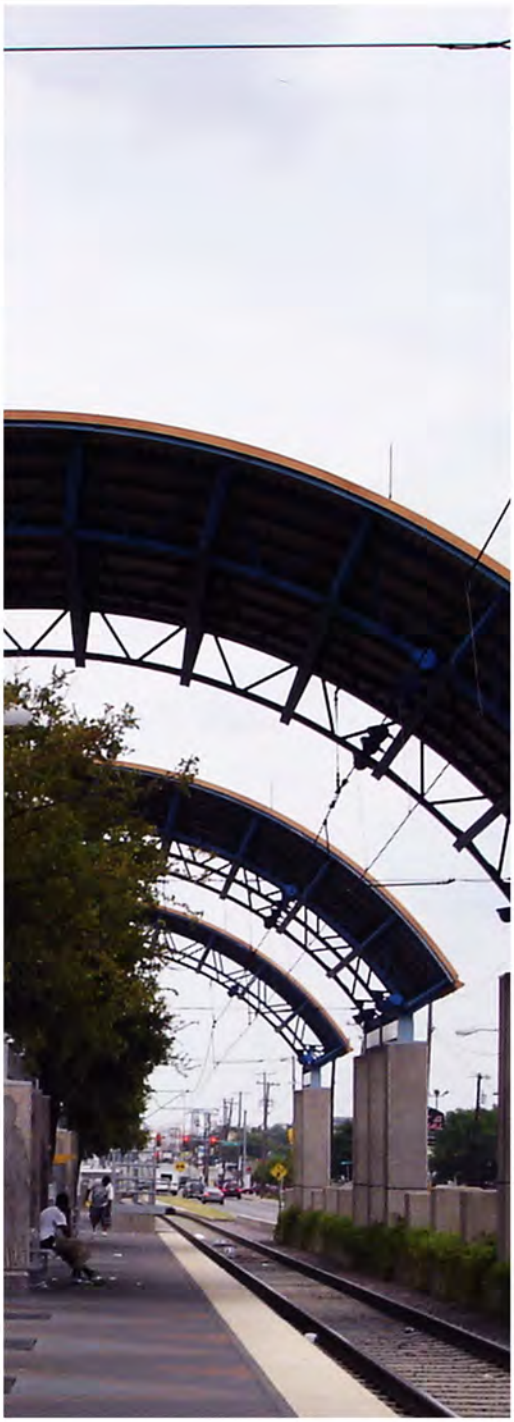

NORTH CENTRAL TEXAS
COUNCIL OF
GOVERNMENTS

CITY OF DALLAS

LANCASTER CORRIDOR

JUNE 2012

What is NCTCOG?

The North Central Texas Council of Governments is a voluntary association of cities, counties, school districts, and special districts which was established in January 1966 to assist local governments in **planning** for common needs, **cooperating** for mutual benefit, and **coordinating** for sound regional development.

It serves a 16-county metropolitan region centered around the two urban centers of Dallas and Fort Worth. Currently the Council has **240 members**, including 16 counties, 170 cities, 24 independent school districts, and 30 special districts. The area of the region is approximately **12,800 square miles**, which is larger than nine states, and the population of the region is over **6.5 million**, which is larger than 38 states.

NCTCOG's structure is relatively simple; each member government appoints a voting representative from the governing body. These voting representatives make up the **General Assembly** which annually elects a 15-member Executive Board. The **Executive Board** is supported by policy development, technical advisory, and study committees, as well as a professional staff of 315.

NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

North Central Texas Council of Governments
P. O. Box 5888
Arlington, Texas 76005-5888
(817) 640-3300

NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Texas Department of Transportation and the U. S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration.

NORTH CENTRAL TEXAS
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LANCASTER CORRIDOR

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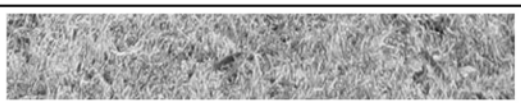

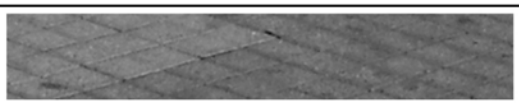

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LANCASTER CORRIDOR PROJECT

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Appendix

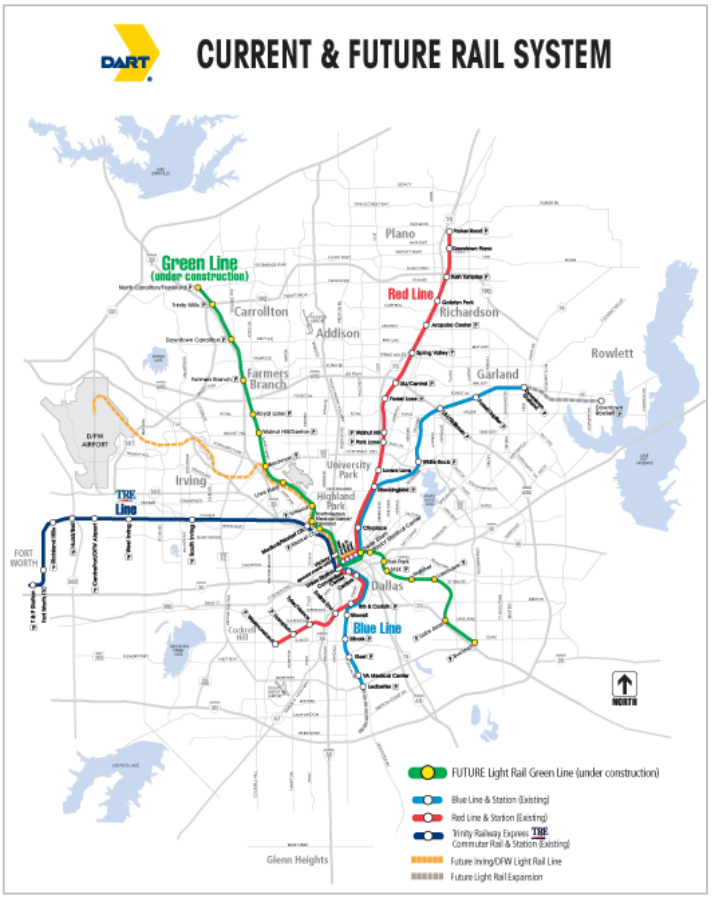
1. INTRODUCTION

The Lancaster Corridor Project is part of the North Central Texas Council of Governments' (NCTCOG) Transit-Oriented Development (TOD) Implementation Group. Planning assistance for the TOD Implementation Group is intended to support a regional effort to analyze, market, and implement TOD. The TOD Implementation Group developed from the results of the 2005-2006 NCTCOG Sustainable Development Call for Projects. Projects in this group are eligible to receive planning assistance from NCTCOG Transportation Department Staff.

The Lancaster Corridor Project was prepared to provide planning assistance to the City of Dallas. The goal of this plan is to document existing conditions and examine potential redevelopment opportunities along the stations in the Lancaster Corridor to incorporate TOD. This report focuses on four light rail stations in the Lancaster Corridor along the Dallas Area Rapid Transit (DART) Blue Line which include Illinois, Kiest, VA Medical Center, and Ledbetter. The study will focus predominately on a one-quarter mile parameter around each station and the connections between, although a one-half mile parameter is also noted when appropriate. This document is solely intended as planning guidance – it is not a guarantee that any recommendations will be implemented.

The City of Dallas is the third largest city in Texas, according to the 2010 U.S. Census Bureau estimates. The 2010 population is estimated to be 1,197,816. It is primarily located in Dallas County in the eastern side of NCTCOG's metropolitan planning area. Dallas is a member city of DART. DART provides light rail services throughout the city, (Exhibit 1-1) as well as local and express bus, paratransit, HOV lanes, and vanpool services. The Trinity Railway Express (TRE), a partnership between DART and the Fort Worth Transportation Authority (the T), provides commuter rail to and from the City of Dallas.

Exhibit 1-1: DART Light Rail System



Zoomed-in version of the Lancaster Corridor.

