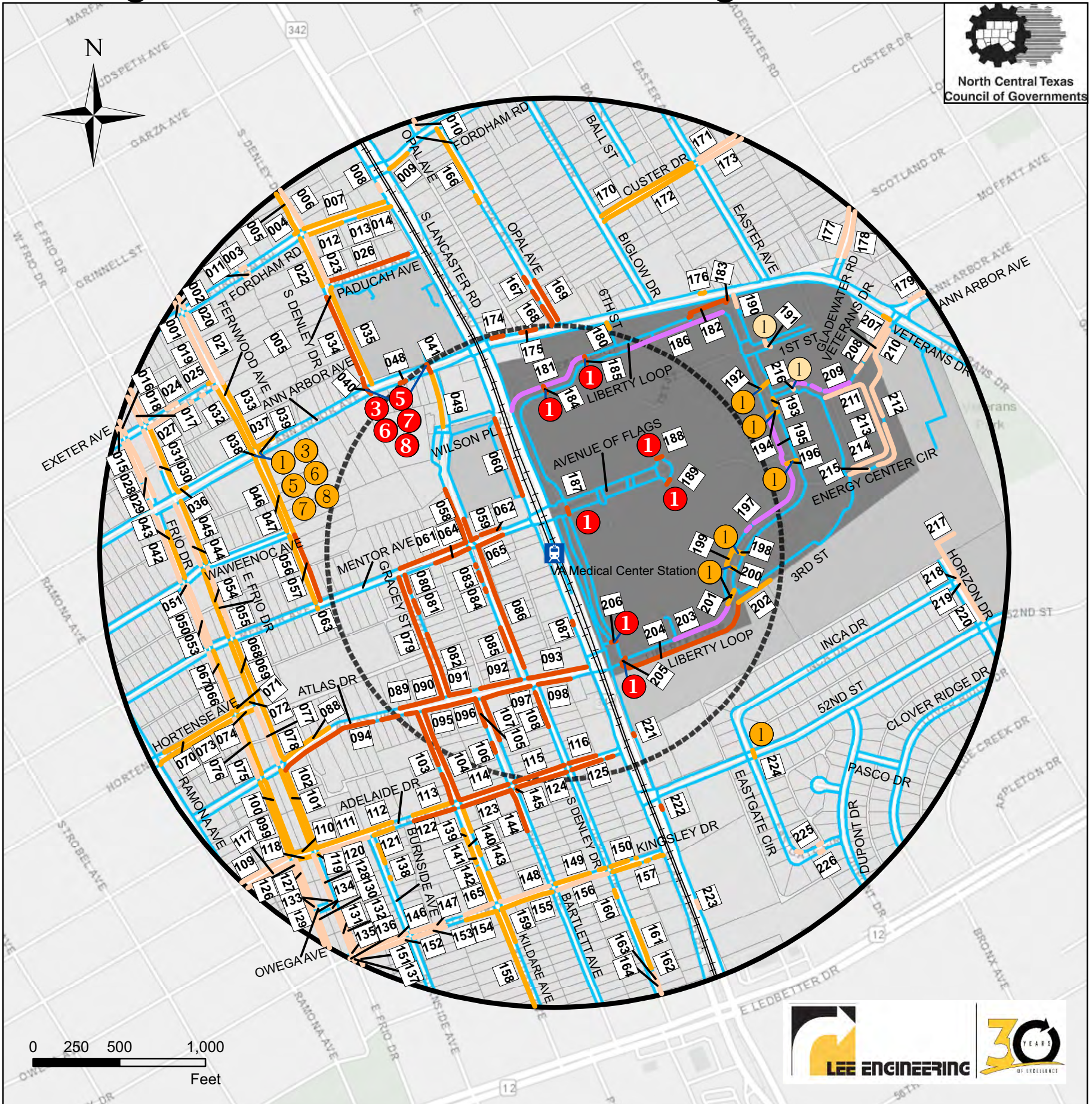
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

7C-VA-SW-01

- 7C ← Station Number
- VA ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Cityplace/Uptown Station August 2020



Figure 8A-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$1,054,100
Medium	\$388,500
Low	\$505,400
Total	\$1,948,000

- Built by Others
- Gap to Remain

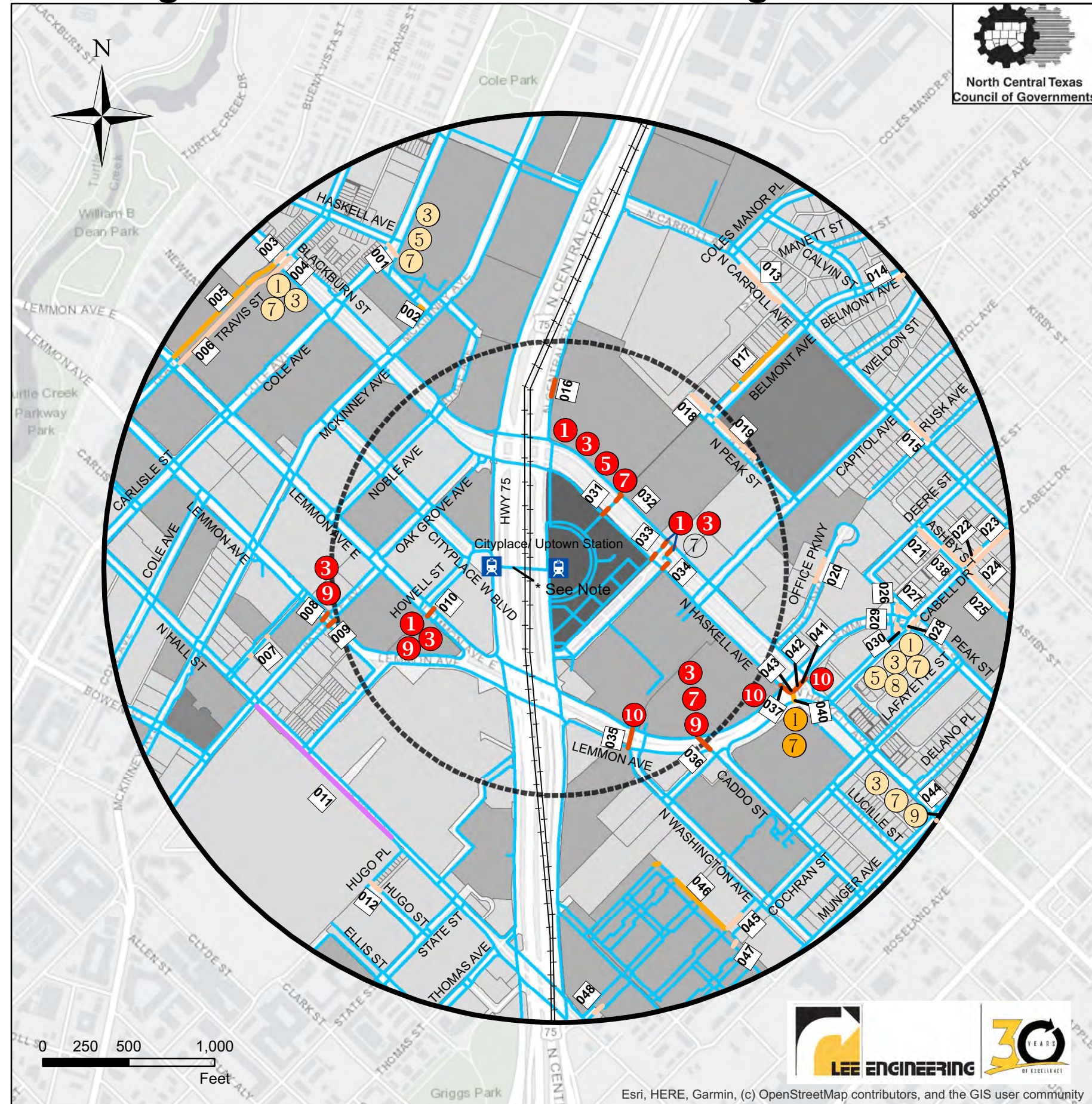
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