Much of the existing development currently around the Lancaster Corridor stations is best described as Transit-Adjacent Development (TAD). TADs are within walking distance, typically defined as a one-quarter to one-half mile radius of the transit station, but the development has not been influenced by the benefits that are associated with transit. TADs typically offer very limited benefits because they are not geared toward capturing pedestrian activity but are very much centered on automobile travel. This does not indicate that pedestrian activity is not possible. However, such activity is very constrained due to the limited or lack of pedestrian-oriented design such as a building entrance not oriented to access from the sidewalk, and parking between the sidewalk and the building door entrance. Transit-oriented development, on the other hand, is often focused on building an environment which captures pedestrian activities such as shopping, living, working, and playing without the dependence on the automobile to

move around the nearby destinations. The current TAD in the Lancaster Corridor has prevented the rail system to be used to its fullest capacity due to the existing low-level density development. TOD strives to achieve more dense development, which can increase the ridership, economic, environment, and health benefits. Stations on the northern section of the rail line have or are in the process of implementing TOD, which is a contrast to how the stations along the Lancaster Corridor have developed or not developed. Downtown Plano and Mockingbird stations are examples of northern stops along the DART lines where TOD has successfully been implemented. Current developments along the Lancaster Corridor stations do not contain a mix of uses or high density residential dwelling units, all of which are typically needed to encourage a pedestrian environment and higher use of the transit system.

Understanding the vision of the type of system or projects that can be created is important in the decision making process. Below are general guidelines for what constitutes a TOD and what benefits there are for a community.

What Is Transit-Oriented Development?

There are various measures and terminology to define TOD. In general, NCTCOG defines TOD as a style of land planning and building orientation that is geared towards encouraging pedestrian activity resulting from the passenger rail station. The boundary of a TOD can extend from at least a one-quarter to one-half mile radius around the passenger rail station depending on the walkability of the area. The main forms of development present in the boundary are ideally mixed-use and are designed to encourage people to bike and/or walk from the station and surrounding area to the development. A network of roadways, bike lanes, and sidewalks connect the developments to the station. The density of the development is moderate to high, relative to each community.

TOD Facilitators

- Regional population and economic growth: Area should have enough population to support the development, as well as be economically viable.

- Housing demand: Development should be located in an area that is already experiencing a large demand for housing, or is projected to experience an increase in households in the future.
- Appropriate zoning and land use policies: Multi-family, mixed-use zoning produces favored results, as well as coordinated regional land use transportation planning.
- Appropriate parking requirements[i]: Parking management strategies includes rightsizing the demand for parking at a TOD. The trips generated by the use of transit, walking and biking can reduce the need of an automobile, which can result in reduced parking requirements.
- Community support: It is important to have the support of the community in order for the development to be successful.
- Long-term regional planning process: An extensive regional plan for the surrounding area of the development is beneficial in order to maximize its success.
- Public sector involvement or public-private partnerships: Government involvement is beneficial throughout implementation.
- Developer tax/permitting/financing incentives and density bonuses: Developer incentives for high density structures.

Features of a successful TOD include:

- A multi-modal experience with vehicular, bicycle, pedestrian, and transit modes of travel.
- Mixes of land uses aimed at reducing vehicle miles traveled by promoting pedestrian activity in the TOD area. This can be achieved by including retail that is needed for everyday living such as a grocery store, post office, restaurants, public space, and entertainment with office and housing.
- The community should create a unique sense of place (i.e. theme, artwork, character, etc).
- Development should be oriented to the street, the pedestrian, and the human scale. Buildings should have architectural features such as windows, balconies, and porches that create safe, functional, and interesting walking environments. The streets should contain street furniture and street art.

Benefits of a TOD:

- Decreasing traffic congestion by allowing destinations (i.e. employment, entertainment, daily needs) to be reached from the station through other non-motorized modes by having the appropriate infrastructure such as sidewalks and bike lanes in place. TOD commuters typically use transit two to five times more than other commuters in the region.[ii]
- Providing housing alternatives for singles, young professionals, and empty-nesters/retirees that may have modified housing needs.[iii] These demographic groups may not need or want to live in large lot single-family homes and/or have the desire to own a vehicle, therefore living in apartments, condominiums, townhomes or small single-family homes near a train station would be a preferred housing option.
- Reducing household spending on transportation by increasing the use of transit for commute and therefore reducing the amount of driving.
- Driving less by commuting via transit reduces the vehicle emissions that would otherwise be released, therefore having more people ride transit can help improve air quality.
- Utilizing land more efficiently by maximizing the use of public infrastructure where those amenities can be shared by a higher density of people on a smaller scale of land as opposed to developing infrastructure further out in a region where less people utilize the amenities.
- Reducing sprawl by utilizing TOD as a strategy to entice more development in inner-ring communities, those closest to the downtown, to better compete with sprawling communities on the city's outer edge.[iv] Cervero stated in TCRP Report 74: Costs of Sprawl – 2000 that contiguous, compact development [which is how TOD is mainly composed] could save the U. S. nearly 25 million acres of land – much of it agricultural and environmentally sensitive – over the next 25 years.
- Promoting a healthier lifestyle with opportunities for more walking and bicycling, if the proper infrastructure is in place, can help to reduce driving (shorter trips and/or option of driving shorter distances) and lead to less stress.
- Creating better places to live, work, and play by making neighborhoods a more desirable place to dwell. According to Brooke Ahlquist, MA, MPH from the Statewide Health Improvement Program

of Minnesota, “Health problems are influenced by societal policies and environments that in some way either sustain behaviors or fail to foster healthier choices.” TOD’s strive to create a walkable environment which could lead to various health benefits such as reduce stress from driving, improve air quality, and encourage physical activity (walking, biking), etc.

Challenges to TOD:

- Existing development and uses that may be incompatible with more dense development.
- Competing values such as open space, housing affordability, neighborhood compatibility may limit infill development.
- Assembling land to provide for more development.
- Cost of land may be higher near transit.
- Cost of vertical development is more expensive than single-story development.
- Revitalization without displacement of businesses or residents.
- Misconception from neighborhoods regarding multi-family housing and/or density.
- Parking placement, right-sizing parking demand and making parking development more compact is more costly.
- Transportation connections locally and regionally which provide access to key destinations and reduce the need for automobile travel.
- Changing the current zoning to more pedestrian-oriented development.
- Local government’s commitments to TOD.
- Timeframe for an area to be able to sustain developments (e.g. higher housing density, mixed-use development, commercial, retail etc.) that are encouraged around the train station.

TOD offers many benefits to a community. The Victoria Transport Policy Institute (VTPI) has compared TOD locations to waterfront property; both are valuable and scarce resources. VTPI describes railway station surroundings as the “shop window” of a town, a place where many people see what the community has to offer. This highlights another importance for making stations and their immediate surroundings attractive and inviting. Dallas has already set the framework for how the area can reach its

full potential and the following is a highlight of the recommendations for the area from the City of Dallas Comprehensive Plan.

Existing Policy, Financing, and Land Use Conditions

forwardDallas! Comprehensive Plan

The forwardDallas! Comprehensive Plan was adopted by the Dallas City Council in June 2006. The Plan contains the goals and aspirations of how the City envisions the community to be developed. The Comprehensive Plan is made of four parts: Vision, Policy Plan, Implementation Plan, and the Monitoring Program. The Monitoring Program will not be summarized in this section. The recommendations in the Plan impact the various aspects of development in the City, however only those recommendations that specifically pertain to the Lancaster Corridor or TOD in the Plan will be highlighted in this section.

The Vision

The Vision is a part of the Plan that includes the concepts, ideals, and goals residents have for the future of Dallas. Core values were identified for which proposals and recommendations would be built on for the Vision. Investment in the southern sector is among the core values. Investment would lead to the improvement of the southern sector as jobs, infrastructure, and other opportunities in this area would arise. Common themes were identified for the Vision using the core values as a framework. Capitalizing on the existing and proposed transit centers is among the common themes. An increase in jobs and housing near DART stations would encourage full utilization of the DART system and provide desirable housing choices. Overall the Vision emphasizes the need to promote household and job growth in the southern sector and around DART stations.

The Vision also categorized general land use patterns into Building Blocks. The Building Blocks are intended to show where certain types and densities of development might occur. Transit Center/Multi-Modal Corridors are the Building Blocks that surround the DART light rail or commuter rail stations. Transit Centers are recommended to contain a mix of uses such as employment, retail, cultural facilities and housing. Housing development transitions could include multi-story residential above retail, to

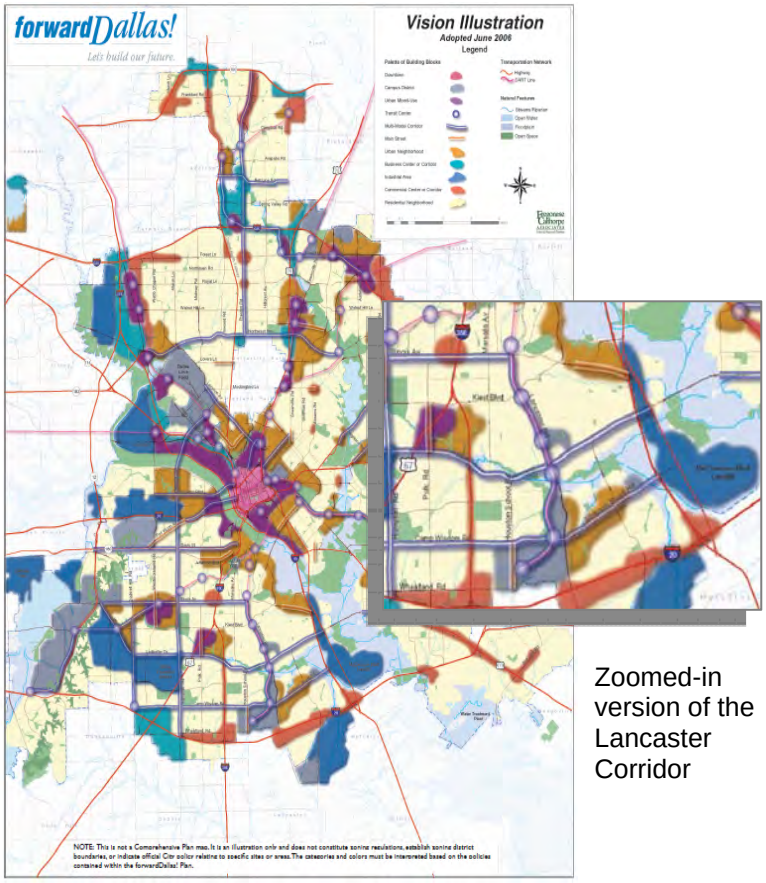
townhomes, to single-family residences. The Plan also cautions that areas currently containing single-family or duplex residential units should be maintained unless redevelopment is addressed through an Area Planning process. The VA Medical Center Station not only falls into the Transit Center/Multi-Modal Building Block, but into a Campus Building Block as well. Campus Building Blocks are designated for areas around large master-planned educational, institutional or business facilities outside the downtown area. The plan calls for a variety of amenities to be included in the Campus Building Block such as offices, shops, services and open space in order to support the major campus employer and area residents. Work is underway to implement the Vision for the VA Medical Center Station.

Policy Plan

While the Vision of forwardDallas! provides an overview of a preferred future for the City of Dallas, the Policy Plan provides the framework to help achieve the vision. The Policy Plan provides the tools and structures needed to create or enhance the Building Blocks of the Vision. The Lancaster Corridor is considered part of the Multi-Modal Corridor Building Block (Exhibit 1-2).

"Multi-Modal Corridors can serve a variety of areas that do not necessarily support a mix of land uses, but accommodate some form of public transit within or adjacent to the right-of-way and focus on enhanced pedestrian and bicycle access to transit."

Exhibit 1-2: ForwardDallas! Vision Illustration



Zoomed-in version of the Lancaster Corridor

The Policy Plan states that the transition of development (scale, density, intensity) in the multi-modal corridors surrounding the transit station should respect the existing single-family neighborhoods. A gradual change in building height and landscaping will be necessary to transition from existing residential neighborhoods to active transit hubs. Housing for Multi-Modal Corridors *could include* low- to mid-rise apartments and condominiums, townhomes and small single-family homes. Transit access could be enhanced to existing single-family neighborhoods by providing improvements to pedestrian and bicycle connections.

The VA Medical Center is a Campus Building Block and according to the Policy Plan it can include a range of single-family and multi-family housing and a variety of offices, shops, and services. The appropriate transition to nearby residential areas will need to be made. Housing for Campus Building

Blocks *should transition* from low-rise apartments, condominiums, and townhouses to single-family homes.

Implementation Projects

The Implementation Plan provides ways to evaluate the strategies and policies included in the Policy Plan. Implementation Projects are one of two components of the Implementation Plan; Action Plans being the other. Implementation Projects are composed of programs to address larger policy issues that can affect growth and development in the City. Listed below are programs that could have an impact on the zoning around the Lancaster Corridor.

- Market-Tested, Mixed-Use and Transit-Oriented Development Zoning

  This program calls for a more effective mixed-use zoning code that fosters TOD. The process has typically been to approve zoning for TOD; the City would require the use of Planned Development (PD) districts when zoning for TOD. Each PD has individual standards and regulations making it hard to duplicate in other areas and therefore making development review and code enforcement cumbersome. Anticipated outcomes of the program are implementation of a form-based mixed-use zoning code that is predictable and objective in establishing transit stations and districts as part of the mixed-use zoning code. The Dallas City Council adopted the Form Districts ordinance in February 2009. No specific area was designated by this ordinance as a form district; developers now have the option of applying for form-based zoning through this ordinance. Approval for a Form District will require that a zoning application be submitted for its specific area.

- Transit-Oriented Development Pilot Projects

  The program would be a coordinated effort between the City and DART to select areas around transit stations in which the zoning and land use standards would be adjusted to attract businesses and housing. The City would study the market conditions and neighborhood needs to ensure the success of the project.

- Parking Standards

  Current parking requirements may be supplying more parking than is warranted. The program requires that new parking requirements be established to reflect demand. Lower parking requirements can lead to encourage infill and redevelopment projects. Parking management strategies including shared parking are encouraged to be implemented.

Area Plans are also another part of Implementation Plans. Area Plans cover between 200 to 2,000 acres and contain an outline of the work to be completed. The Lancaster Corridor is one of the Area Plans. The Corridor has a declining commercial area with established neighborhoods and good traffic. The work outlined for this Plan will highlight potential opportunities and also barriers to redevelopment. When the study is complete, the next step is the creation of a redevelopment strategy with an overarching vision and a detailed plan of land use including a phased plan of action that highlights the areas with the greatest potential for redevelopment.