* Escalators/elevators to underground station.

Improvement Code Legend (See Matrix)

8A-CP-SW-01

- 8A ← Station Number
- CP ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.2.19 Convention Center Station (Half-Mile Area)

Figure 8B-2 on page 115 identifies the recommended improvements in the half-mile area around the Convention Center Station. The station is well situated for walking trips to and from the Kay Bailey Hutchison Convention Center in which it is housed. Other downtown areas to the north are also well connected to the station. IH-30 and its interchange with IH-35 E form barriers to bicycle and pedestrian travel to and from the south, as do the freight rail lines paralleling Hotel Street.

Several new sidewalk and shared use path improvements to fill existing gaps are programmed along Canton Street and Cadiz Street parallel to IH-30 as part of the IH-30 Canyon project that is under design by the City of Dallas and TxDOT.

It is recommended that the certain pedestrian elements be incorporated into the IH-30 Canyon project at the following locations:

- The segment of Regional Veloweb shared use path planned on the north side of IH-30 between Lamar Street and Hotel Street (improvement 8B-CC-VW-V01) would most likely require a retaining wall and right-of-way or easement acquisition.
- For crossing Hotel Street at the Regional Veloweb shared use path (improvement 8B-CC-CW-021), the project should add a marked crosswalk with lighting, pedestrian warning signs, and advance yield lines and signing.
- Along the north side of IH-30 (and south side of Canton Street) between Akard Street and Griffin Street (improvement 8B-CC-VW-V02), strong consideration should be given to realigning the Regional Veloweb shared use path planned here to the northwest side of Canton Street to avoid the conflict across the two-lane on-ramp to IH 30 westbound. A road diet from three one-way lanes to two one-way lanes on Cantron St would likely be feasible to make way for a shared use path on the north side.
- If the road diet and shared use path realignment described for improvement 8B-CC-VW-V02 above are not feasible, consider a pedestrian hybrid beacon for the south-side crosswalk of the shared use path where it will cross the on-ramp to the IH-30 westbound mainlanes (improvement 8B-CC-CW-024). The beacon should be coordinated with the adjacent traffic signal at Canton Street and Akard Street.

Elsewhere in the half-mile area for this station, recommended improvements include:

- At the mid-block crossing of Marilla Street near the Convention Center entrance (improvement 8B-CC-CW-001), the City should add advance yield lines and signing for the existing crosswalk. Add pushbutton-actuated rectangular rapid flashing beacons (RRFB's). Consider a road diet from four lanes to two lanes to enable a shorter crossing distance and create space for a median refuge island.
- For crossing the south leg of Akard Street at its intersection with Marilla Street (improvement 8B-CC-CW-016), the City should add advance yield lines and signing for the existing crosswalk. Consider adding pushbutton-actuated rectangular rapid flashing beacons (RRFB's) or a pedestrian hybrid beacon, coordinated with adjacent traffic signals.

- For crossing the northeast leg of Canton Street at its intersection with Browder Street (improvement 8B-CC-CW-035), the City should add advance yield lines and signing for the existing crosswalk across a three-lane, one-way street. Add a curb extension to prevent parking in the left-hand lane too close to the crosswalk. Add pushbutton-actuated rectangular rapid flashing beacons (RRFB's) and consider a road diet from three to two lanes.
- For the west leg of the Riverfront Avenue/Cadiz Street intersection (improvement 8B-CC-CW-032), add a marked crosswalk with pedestrian ramps and countdown, accessible pedestrian signals. Remove the pedestrian prohibition against crossing this leg of the intersection. Add protected-only phasing for the left turn from the northbound IH-35E off-ramp to westbound Riverfront Boulevard in conjunction with this change.

Additional details about these and other improvements recommended in Figure 8B-2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Convention Center Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections Convention Center Station August 2020

Figure 8B-2 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$501,300
Medium	\$695,400
Low	\$217,600
Total	\$1,414,300

- Built by Others
- Gap to Remain

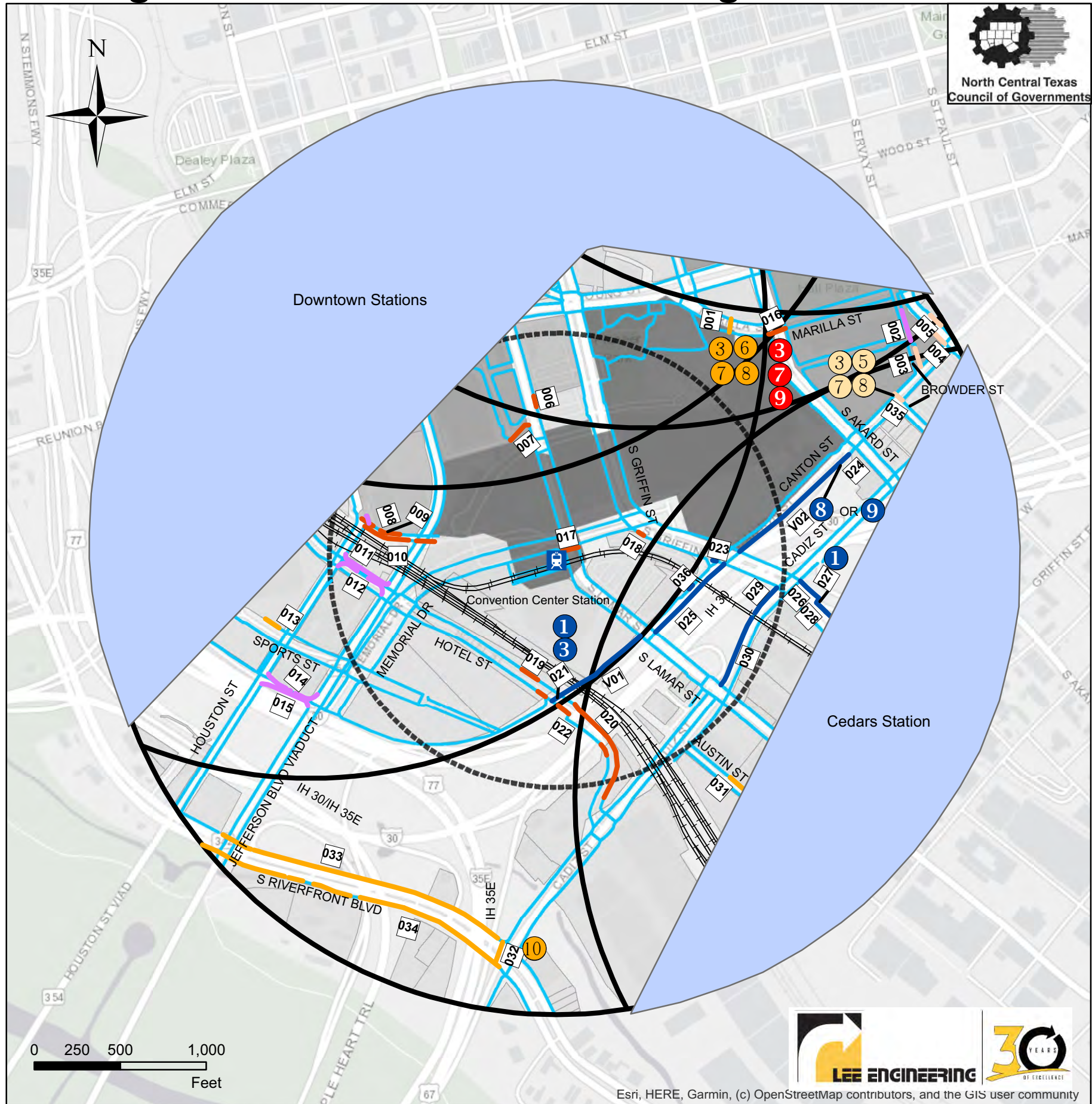
Buffers

- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

8B-CC-SW-01

- 8B ← Station Number
- CC ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)

3.2.20 Cedars Station (Half-Mile Area)

Figure 8C-2.1 on page 117 identifies the recommended improvements in the half-mile area around the Cedars Station. Figure 8C-2.2 on page 118 provides a zoomed-in view of a portion of the station area with dense concentrations of improvements. This station serves a mix of urban residential, commercial and institutional land uses that are relatively well connected via the sidewalk network, though several streets have significant sidewalk gaps.

Several new sidewalk and shared use path improvements to fill existing gaps are programmed along Corsicana Street and Griffin Street parallel to IH-30 as part of the IH-30 Canyon project that is under design by the City of Dallas and TxDOT. The City of Dallas is planning a shared use path as part of the Regional Veloweb along the north side of IH-30, south of Corsicana Street along an alignment that overlaps with the IH-30 Canyon project area.

It is recommended that the certain pedestrian elements be incorporated into the IH-30 Canyon project at the following locations:

- If the future Regional Veloweb shared use path currently planned along Corsicana Street crosses Ervay Street on the southeast leg of their intersection (improvement 8C-CS-CW-01B), the project should add a new signed and marked crosswalk with advance yield lines and signing. Also add pushbutton-actuated rectangular rapid flashing beacons (RRFB's) or a pedestrian hybrid beacon, coordinated with adjacent traffic signals. If adjacent constraints make it difficult to construct sidewalk or shared use path on the south side of Corsicana St, this leg of the intersection may remain without a crosswalk and the crossing built across the northwest leg of the intersection instead (improvement 8C-CS-CW-01A).
- In conjunction with the future Regional Veloweb shared use path currently planned to cross St. Paul Street at this location (improvement 8C-CS-CW-002), add a new crosswalk with advance yield lines and signing. Also add pushbutton-actuated rectangular rapid flashing beacons (RRFB's) or a pedestrian hybrid beacon, coordinated with adjacent traffic signals.

Elsewhere in the half-mile area for Cedars Station, recommended improvements include:

- Crossing Wall Street and Bellevue Street at four locations immediately adjacent to the station (improvements 8C-CS-CW-081, 082, 085, and 094), the City of Dallas should coordinate with DART to add crosswalks with pedestrian ramps, signing, and lighting.
- At the Akard Street crossings at Bellevue Street and Sullivan Drive (improvements 8C-CS-CW-023 and 028), the City of Dallas should add new signed and marked crosswalks. Consider a road diet from four lanes to three lanes and median refuge islands at each location.
- For crossing Lamar Street at Powhattan Street and McKee Street (improvements 8C-CS-CW-092, 095 and 096), the City should add advance yield lines and signing for the existing crosswalks. Consider upgrading with overhead-mounted rectangular rapid flashing beacons (RRFB's) or a pedestrian hybrid beacon.
- At the Ervay Street crossings at Gano Street, McKee Street, and Beaumont Street (improvements 8C-CS-CW-008, 009, 014), the City should add signed and marked crosswalks

where not currently present. The City should also consider a road diet from four lanes to three lanes to build median refuge islands.

- At the southwest end of Bellevue Street at its intersection with Roe Street, a Regional Veloweb shared use path is planned to connect towards the southwest, bridging over the existing Union Pacific Railroad tracks to Riverfront Blvd and the Trinity River trails south of the study area (improvement 8C-CS-VW-V04). This pathway would also provide access to Texas Central Partners' passenger station for high-speed rail between Dallas and Houston, which is proposed for a vacant parcel near the tracks. The shared use path would require right-of-way acquisition and coordination with the multiple parties involved.

Additional details about these and other improvements recommended in Figures 8C-2.1 and 8C-2.2, as well as challenges associated with the recommended gaps to remain, are included in the expanded narrative and matrix notes for Cedars Station that can be found in Appendix I and Appendix J.