Action Plans

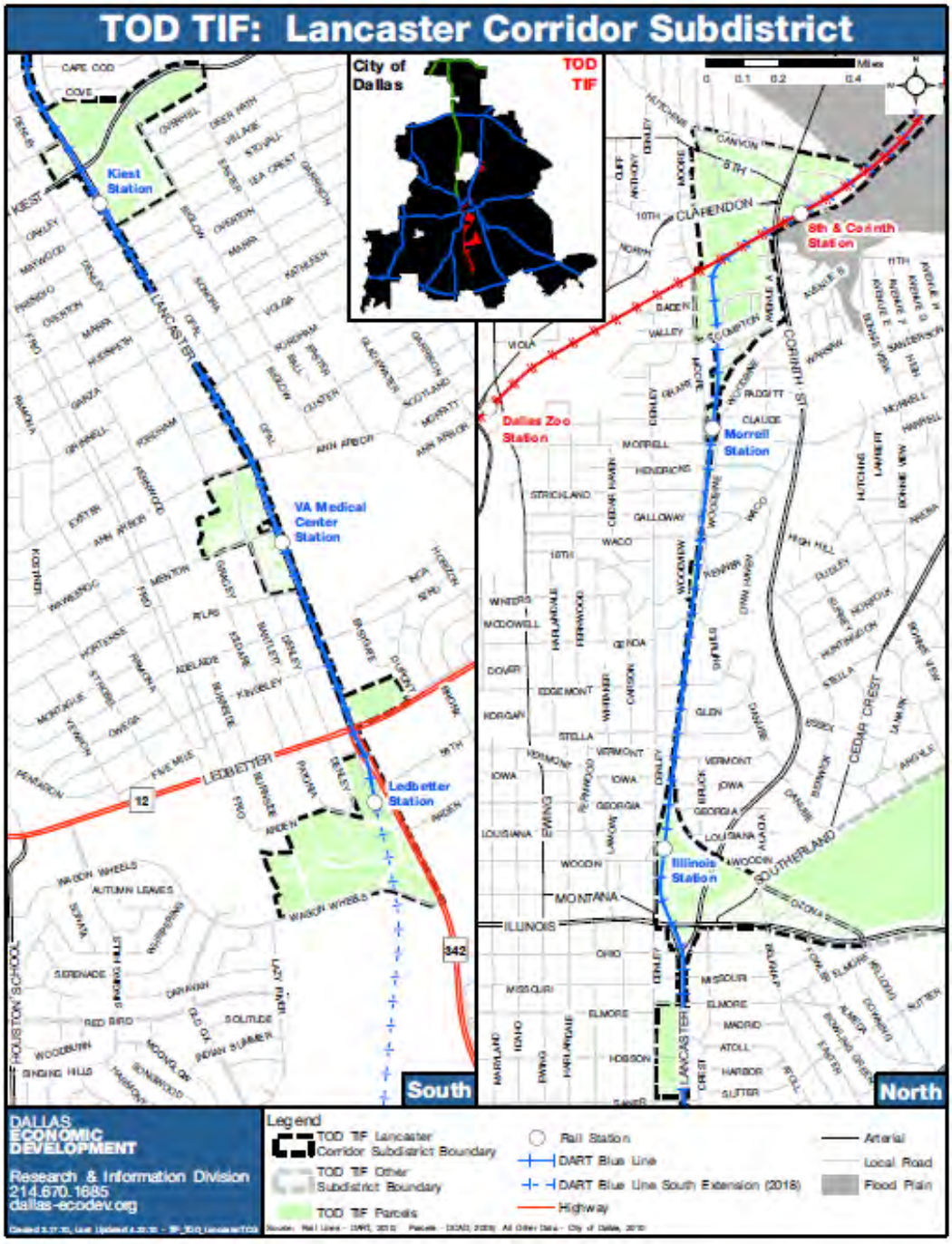
Action Plans are the second component of the Implementation Plan. Action Plans are composed of priority projects to be accomplished in the near term (one to two years). Development Code Amendments are among one of the projects included in the Action Plans. Development of new TOD zoning districts was recommended as a new zoning tool to be built to achieve the goals in forwardDallas! The TOD zoning districts were recommended to include development that provides a mix of uses for a variety of densities ranging from low, suitable for single-family residential neighborhoods, to high, suitable for urban high-rise mixed uses for Downtown. Elements that have been recommended to be considered when forming the TOD zoning districts are form-based codes, building types, effect of zoning and parking on floor area ratio, and developing four mixed-use zones which could be applied to a variety of densities. The City has also begun looking at possible funding mechanisms to support the implementation of new development or redevelopment in the area. There is already innovative planning that is underway and making a difference through the process outlined below.

TOD Tax Increment Financing District Project Plan And Reinvestment Zone Financing Plan

The City of Dallas implemented a TOD Tax Increment Financing (TIF) District along several locations around the DART light rail stations which includes the Illinois Station, Crest Shopping Center area, Kiest Station, VA Medical Center Station, and Ledbetter Station (Exhibit 1-3). The TIF began on January 1, 2009 and is scheduled to terminate on December 31, 2038. The TIF District has goals and objectives that are aimed to encourage the redevelopment of underutilized properties in the selected locations into dense, pedestrian-friendly TODs. TIF District policies include requirements for those developments that utilize TIF funds and the most notable ones for the Lancaster corridor include:

1. Twenty percent of housing units must meet the City and County's affordable housing requirement.
2. Compliance with Fair Share Guidelines for private construction and promotion of hiring neighborhood residents for permanent jobs created.

Exhibit 1-3: TOD TIF Lancaster Corridor



Highlights of transit-related improvements that the City wishes to accomplish with the TIF plan include the following:

Illinois Station

- Underutilized properties to be redeveloped into a high-density urban area.
- Loans or grants may become available to spur desired development on the east side of the rail station.
- Pedestrian connectivity improvements from the redevelopments to the station and the Cedar Crest Golf Course.

Crest Shopping Center

- Underutilized properties to be redeveloped into higher density, mixed-use center which could be accessed via the Illinois or Kiest Stations.
- Future station amenities, should a station be located nearby.
- Way finding to the Illinois and Kiest Stations, upgrading infrastructure, and public art.

Kiest Station

- Higher density of residential development.
- Pedestrian connectivity improvements to the Lancaster-Kiest Shopping Center.
- Streetscape for Lancaster Road.
- Public art and increased covered waiting area for transit patrons.

VA Medical Center Station

- Increase residential development.
- Improvements to the station to include pedestrian amenities, streetscape improvements, and infrastructure improvements.

Ledbetter Station

- Increase residential development.
- Improve urban, pedestrian-friendly development near the station such as including pedestrian connectivity improvements to current and future developments, streetscape for major roadways, public art, and increase covered waiting areas for riders.

Tax increment sharing from the northern stations, Mockingbird/Lovers Lane Sub-District, to the southern stations, Lancaster Corridor, is permitted. Additionally, the type of development that is encouraged is often benefited from zoning that is still considered non-traditional. The City has set up Form Districts that can help guide redevelopment through the process where once funding is secured, what that redevelopment will look like when it's built.

Form Districts

Form Districts were approved by the City Council in February 2009, City Code's Chapter 51A Article 13: Form Districts with the purpose to provide support for implementing the goals set forth in forwardDallas! The Form District Article is composed of form-based code which is an alternative to the conventional zoning. Form-based codes focus on the form of the building rather than the use. The Form District Article contains regulations on setback, building height, building elements, etc. Images and pictures are shown throughout the Form District Article to illustrate the various regulations. Four types of districts have been established: Walkable Urban Mixed Use (WMU), Walkable Urban Residential (WR), Residential Transition (RTN), and Shopfront Overlay (SH). Exhibit 1-4 outlines the different types of development allowed in the districts. Walkable Urban Mixed Use and Walkable Urban Residential each have low, medium and high intensities. Exhibit 1-5 outlines the maximum height for the WMU, WR, and RTN districts.

Exhibit 1-4: Development Type By District

District	Mixed Use Shopfront (Mu)	Single-Story Shopfront (Ss)	General Commercial (Gc)	Apartment (Apt)	Townhouse Stacked (Ts)	Townhouse (Th)	Manor House (Mh)	Single-Family House (Sf)	Civic Building (Civ)	Open Space Lot (O)
Walkable Urban Mixed Use (WMU)										
Low (WMU-3, WMU-5)	■	■	■	■	■	■	■		■	■
Medium (WMU-8, WMU-12)	■		■	■	■	■			■	■
High (WMU-20, WMU-40)	■		■	■					■	■
Walkable Urban Residential (WR)										
Low (WR-3, WR-5)				■	■	■	■		■	■
Medium (WR-8, WR-12)				■	■	■			■	■
High (WR-20, WR-40)				■					■	■
Residential Transition (RTN)						■	■	■	■	■
Shopfront (-SH) Overlay over any WMU or WR district	■	■							■	■

Source: Chapter 51A Article 13: Form Districts

Exhibit 1-5: Maximum District Height

Intensity	District	Height in Stories (max)	Height in Feet (max)
LOW	RTN	2½	35
	WMU-3, WR-3	3½	50
	WMU-5, WR-5	5	80
MEDIUM	WMU-8, WR-8	8	125
	WMU-12, WR-12	12	180
HIGH	WMU-20, WR-20	20	300
	WMU-40, WR-40	40	600