FTA DART Stations Last Mile Connections Cedars Station

August 2020

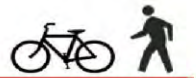


Figure 8C-2.1 Construction Packages

Legend

- DART Rail Station
- Railroad Track

Sidewalk

- Existing Sidewalk/Crosswalk

Proposed Sidewalk/ Crosswalk by Priority

Priority	Construction Cost Estimate
High	\$2,031,400
Medium	\$1,314,600
Low	\$1,406,100
Total	\$4,752,100

- Built by Others
- Gap to Remain

Buffers

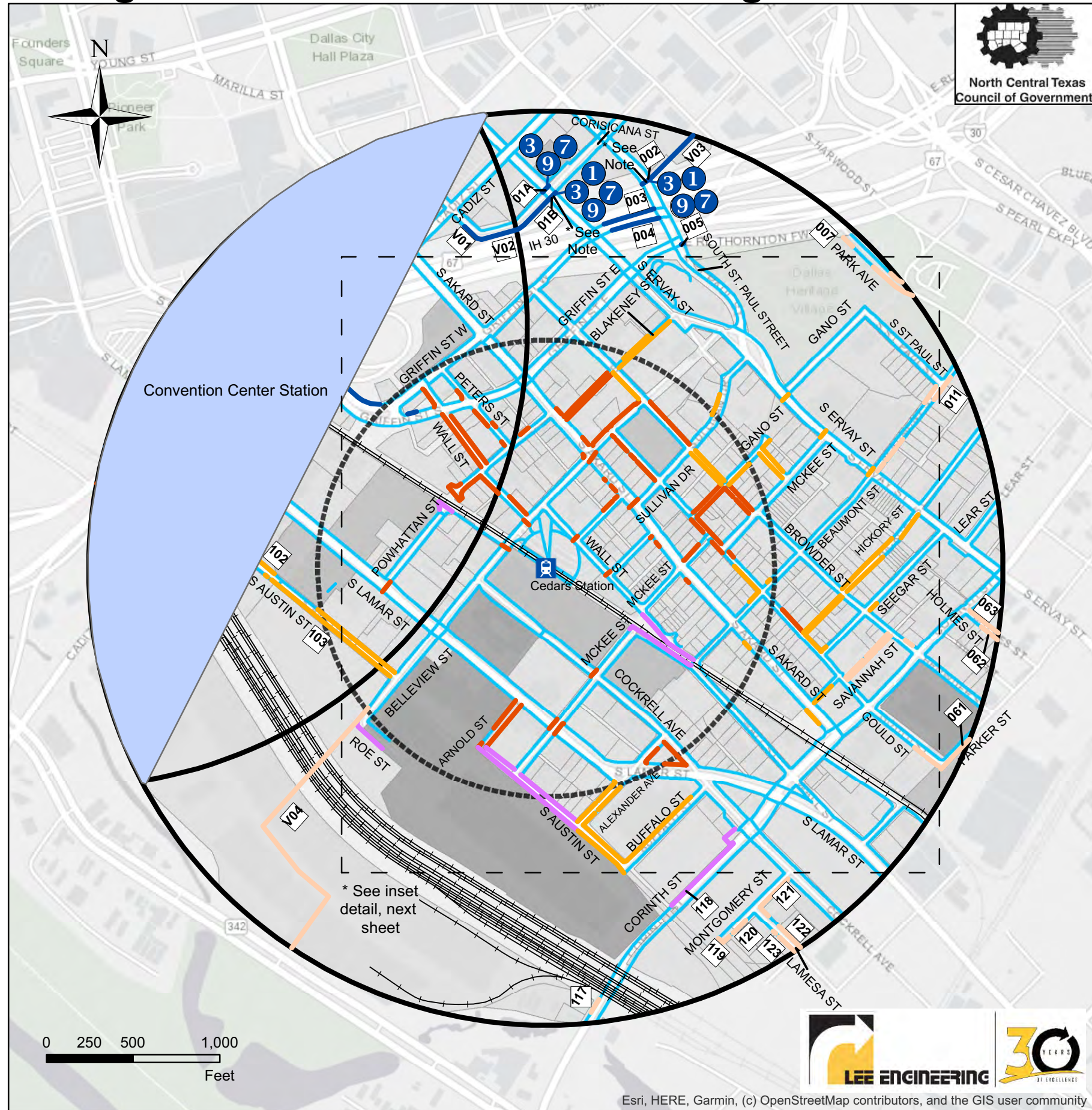
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

0 - 234
235 - 1049
1050 - 2586
2587 - 5364
5365 - 10339

* Need contingent on construction of Regional Veloweb Shared Use Path.



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Description
1	1	1	1	Crosswalk Signs, Markings & Lighting
2	2	2	2	Raised Crosswalk
3	3	3	3	Advance "Yield Here" Sign
4	4	4	4	In-Street Pedestrian Crossing
5	5	5	5	Curb Extension
6	6	6	6	Pedestrian Refuge Island
7	7	7	7	Rectangular Rapid Flashing Beacon
8	8	8	8	Road Diet
9	9	9	9	Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

10	10	10	10	Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
11	11	11	11	Traffic Signal

Improvement Code Legend (See Matrix)

8C-CS-SW-01

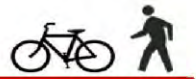
- 8C ← Station Number
- CS ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



FTA DART Stations Last Mile Connections Cedars Station

August 2020

Figure 8C-2.2 Construction Packages Inset Detail



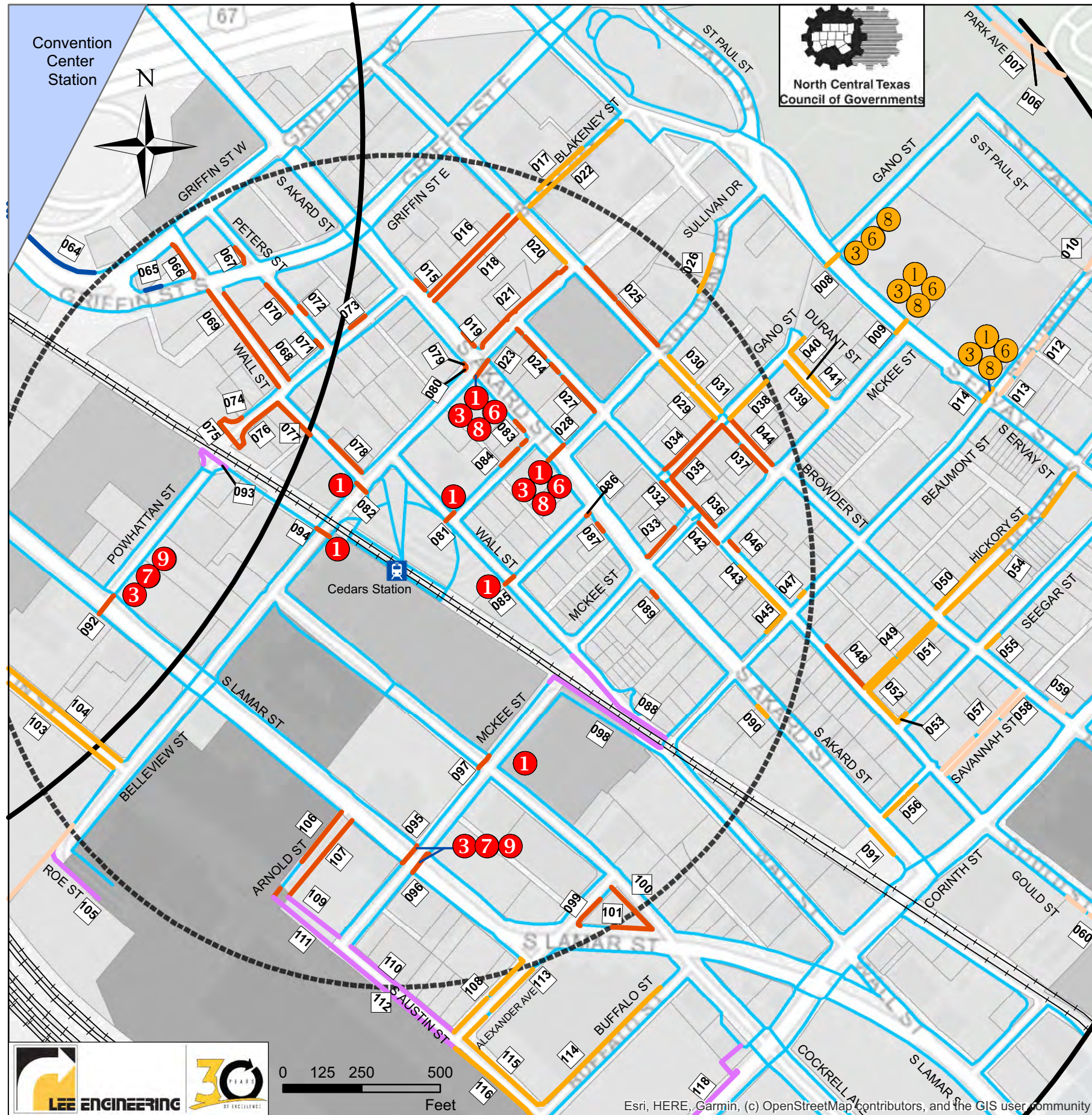
Legend

- DART Rail Station
- Railroad Track
- Sidewalk**
- Existing Sidewalk/Crosswalk
- Proposed Sidewalk/Crosswalk by Priority** 1
- High
- Medium
- Low
- Built by Others
- Gap to Remain
- Buffers**
- 0.5 Mile Buffer
- 0.25 Mile Buffer

Existing Residential and Employment Population (Number of People)

Ppl

- 0 - 234
- 235 - 1049
- 1050 - 2586
- 2587 - 5364
- 5365 - 10339



Possible Pedestrian Safety Countermeasures

Unsignalized Crosswalk Improvements

Hi	Md	Lo	Oth	Countermeasure
				Crosswalk Signs, Markings & Lighting
				Raised Crosswalk
				Advance "Yield Here" Sign
				In-Street Pedestrian Crossing
				Curb Extension
				Pedestrian Refuge Island
				Rectangular Rapid Flashing Beacon
				Road Diet
				Pedestrian Hybrid Beacon

Signalized Crosswalk Improvements

				Add Marked Crosswalks & Provide Countdown, Accessible Pedestrian Signals
				Traffic Signal

Improvement Code Legend (See Matrix)

8C-CS-SW-01

- 8C ← Station Number
- CS ← Station Abbreviation
- SW ← Sidewalk (or CW for Crosswalk)
- 01 ← Improvement Number (Matches 1 on Map)



3.3 Half-Mile Area Opinions of Probable Construction Cost

In addition to the Opinions of Probable Construction Cost (OPCC's) developed for the on-site improvements at DART Stations in Section 3.1, OPCC's were developed for nearly 1,100 separate high-priority improvements totalling nearly 58 linear miles in the half-mile areas surrounding each of the 28 DART stations within the study area.

OPCC's were developed in the half-mile areas for each high-priority improvement that was *not* assumed by City staff to be built by others (as part of another project by a developer, the City, TxDOT, etc.) in the near future. Aggregate OPCC's were developed for low- and medium-priority improvements by extrapolating average costs from the high-priority improvements.

Appendix G details the assumptions that were made in order to provide high-quality, yet preliminary OPCC's. Detailed unit price and quantity estimates for the individual high-priority Phase 1 half-mile area improvements are listed in Appendix K which supplement the OPCC's for the proposed DART property improvements in Dallas provided in Appendix H. A summary of how overall cost estimates for low- and medium-priority Phase 2 and Phase 3 improvements were derived is also included in Appendix K.

The estimated cost of all projects in Dallas is summarized in Table 2.

As shown in Table 2, the total estimate for all improvements in Dallas is about \$101 million. High-priority Phase 1 multi-modal access improvements within the half-mile station areas inside Dallas City limits are estimated to cost about \$40.8 million. Of this total, about \$1.7 million would be the responsibility of DART on its station properties.

Medium- and low- priority costs for Phases 2 and 3 were estimated by developing more generalized unit costs for five types of improvements, based on all high-priority improvements City-wide. Tables 3-22 on pages 120-126 illustrate this procedure.

The first row in each table lists the total linear feet of high-priority sidewalk, sidewalk repair, and Veloweb/shared use path construction City-wide, along with the respective cost totals. It also lists the overall count and cost of crosswalks, classified as simple crosswalks (implemented with signs and markings only) or other crosswalks (which include beacons, islands, or signals). The bottom two rows of each table show how the same unit rates per linear foot or per each crosswalk were used to extrapolate overall cost estimates for the medium- and low-priority improvements without estimating costs for individual locations in those categories.

For reference, the unit price of 5 ft-wide sidewalk alone was assumed at \$35 per linear foot. The all-inclusive price per linear foot of sidewalk improvements (including items such as pedestrian ramps, utility relocation, retaining walls, driveway reconstruction, contingencies, etc.) was calculated for each of the high-priority improvements, ranging between a low of about \$44/LF to a high of about \$6,140/LF. Lower unit costs were associated with simple sidewalk improvements without obstacles, while higher unit costs were associated with wider shared use paths and with higher densities of challenging conditions, especially along short segments.