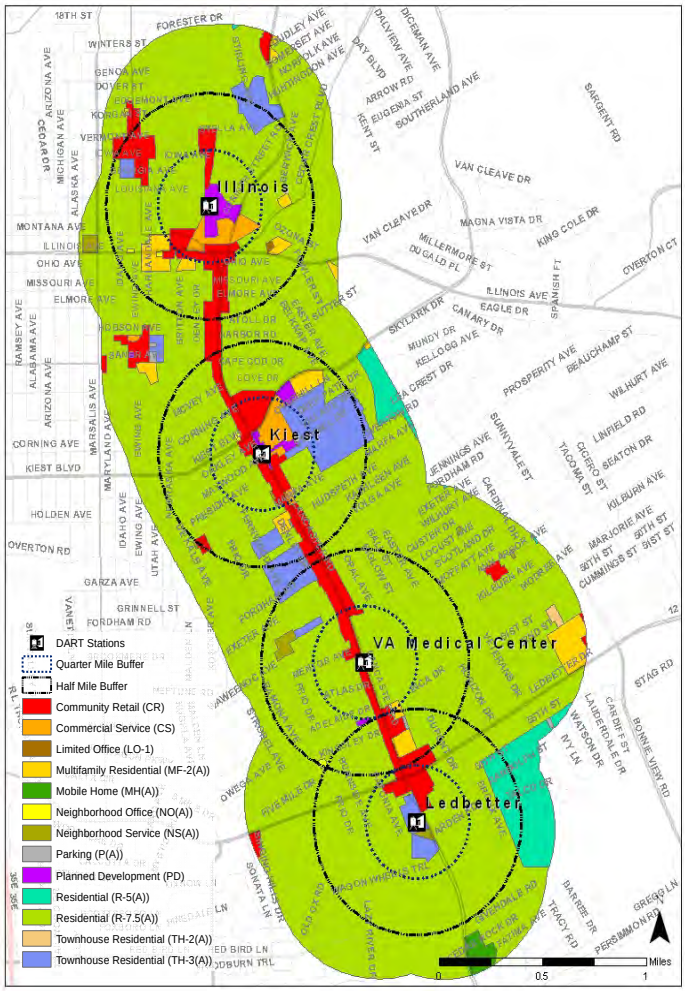
Source: Chapter 51A Article 13: Form Districts

Several creative options are available moving forward with redevelopment, but working within the current process requires knowledge of what's currently on the ground using standard zoning practices.

Current Zoning

The current zoning around the Lancaster Corridor stations mainly consists of single-family residential. Community retail zoning is also designated immediately adjacent to the Kiest, VA Medical Center, and Ledbetter stations. Community retail includes retail, personal services and office uses that are compatible with residential communities. Exhibit 1-6 illustrates all the current zoning in the area. No mixed-use zoning exists along the stations.

Exhibit 1-6: Current Zoning Around The Lancaster Corridor



Source: City of Dallas.

As previously mentioned, the forwardDallas! Policy Plan has categorized the Lancaster Corridor area as a Multi-Modal Corridor Building Block in which gradual building heights and landscape should be considered to transition from existing neighborhoods to transit hubs. The VA Medical Center is designated as a Campus District, where a greater mix of uses is encouraged. The Plan states that existing single-family neighborhoods within multi-modal corridors should be respected while focusing on transit orientation and access. However, the Vision of forwardDallas! states that an Area Plan process needs to take place in order to address redevelopment in single-family or duplex residential areas. Overall, the City of Dallas set the right path to increase the development density that is needed around the Lancaster stations. The option of form districts and the established TIF were set in motion by the forwardDallas! A TOD Audit and current bike conditions for the stations highlight the existing conditions that were observed for each of the stations.

TOD Audit

NCTCOG compiled questions for a TOD audit to gather preliminary information on the current conditions around existing transit stations. A TOD audit was performed for each station along the Lancaster Corridor: Illinois, Kiest, VA Medical Center, and Ledbetter. Results of the audit will be highlighted in this section. To see the full results per station please refer to Appendix A.

TOD Audit Highlights:

- No mixed-use zoning currently within one-half mile of the stations.
- Illinois and Kiest stations have higher dwelling units per acre (du/A) as opposed to VA Medical Center and Ledbetter stations which have lower du/A.
- Existing or planned bike trails are available within one-half mile of the stations.
- Illinois, Kiest, VA Medical Center, and Ledbetter are part of the TOD TIF District.
- The percentage of multi-family zoning located within a one-half mile radius of the stations is very minimal: Illinois, 3.87 percent; Kiest, 2.29 percent; VA Medical Center, 1.74 percent; and Ledbetter, 1.63 percent.

- The percentage of developable land within a one-half mile radius of the station ranges from nine percent to 30 percent: Illinois, 12.53 percent; Kiest, 9.67 percent; VA Medical Center, 18.14 percent; and Ledbetter, 29.69 percent.
- Public service facilities (including but not limited to elementary schools, library, post offices, etc) have been developed within one-quarter to one-half mile of the station.

The overall audit showed that there are certain station areas more primed for growth than others, but there are also strengths within the study area shared by all, such as the City of Dallas' active approach to TOD TIF District and bicycle and pedestrian planning. The following provides more details on the corridor's demographics current and future conditions and how it compares to the city and the region.

Demographic Profile

The majority of the data used in this study were gleaned from the Dallas County Appraisal District, the Census 2000 and Census 2010, and the 2005-2009 American Community Survey. All of the demographics, except employment, were measured at the block group level in order to capture the best representation of the population around the stations. Population projections were calculated at the Transportation Survey Zone (TSZ) level using NCTCOG's 2035 Demographic Forecast. Below is a summary of general demographics for the Lancaster Corridor as a whole.

Lancaster General Demographics

In 2000, the population in the Lancaster Corridor was 6,106, representing 0.5 percent of the City of Dallas' population (Exhibit 1-7). The number of residents in the corridor increased to 9,544 in 2010, an increase of 56 percent. This is a much faster rate of growth than the City of Dallas or the region as a whole, which grew .78 percent and 20 percent respectively. The growth rate in the corridor is projected to slow down by 2035 when the population is expected to reach 11,507, an increase of only 21 percent. This is a smaller rate of increase than the city or region as whole, which are projected to grow 41 percent and 51 percent respectively (Exhibit 1-7).

Exhibit 1-7: Lancaster Corridor Population And Income Comparison

	2000 Population	2010 Population	Growth	2035 Projection	Projected Growth
Lancaster Corridor*	6,109	9,544	56.23%	11,507	20.57%
City of Dallas	1,188,580	1,197,816	0.78%	1,683,361	40.54%
Region	5,309,277	6,371,773	20.01%	9,833,378	54.33%

*This figure includes the population in the census block groups located within one-quarter mile of the four light rail stations assessed in this study.

Source: 2005-2009 American Community Survey; Census 2000; Census 2010; NCTCOG 2035 Demographic Forecast

The majority of the population in the Lancaster corridor was African American in 2010 (Exhibit 1-8). According to the Census 2010, African Americans accounted for nearly 71 percent of the population. Despite this high percentage, the overall proportion of the population who listed themselves as African American in the census decreased over 10 percent. The second most predominant racial group in the corridor was Other, which accounted for roughly 14 percent of the population; Whites accounted for just over 13 percent. Between 2000 and 2010, Whites saw the greatest population increase in the station area, growing over 171 percent. The number of residents categorizing themselves as "Other" increased nearly 131 percent. Multi-racial residents increased nearly 93 percent, and the number of African Americans increased 36 percent.

Exhibit 1-8: Lancaster Corridor Racial Distribution

Race	2000 Population	Percent	2010 Population	Percent	Percent Change
White	469	7.68%	1,272	13.33%	171.22%
Black or African American alone	4,946	80.96%	6,732	70.54%	36.11%
Native	25	0.41%	30	0.31%	20.00%
Asian or Pacific Islander or Hawaiian	3	0.05%	5	0.05%	66.67%
Other	581	9.51%	1,341	14.05%	130.81%
Multi-Racial	85	1.39%	164	1.72%	92.94%
Total	6,109	100.00%	9,544	100.00%	56.23%

Source: Census 2000; Census 2010

The population in the Lancaster Corridor is relatively low-income. In 2009, the median household income for the corridor as a whole was $22,759, 12 percent less than the household incomes in 2000. This was also nearly half the median household income of the City of Dallas as a whole and the region (Exhibit 1-9).

Exhibit 1-9: Lancaster Corridor Median Household Income

	2000 Median Household Income	2009 Median Household Income	Median Household Income Change
Lancaster Corridor*	$25,903	$22,759	-12.14%
City of Dallas	$37,628	$41,266	9.67%
Region	$47,418	$55,459	16.96%

*This figure includes the population in the census block groups located within one-quarter mile of the four light rail stations assessed in this study.

Source: Census 2000; 2005-2009 American Community Survey

Bicycle and Pedestrian Overview

Bicycle and pedestrian facilities are an essential element to any TOD as they can result in high payoffs such as decreased motor vehicle traffic, increased transit ridership, and scenic beautification. In addition, increased pedestrian and bicyclist activity within a TOD is also beneficial to the surrounding areas, as it can stimulate economic growth, increase the demand for housing, and support future development as it breathes life into redevelopment. The design scale and quality of buildings, streets, and landscaping all play a part in creating TOD areas that are pleasant places to walk, bike, relax, and attract people. Pedestrian safety and comfort are crucial to the success of a TOD. Public areas or places around the transit stations should create a sense of community, and surrounding neighborhoods should be included and connected to the areas. Features that help facilitate this type of environment include public plazas, outdoor markets or venues, decorative gardens, or other public amenities.

While the success of a TOD is largely determined by the economic growth it generates, having the proper infrastructure in place that allows pedestrian access is crucial, as it creates a means for penetration and thus encourages spending needed to maintain the development. An evaluation of the existing

infrastructure related to pedestrian and bicycle movement, including sidewalks, pedestrian traffic signals, crosswalks, landscaping, signage, lighting, benches, bicycle facilities, and other public amenities throughout the proposed TODs surrounding the existing transit stations is necessary in order to determine ways to adjust or improve current conditions and facilitate future growth centered on the pedestrian. A detailed assessment of the existing infrastructure related to roads, sewers, water, and electricity will not be examined in this study.

The most memorable public places in cities tend to be where people congregate on foot, whether that be streets, parks, plazas, or outdoor venues. These places make our cities livable and vital by creating a sense of place. In addition, accessibility to these places is often limited to walking and/or biking. Streets play an especially significant role as they act as linkages between destinations, and therefore must be accessible to all, and be functional, safe, and attractive places to walk. However, despite the important role walking and biking represent in the transportation system, they are rarely given the attention they deserve. Urban mobility discussions are often dominated by traffic reports, congestion relief, parking problems, and a whole list of other automobile-oriented qualms. In fact, the national standards for transportation design, the American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, commonly treat pedestrians and bicyclists as secondary issues to traffic flow, and focus on safety rather than accessibility. However, an increasing interest in pedestrian and bicycle issues is being addressed through public policy and changes in the built environment. Improving the quality of life by increasing pedestrian and bicyclists comfort and improving accessibility have become major priorities for planners, designers, officials, and community members. In fact, a recent survey of U.S. mayors of cities over 300,000 showed that the lack of funding for bicycle and pedestrian projects is a key issue facing three in five mayors (60 percent).[v] Additionally, 75 percent support increasing the federal gas tax if a greater share of the funding was invested in bicycle and pedestrian projects.

Features

A successful TOD should provide housing, commercial and retail uses that support transit and generate pedestrian activity. Transit supportive uses have the potential to be high pedestrian generators that

directly promote greater transit ridership and provide opportunities for multi-purpose trips, much like those listed in Exhibit 1-10.

Exhibit 1-10: Potential Multi-Purpose Pedestrian Generators

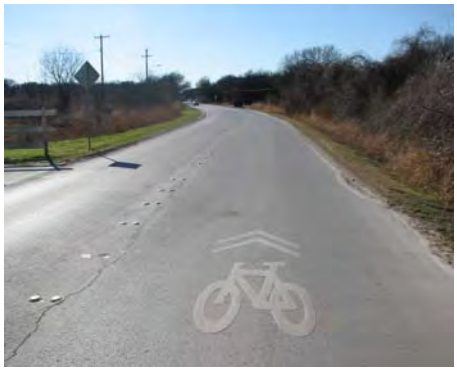
Walk-up apartments	Government Centers
Condominiums and townhouses	Offices
Healthcare facilities	Medical clinics
Schools	Daycare facilities
Cultural institutions	Hotels
Health clubs	Personal services
Retail shops	Restaurants
Grocery stores	Coffee shops
Local pubs	Outdoor cafes
Entertainment facilities	Neighborhood-oriented businesses
Financial institutions	Dry cleaners

A TOD typically includes a quarter-mile buffer (roughly a five- to seven-minute walk) around the transit station that is oriented toward the pedestrian in order to facilitate the type of growth needed to support the development. In addition, a half-mile buffer (about a 10- to 14-minute walk) that is centered on pedestrian connectivity is also crucial in order to encourage walking and bicycling to TOD conveniences and transit, while restricting automobile access. Pedestrians and bicyclists should feel physically comfortable and safe, and have direct and convenient access to the station platform. Pedestrians and bicyclists should also be effectively separated from moving traffic. Separation can be provided through the use of wide sidewalks, dedicated on-street bicycle facilities, on-street parking, landscaping, etc. Well-designed paving, street furniture, and lighting can create a welcoming environment as well, as seen in Exhibit 1-11 of a streetscape in Plano, Texas. A more detailed discussion of the amenities that apply to each study area is included in the report. As the City of Dallas begins to move forward with the creation of a

Exhibit 1-11: Streetscaping

TOD area and incorporating and modifying that area within the existing system, it is important to take into account the best practices provided in Appendix B.

Exhibit 1-12: Shared Lane Marking



The City of Dallas has excellent opportunities for developing a good bicycle and pedestrian network in the south Lancaster corridor. Many collectors and arterials are overly wide and can be restriped to add on-street bicycle facilities. New paths on separate rights-of-way should be constructed where feasible. Short connecting paths, described in the Street Network section of Appendix B, also serve to provide connectivity for bicyclists and pedestrians. On-street bicycle facilities should be provided on most roadways surrounding the stations, and should measure four to six feet in width, in addition to sidewalks that are between five and seven feet wide. Right-of-way, motor vehicle speeds, and various other factors should be considered before implementing on-street bicycle facilities, as discussed in Appendix B. The City of Dallas has several roadways that can easily be restriped to include dedicated on-street bicycle facilities including E. Saner Ave., Cedar Crest Blvd., and Veterans Dr. On-street bicycle facilities should also be added on a number of other roadways, particularly those that are overly wide and currently invite speeding. More detail regarding recommendations for on-street bicycle facilities is provided in each station assessment. In the event that a bike lane is not a feasible option on a particular roadway, a shared lane marking (Exhibit 1-12) is an acceptable alternative on roadways that have motor vehicle speeds at or below 35 miles per hour (mph).

The City of Dallas should coordinate with Texas Department of Transportation (TxDOT) before implementing any of the recommended infrastructure improvements to roadways that are on-system, or maintained by TxDOT, as the approval of TxDOT is required for any modifications. Additionally, improvements made utilizing funding from TxDOT will require coordination. State Highway 342 (S. Lancaster Rd. in Dallas) is one such roadway, and while TxDOT has approved reductions in capacity on state highways within the City of Dallas in recent years, a special analysis by TxDOT is required to