Table 2: Summary Opinion of Probable Construction Cost for Improvements in Dallas

Station No.	Station Area	DART Station Property	Half-Mile Area			Grand Totals
			High Priority (Phase 1)	Medium Priority (Phase 2)	Low Priority (Phase 3)	
3C	LBJ Central	\$36,200	\$1,300,000	\$400,800	\$307,300	\$2,044,300
3D	Forest Lane	\$15,400	\$1,081,800	\$93,200	\$314,500	\$1,504,900
4A	Walnut Hill	\$214,800	\$607,900	\$1,403,100	\$558,300	\$2,784,100
4B	Park Lane	\$290,300	\$2,440,100	\$1,087,600	\$729,700	\$4,547,700
4C	Lovers Lane	\$95,400	\$369,600	\$238,300	\$61,600	\$764,900
4D	Mockingbird	\$109,500	\$513,400	\$210,600	\$1,565,900	\$2,399,400
4E	LBJ Skillman	\$40,000	\$2,446,200	\$845,400	\$1,216,300	\$4,547,900
4F	White Rock	\$59,400	\$1,232,700	\$2,163,700	\$2,510,100	\$5,965,900
5A	Eighth & Corinth	\$59,200	\$3,536,200	\$1,941,900	\$1,075,900	\$6,613,200
5B	Dallas Zoo	\$72,700	\$3,304,400	\$1,843,000	\$948,800	\$6,168,900
5C	Morrell	\$2,000	\$2,426,200	\$1,615,700	\$1,151,300	\$5,195,200
6A	Tyler Vernon	\$258,300	\$3,790,900	\$4,017,100	\$3,514,900	\$11,581,200
6B	Hampton	\$62,400	\$1,286,200	\$1,705,600	\$1,941,200	\$4,995,400
6C	Westmoreland	\$145,400	\$2,673,000	\$1,365,200	\$1,405,300	\$5,588,900
7A	Illinois	\$34,400	\$4,950,800	\$4,043,600	\$3,476,100	\$12,504,900
7B	Kiest	\$58,800	\$1,579,400	\$3,196,700	\$2,228,400	\$7,063,300
7C	VA Medical Ctr	\$70,800	\$2,021,000	\$2,759,700	\$3,464,300	\$8,315,800
8A	CityPlace/Uptown	\$0	\$1,054,100	\$388,500	\$505,400	\$1,948,000
8B	Convention Ctr	\$0	\$501,300	\$695,400	\$217,600	\$1,414,300
8C	Cedars	\$33,300	\$2,031,400	\$1,314,600	\$1,406,100	\$4,785,400
<i>City of Dallas Totals</i>		<i>\$1,658,300</i>	<i>\$39,146,600</i>	<i>\$31,329,700</i>	<i>\$28,599,000</i>	<i>\$100,733,600</i>

Table 3: Opinion of Probable Construction Cost for LBJ Central Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	8,850	\$ 654,800	-	2,515	\$ 254,400	-	615	\$ 104,500	-	-	-	-	3	\$ 286,300	-	\$ 1,300,000	
Phase 2/ Medium**	-	-	\$ 143	415	\$ 60,600	\$ 146	1,260	\$ 340,200	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 400,800	
Phase 3/ Low**	985	\$ 140,900	\$ 143	20	\$ 3,000	\$ 146	605	\$ 163,400	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 307,300	
	9,835	\$ 795,700		2,950	\$ 318,000		2,480	\$ 608,100		-	-		3	\$ 286,300		\$ 2,008,100	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 4: Opinion of Probable Construction Cost for Forest Lane Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	1,005	\$ 142,300	-	1,350	\$ 206,900	-	2,035	\$ 447,800	-	-	-	-	5	\$ 284,800	-	\$ 1,081,800	
Phase 2/ Medium**	355	\$ 50,800	\$ 143	290	\$ 42,400	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 93,200	
Phase 3/ Low**	2,035	\$ 291,100	\$ 143	160	\$ 23,400	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 314,500	
	3,395	\$ 484,200		1,800	\$ 272,700		2,035	\$ 447,800		-	-		5	\$ 284,800		\$ 1,489,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 5: Opinion of Probable Construction Cost for Walnut Hill Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	3,495	\$ 513,300	-	-	-	-	-	-	-	1	\$ 12,400	-	2	\$ 82,200	-	\$ 607,900	
Phase 2/ Medium**	8,755	\$ 1,252,000	\$ 143	110	\$ 16,100	\$ 146	500	\$ 135,000	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 1,403,100	
Phase 3/ Low**	205	\$ 29,400	\$ 143	-	-	\$ 146	1,635	\$ 441,500	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 558,300	
	12,455	\$ 1,794,700		110	\$ 16,100		2,135	\$ 576,500		1	\$ 12,400		3	\$ 169,600		\$ 2,569,300	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 6: Opinion of Probable Construction Cost for Park Lane Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	15,530	\$ 2,416,000	-	300	\$ 25,400	-	-	-	-	-	-	-	1	\$ 17,800	-	\$ 2,459,200	
Phase 2/ Medium**	7,350	\$ 1,051,100	\$ 143	250	\$ 36,500	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 1,087,600	
Phase 3/ Low**	4,450	\$ 636,400	\$ 143	40	\$ 5,900	\$ 146	-	-	\$ 270	-	-	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 729,700	
	27,330	\$ 4,103,500		590	\$ 67,800		-	-		-	-		2	\$ 105,200		\$ 4,276,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 7: Opinion of Probable Construction Cost for Lovers Lane Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	1,635	\$ 290,400	-	545	\$ 79,200	-	-	-	-	-	-	-	-	-	-	\$ 369,600	
Phase 2/ Medium**	1,055	\$ 150,900	\$ 143	-	-	\$ 146	-	-	\$ 270	-	-	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 238,300	
Phase 3/ Low**	420	\$ 60,100	\$ 143	10	\$ 1,500	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 61,600	
	3,110	\$ 501,400		555	\$ 80,700		-	-		-	-		1	\$ 87,400		\$ 669,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 8: Opinion of Probable Construction Cost for Mockingbird Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	1,020	\$ 490,100	-	5	\$ 17,400	-	-	-	-	1	\$ 5,900	-	-	-	-	\$ 513,400	
Phase 2/ Medium**	1,130	\$ 161,600	\$ 143	175	\$ 25,600	\$ 146	-	-	\$ 270	2	\$ 23,400	\$ 11,692	-	-	\$ 87,387	\$ 210,600	
Phase 3/ Low**	7,025	\$ 1,004,600	\$ 143	920	\$ 134,400	\$ 146	610	\$ 164,700	\$ 270	-	-	\$ 11,692	3	\$ 262,200	\$ 87,387	\$ 1,565,900	
	9,175	\$ 1,656,300		1,100	\$ 177,400		610	\$ 164,700		3	\$ 29,300		3	\$ 262,200		\$ 2,289,900	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 9: Opinion of Probable Construction Cost for LBJ Skillman Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	16,895	\$ 1,553,300	-	825	\$ 76,000	-	2,800	\$ 563,700	-	-	-	-	1	\$ 253,200	-	\$ 2,446,200	
Phase 2/ Medium**	5,070	\$ 725,100	\$ 143	225	\$ 32,900	\$ 146	-	-	\$ 270	-	-	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 845,400	
Phase 3/ Low**	8,505	\$ 1,216,300	\$ 143	-	\$-	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 1,216,300	
	30,470	\$ 3,494,700		1,050	\$ 108,900		2,800	\$ 563,700		-	-		2	\$ 340,600		\$ 4,507,900	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 10: Opinion of Probable Construction Cost for White Rock Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	11,010	\$ 1,214,800	-	135	\$ 10,900	-	-	-	-	-	-	-	2	\$ 7,000	-	\$ 1,232,700	
Phase 2/ Medium**	12,625	\$ 1,805,400	\$ 143	1,775	\$ 259,200	\$ 146	-	-	\$ 270	1	\$ 11,700	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 2,163,700	
Phase 3/ Low**	11,765	\$ 1,682,400	\$ 143	5,070	\$ 740,300	\$ 146	-	-	\$ 270	-	-	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 2,510,100	
	35,400	\$ 4,702,600		6,980	\$ 1,010,400		-	-		1	\$ 11,700		4	\$ 181,800		\$ 5,906,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 11: Opinion of Probable Construction Cost for Eighth & Corinth Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	9,695	\$ 1,252,200	-	205	\$ 24,200	-	1,475	\$ 1,516,800	-	-	-	-	5	\$ 795,500	-	\$ 3,588,700	
Phase 2/ Medium**	12,645	\$ 1,808,300	\$ 143	915	\$ 133,600	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 1,941,900	
Phase 3/ Low**	6,500	\$ 929,500	\$ 143	115	\$ 16,800	\$ 146	480	\$ 129,600	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 1,075,900	
	28,840	\$ 3,990,000		1,235	\$ 174,600		1,955	\$ 1,646,400		-	-		5	\$ 795,500		\$ 6,606,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 12: Opinion of Probable Construction Cost for Dallas Zoo Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$25,715,700	\$143	20,665	\$3,012,500	\$146	12,715	\$3,432,300	\$270	24	\$280,600	\$11,692	79	\$6,903,500	\$87,387	\$39,344,600	***
Phase 1/ High*	15,440	\$3,047,000	-	835	\$257,400	-	-	-	-	-	-	-	-	-	-	\$3,304,400	
Phase 2/ Medium**	10,325	\$1,476,500	\$143	2,510	\$366,500	\$146	-	-	\$270	-	-	\$11,692	-	-	\$87,387	\$1,843,000	
Phase 3/ Low**	5,430	\$776,500	\$143	1,180	\$172,300	\$146	-	-	\$270	-	-	\$11,692	-	-	\$87,387	\$948,800	
	31,195	\$5,300,000		4,525	\$796,200		-	-		-	-		-	-		\$6,096,200	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 13: Opinion of Probable Construction Cost for Morrell Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$25,715,700	\$143	20,665	\$3,012,500	\$146	12,715	\$3,432,300	\$270	24	\$280,600	\$11,692	79	\$6,903,500	\$87,387	\$39,344,600	***
Phase 1/ High*	9,390	\$1,606,500	-	2,065	\$283,500	-	670	\$100,600	-	-	-	-	6	\$435,600	-	\$2,426,200	
Phase 2/ Medium**	10,335	\$1,478,000	\$143	150	\$21,900	\$146	105	\$28,400	\$270	-	-	\$11,692	1	\$87,400	\$87,387	\$1,615,700	
Phase 3/ Low**	7,790	\$1,114,000	\$143	255	\$37,300	\$146	-	-	\$270	-	-	\$11,692	-	-	\$87,387	\$1,151,300	
	27,515	\$4,198,500		2,470	\$342,700		775	\$129,000		-	-		7	\$523,000		\$5,193,200	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 14: Opinion of Probable Construction Cost for Tyler Vernon Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$25,715,700	\$143	20,665	\$3,012,500	\$146	12,715	\$3,432,300	\$270	24	\$280,600	\$11,692	79	\$6,903,500	\$87,387	\$39,344,600	***
Phase 1/ High*	19,815	\$3,238,200	-	1,205	\$200,200	-	770	\$160,500	-	1	\$51,400	-	3	\$267,000	-	\$3,917,300	
Phase 2/ Medium**	22,760	\$3,254,700	\$143	1,210	\$176,700	\$146	1,175	\$317,300	\$270	8	\$93,600	\$11,692	2	\$174,800	\$87,387	\$4,017,100	
Phase 3/ Low**	17,935	\$2,564,800	\$143	685	\$100,100	\$146	235	\$63,500	\$270	-	-	\$11,692	9	\$786,500	\$87,387	\$3,514,900	
	60,510	\$9,057,700		3,100	\$477,000		2,180	\$541,300		9	\$145,000		14	\$1,228,300		\$11,449,300	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 15: Opinion of Probable Construction Cost for Hampton Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	9,190	\$ 866,200	-	880	\$ 110,900	-	270	\$ 23,800	-	-	-	-	8	\$ 285,300	-	\$ 1,286,200	
Phase 2/ Medium**	10,170	\$ 1,454,400	\$ 143	1,560	\$ 227,800	\$ 146	-	-	\$ 270	2	\$ 23,400	\$ 11,692	-	-	\$ 87,387	\$ 1,705,600	
Phase 3/ Low**	11,520	\$ 1,647,400	\$ 143	815	\$ 119,000	\$ 146	-	-	\$ 270	-	-	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 1,941,200	
	30,880	\$ 3,968,000		3,255	\$ 457,700		270	\$ 23,800		2	\$ 23,400		10	\$ 460,100		\$ 4,933,000	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 16: Opinion of Probable Construction Cost for Westmoreland Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	9,140	\$ 971,900	-	890	\$ 152,500	-	1,820	\$ 177,100	-	-	-	-	13	\$ 1,371,500	-	\$ 2,673,000	
Phase 2/ Medium**	6,845	\$ 978,900	\$ 143	850	\$ 124,100	\$ 146	-	-	\$ 270	-	-	\$ 11,692	3	\$ 262,200	\$ 87,387	\$ 1,365,200	
Phase 3/ Low**	7,810	\$ 1,116,900	\$ 143	380	\$ 55,500	\$ 146	215	\$ 58,100	\$ 270	-	-	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 1,405,300	
	23,795	\$ 3,067,700		2,120	\$ 332,100		2,035	\$ 235,200		-	-		18	\$ 1,808,500		\$ 5,443,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 17: Opinion of Probable Construction Cost for Illinois Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	17,570	\$ 2,883,700	-	5,085	\$ 716,600	-	2,260	\$ 337,500	-	9	\$ 92,500	-	10	\$ 920,500	-	\$ 4,950,800	
Phase 2/ Medium**	22,590	\$ 3,230,400	\$ 143	4,185	\$ 611,100	\$ 146	575	\$ 155,300	\$ 270	4	\$ 46,800	\$ 11,692	-	-	\$ 87,387	\$ 4,043,600	
Phase 3/ Low**	14,465	\$ 2,068,500	\$ 143	660	\$ 96,400	\$ 146	605	\$ 163,400	\$ 270	1	\$ 11,700	\$ 11,692	13	\$ 1,136,100	\$ 87,387	\$ 3,476,100	
	54,625	\$ 8,182,600		9,930	\$ 1,424,100		3,440	\$ 656,200		14	\$ 151,000		23	\$ 2,056,600		\$ 12,470,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 18: Opinion of Probable Construction Cost for Kiest Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	10,070	\$ 1,383,200	-	1,525	\$ 196,200	-	-	-	-	-	-	-	-	-	-	\$ 1,579,400	
Phase 2/ Medium**	16,680	\$ 2,385,300	\$ 143	4,200	\$ 613,200	\$ 146	-	-	\$ 270	2	\$ 23,400	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 3,196,700	
Phase 3/ Low**	13,635	\$ 1,949,900	\$ 143	630	\$ 92,000	\$ 146	-	-	\$ 270	1	\$ 11,700	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 2,228,400	
	40,385	\$ 5,718,400		6,355	\$ 901,400		-	-		3	\$ 35,100		4	\$ 349,600		\$ 7,004,500	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 19: Opinion of Probable Construction Cost for VA Medical Center Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	12,450	\$ 1,527,400	-	1,520	\$ 310,100	-	-	-	-	7	\$ 33,100	-	2	\$ 150,400	-	\$ 2,021,000	
Phase 2/ Medium**	16,380	\$ 2,342,400	\$ 143	1,100	\$ 160,600	\$ 146	-	-	\$ 270	7	\$ 81,900	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 2,759,700	
Phase 3/ Low**	14,740	\$ 2,107,900	\$ 143	750	\$ 109,500	\$ 146	-	-	\$ 270	2	\$ 23,400	\$ 11,692	14	\$ 1,223,500	\$ 87,387	\$ 3,464,300	
	43,570	\$ 5,977,700		3,370	\$ 580,200		-	-		16	\$ 138,400		18	\$ 1,548,700		\$ 8,245,000	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 20: Opinion of Probable Construction Cost for CityPlace/Uptown Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	160	\$ 30,500	-	-	-	-	-	-	-	-	-	-	11	\$ 1,023,600	-	\$ 1,054,100	
Phase 2/ Medium**	2,105	\$ 301,100	\$ 143	-	-	\$ 146	-	-	\$ 270	-	-	\$ 11,692	1	\$ 87,400	\$ 87,387	\$ 388,500	
Phase 3/ Low**	3,120	\$ 446,200	\$ 143	405	\$ 59,200	\$ 146	-	-	\$ 270	-	-	\$ 11,692	-	-	\$ 87,387	\$ 505,400	
	5,385	\$ 777,800		405	\$ 59,200		-	-		-	-		12	\$ 1,111,000		\$ 1,948,000	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