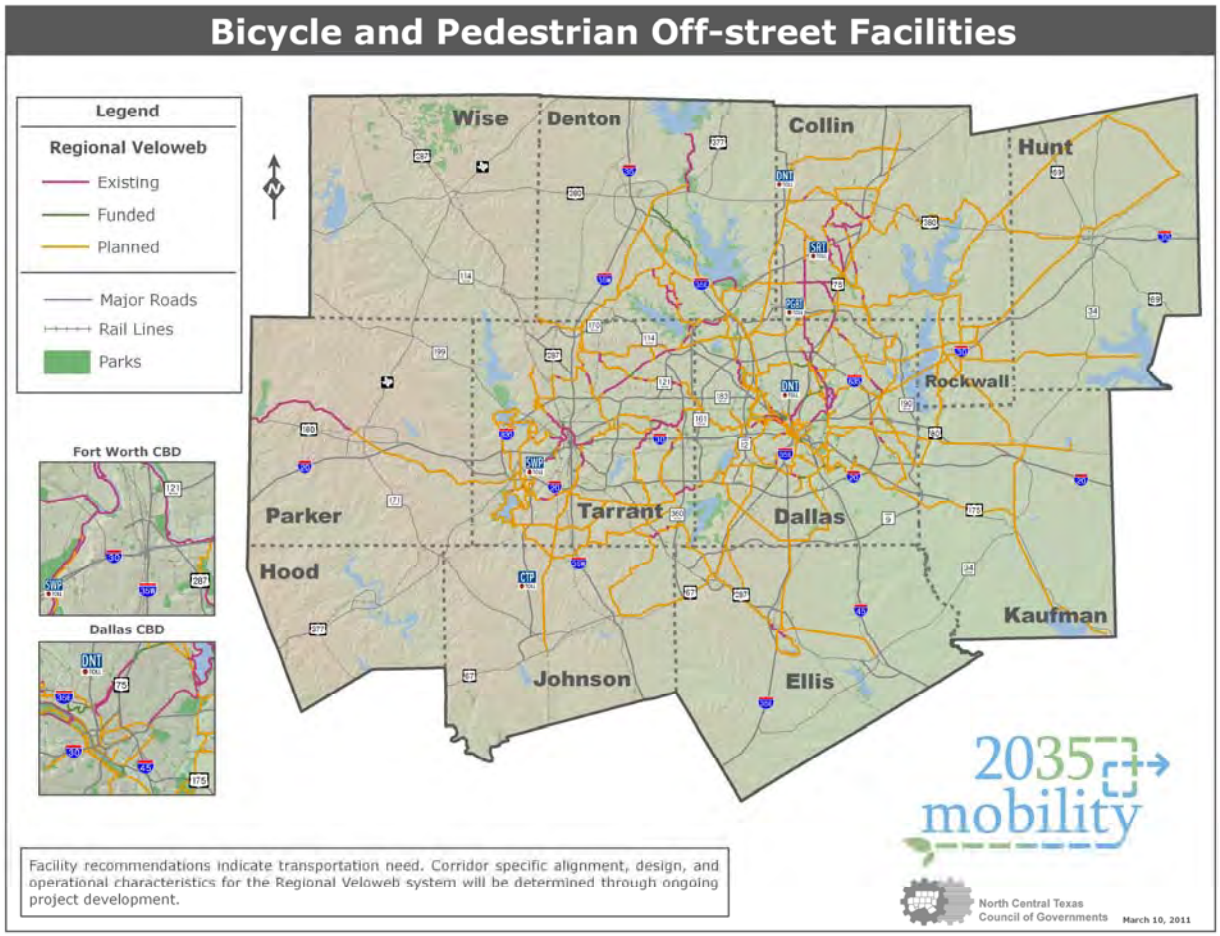
approve such requests. In order to receive approval from TxDOT, the City of Dallas would need to submit to the TxDOT Dallas District explicit design plans for the entire corridor, including an assessment on the effects of reducing capacity and access management. The TxDOT Dallas District would then submit the plans to the District Traffic Operations division for review of the capacity analysis. Upon their approval, permitting would be granted to the City of Dallas to allow for the infrastructure improvements.

The City of Dallas also has several land easements that can benefit from a well-planned system of greenways, open space, and multi-use trails. A significant trails network has been developed by the City of Dallas Park and Recreation Department, known as the Dallas Trail Network Plan, and future plans should be coordinated to connect to existing and planned TOD sites. The Five Mile Creek Trail provides a great opportunity for community members to become active in community trail programs such as the development of a 'Friends of the Five Mile Creek Trail' group. Trails should be specifically linked to the full system of routes included in the NCTCOG Regional Veloweb (Exhibit 1-13). The Regional Veloweb is a network of off-street shared use paths designed for use by bicyclists, pedestrian and other non-motorized forms of transportation. The Veloweb serves as the regional expressway for bicycle transportation. It includes over 1,660 miles of interconnected off-street trails designed to link the entire North Central Texas region together. Linkages between neighboring counties and cities are critical as they provide connections to the City of Dallas, and ultimately the transit station, and encourage maximum use of the facilities by granting accessibility. The City of Dallas has already taken this into consideration within this area as the Five Mile Creek Greenbelt Trail is currently programmed for funding. The trail is included in the Regional Veloweb and will ultimately connect to Ledbetter station via on-street bicycle facilities. The Five Mile Creek Greenbelt Trail also connects to the existing Glendale Park Loop Trail with a planned extension to the Kiestwood Trail. Additionally, the Interurban Trail and the Cedar Crest Trail are two planned Regional Veloweb alignments that will connect north of Illinois Station and ultimately to the Santa Fe Trail and downtown Dallas.

In addition to the Dallas Trail Network Plan, the City of Dallas adopted the 2011 Dallas Bike Plan on June 8, 2011, which includes guidance and specific facility recommendations for over 1,200 miles of

interconnected bicycle facilities. One of the main goals of the 2011 Dallas Bike Plan is to create a fully interconnected, seamless, and safe Dallas Bikeway System that connects all areas of the city and adjacent jurisdictions, and meets the needs of all types of bicyclists. Additionally, the prioritization methodology for facility implementation included facilities within a three-mile parameter of transit stations as high priority projects, which captures all facilities being recommended as part of this report. Recommendations in this report have been coordinated with the 2011 Dallas Bike Plan.

Exhibit 1-13: NCTCOG Regional Veloweb



[i] Arrington, G.B., Cervero, R. (2008). Effects of TOD on Housing, Parking, and Travel (TCRP Report 128). Washington, D.C.: Transportation Research Board.
[ii] Arrington, G.B., Cervero, R. (2008). Effects of TOD on Housing, Parking, and Travel (TCRP Report 128). Washington, D.C.: Transportation Research Board.
[iii] Arrington, G.B., Cervero, R. (2008). Effects of TOD on Housing, Parking, and Travel (TCRP Report 128). Washington, D.C.: Transportation Research Board.
[iv] Cervero, R., Murphy, S., Ferrell, C., Goguts, N., Tsa, Y., Arrington, G.B., Boroski, J., Witenstein, N. (2004). Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects (TCRP Report 102). Washington, D.C.: Transportation Research Board, 318.
[v] Metropolitan Transportation Infrastructure Survey, Washington, D.C., The United States Conference of Mayors, 2011.

2. ILLINOIS STATION ASSESSMENT AND RECOMMENDATIONS

Data for the Illinois Station area include demographics, zoning, land use, commercial and housing, and bike/pedestrian conditions. A summary of each topic is included in this chapter. Recommendations for improvements are included at the end of the station's section.

Demographics

The total population within one-quarter mile of the Illinois Station area was 1,082 in 2000 (Exhibit 2-1). By 2010, the population grew to 1,096, an increase of 1.29 percent according to the Census 2010. NCTCOG's 2035 Demographic Forecast, which measures population growth at the Traffic Survey Zones (TSZ) level, projects the population to 1,138 in 2035; an increase of about four percent (Exhibit 2-1). Despite the small percentage of population growth, the ethnic makeup of the station area changed dramatically between 2000 and 2010. Although the highest percentage of any racial group, 44 percent, was African American, the overall number of African Americans in the station area decreased 38 percent (Exhibit 2-2). Those listing themselves as Other accounted for 26 percent of the population, and Whites accounted for 25 percent. The population of these two groups increased 153 percent and 146 percent respectively. Hispanics accounted for 53 percent of the population around the station according to the Census 2010; an increase of 153 percent from 2000 (Exhibit 2-3).

Exhibit 2-1: Illinois Station Area Population

	Station Area Population				
Station	**2000 Population**	**Percent Change**	**2010 Population**	**2035 Forecast**	**Percent Change**
Illinois Station	1,082	1.29%	1,096	1,138	3.83%
Ledbetter Station	1,351	123.98%	3,026	4,618	52.61%
Kiest Station	1,717	87.71%	3,223	3,112	-3.44%
VA Medical Center	1,959	12.25%	2,199	2,639	20.01%
Total	6,109	56.23%	9,544	11,507	20.57%

Source: Census 2000; Census 2010; NCTCOG 2035 Demographic Forecast

Exhibit 2-2: Illinois Station Area Total Population by Race

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
White alone	112	10.35%	276	25.18%	146.43%
Black or African American alone	769	71.07%	480	43.80%	-37.58%
American Indian and Alaska Native alone	3	0.28%	5	0.46%	66.67%
Asian or Pacific Islander alone	0	0.00%	2	0.18%	0%
Other	181	16.73%	290	26.46%	60.22%
Multi-Racial	17	1.57%	43	3.92%	152.94%
Total	1082	100.00%	1,096	100.00%	1.29%

Source: Census 2000; Census 2010

Exhibit 2-3: Hispanic and Non-Hispanic Population

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
Hispanic or Latino	286	26.43%	582	53.10%	103.50%
Not Hispanic or Latino	796	73.57%	514	46.90%	-35.43%
Total	1082	100.00%	1096	100.00%	1.29%