Table 21: Opinion of Probable Construction Cost for Convention Center Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	1,715	\$ 262,300	-	105	\$ 11,600	-	-	-	-	-	-	-	2	\$ 227,400	-	\$ 501,300	
Phase 2/ Medium**	3,640	\$ 520,600	\$ 143	-	-	\$ 146	-	-	\$ 270	-	-	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 695,400	
Phase 3/ Low**	120	\$ 17,200	\$ 143	175	\$ 25,600	\$ 146	-	-	\$ 270	-	-	\$ 11,692	2	\$ 174,800	\$ 87,387	\$ 217,600	
	5,475	\$ 800,100		280	\$ 37,200		-	-		-	-		6	\$ 577,000		\$ 1,414,300	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.

Table 22: Opinion of Probable Construction Cost for Cedars Station Half-Mile Area

Phase/ Priority	Sidewalks			Sidewalk Repairs			Veloweb/ Shared Use Paths			Simple Crosswalks			Other Crosswalks (with Beacon, Island or Signal)			Total Cost	
	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	Lin. Ft	Cost	~\$/LF	#	Cost	~\$/EA	#	Cost	~\$/EA		
High Priority (All Dallas)	180,005	\$ 25,715,700	\$ 143	20,665	\$ 3,012,500	\$ 146	12,715	\$ 3,432,300	\$ 270	24	\$ 280,600	\$ 11,692	79	\$ 6,903,500	\$ 87,387	\$ 39,344,600	***
Phase 1/ High*	5,930	\$ 1,371,600	-	675	\$ 79,100	-	-	-	-	5	\$ 85,300	-	5	\$ 495,400	-	\$ 2,031,400	
Phase 2/ Medium**	6,430	\$ 919,500	\$ 143	910	\$ 132,900	\$ 146	-	-	\$ 270	-	-	\$ 11,692	3	\$ 262,200	\$ 87,387	\$ 1,314,600	
Phase 3/ Low**	3,195	\$ 456,900	\$ 143	105	\$ 15,400	\$ 146	1,840	\$ 496,800	\$ 270	-	-	\$ 11,692	5	\$ 437,000	\$ 87,387	\$ 1,406,100	
	15,555	\$ 2,748,000		1,690	\$ 227,400		1,840	\$ 496,800		5	\$ 85,300		13	\$ 1,194,600		\$ 4,752,100	

* High priority cost opinions are based on field visits and bid item breakdowns, but without the benefit of survey, subsurface utility investigation, or other engineering information typically available for semi-final design.

** Medium- and low-priority cost opinions are not based on individual improvements, but instead extrapolated from cost/linear foot calculations for high-priority improvements; actual costs may vary significantly, especially for crosswalk improvements.

*** Costs for all Dallas include costs attributed to DART and others in calculating average costs per unit length or crosswalk, and therefore do not match the total value shown in Table 2.



APPENDICES

APPENDIX A: Field Work Dates

APPENDIX B: Data Collection Maps & Forms

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	

APPENDIX C: Crosswalk Improvement Evaluation Details

APPENDIX D: Crosswalk Improvement Selection Tables

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	

APPENDIX E: Half-Mile Area Improvement Prioritization – Initial Trial Methodology Details

APPENDIX F: Half-Mile Area Improvement Prioritization – Final Methodology Details

APPENDIX G: Cost Estimating Details

APPENDIX H: Estimated Quantities & Opinions of Probable Construction Cost – Station Property Improvements

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	

APPENDIX I: Half-Mile Area Recommendation Details & Detailed Improvement Mapping

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	

APPENDIX J: Half-Mile Improvement Matrices

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	



APPENDIX K: Estimated Quantities & Opinions of Probable Construction Cost –
Half-Mile Improvements

LBJ Central Station	White Rock Station	Illinois Station
Forest Lane Station	Eighth & Corinth Station	Kiest Station
Walnut Hill Station	Dallas Zoo Station	VA Medical Center Station
Park Lane Station	Morrell Station	CityPlace/Uptown Station
Lovers Lane Station	Tyler Vernon Station	Convention Center Station
Mockingbird Station	Hampton Station	Cedars Station
LBJ Skillman Station	Westmoreland Station	