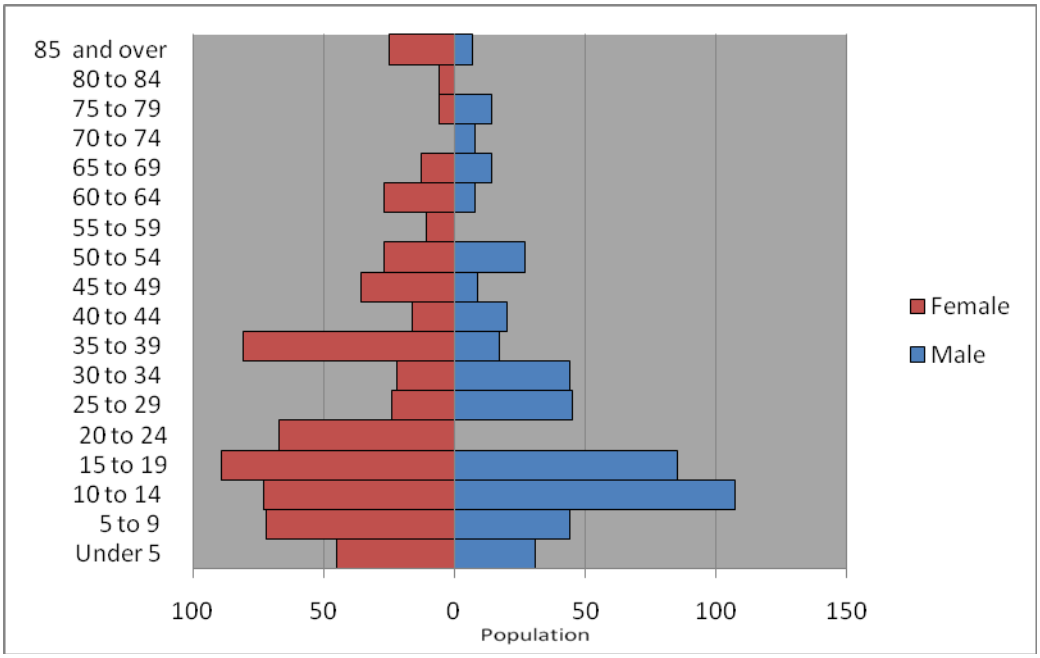
Source: Census 2000; Census 2010

According to the 2005 -2009 American Community Survey, the population around the station is relatively young (Exhibit 2-4). The majority of the station area residents, 61 percent, are younger than 30. The largest age cohort was 10 to 14 years of age, followed by 15 to 19 years of age. The two cohorts combine to total 32 percent of the population around the station area. The smallest percentages of people, 0.54 percent, were between 80 and 84 years old. People in their working years, those between 15 and 64 years of age, made up 58 percent of the population.

The largest age group of males in the station area was 10 to 14 years old, accounting for 22 percent of the male population; the smallest cohorts were 20 to 24, 55 to 59 and 80 to 84. No male residents were reported within these age groups. Males between 15 and 64 made up 53 percent of the total male population in the Illinois Station area.

The largest female age cohort in the station area, accounting for 14 percent, was 15 to 19 in 2009. The smallest cohort was 70 to 74 years old, which had no female residents. Females between 15 and 64 comprised 63 percent of the population.

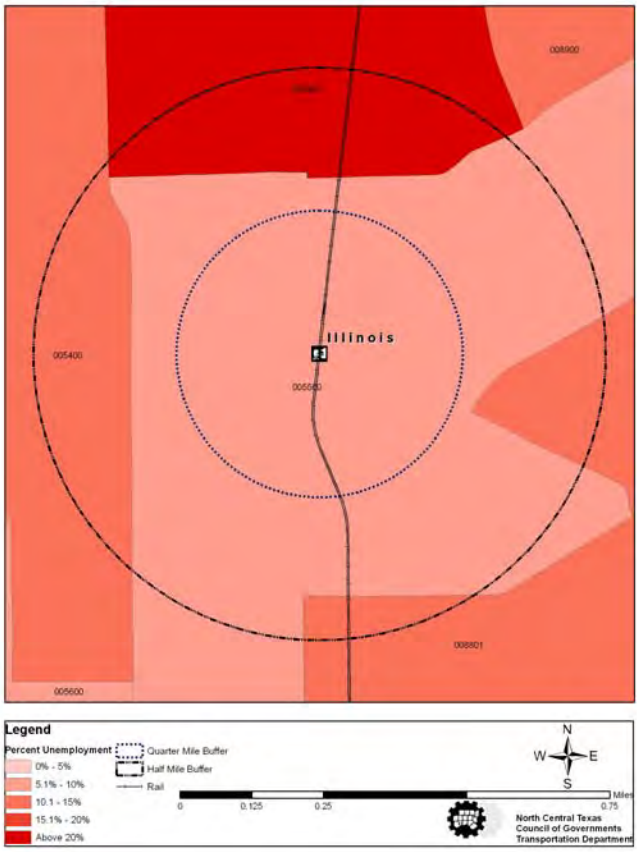
Exhibit 2-4: Illinois Station Age Distribution



Source: 2005-2009 American Community Survey

Because the data was not available at the block group level, unemployment was measured at the tract level, using 2005-2009 American Community Survey data. The American Community Survey indicates that roughly 15 percent of the workforce in the Illinois station area was unemployed in 2009. This was three times the rate for the City of Dallas as a whole, which had an unemployment rate of just over five percent. The census tracts in the station areas are displayed in Exhibit 2-5; individual details for each tract within a half-mile of the station are listed in Exhibit 2-6. The area north of the station had the highest rate of unemployment rate at roughly 24 percent. One possible contributor to the high unemployment rate for the station areas is the lack of major employers. According to NCTCOG's Research and Information Services (RIS) Department, no major employers are located within one-half mile of the station. In order to be considered a major employer, the employer has to employ 80 or more people.

Exhibit 2-5: Illinois Station Area Census Tracts



Source: 2005-2009 American Community Survey

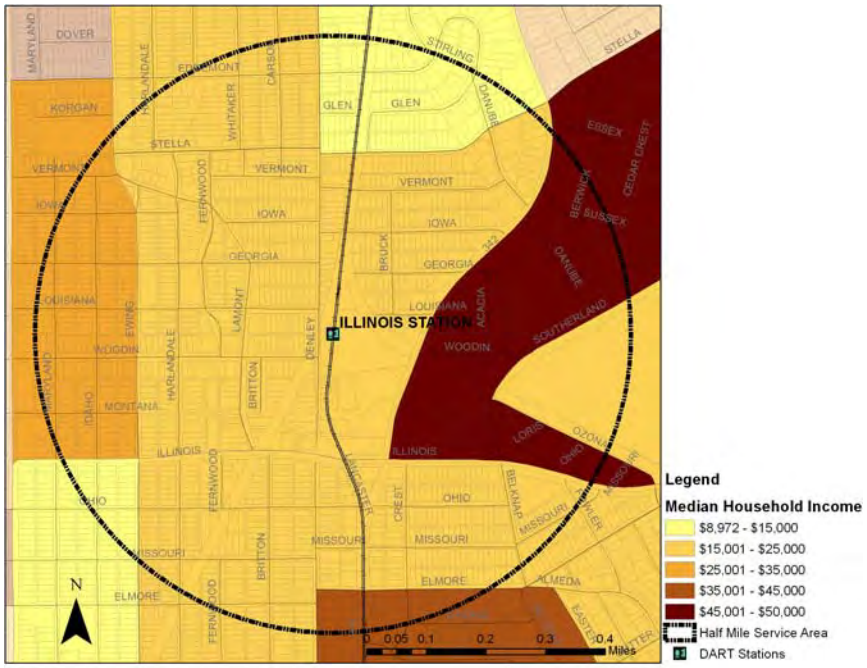
Exhibit 2-6: Illinois Station Area 2009 Unemployment Rate

Census Tract	Population 16 Years and Over in Labor Force	Population 16 Years and Over in Labor Force, Unemployed	Percent Unemployment
005500	1425	124	8.70%
005400	1913	272	14.22%
004900	1453	342	23.54%
Total	4791	738	15.40%

Source: 2005-2009 American Community Survey

The median household income for the majority of Illinois Station Study area was $21,111 per year in 2009 (Exhibit 2-7). Residents in the southeast portion of the study area, however, had a median household income of $33,309.

Exhibit 2-7: Illinois Station Area 2009 Median Household Income



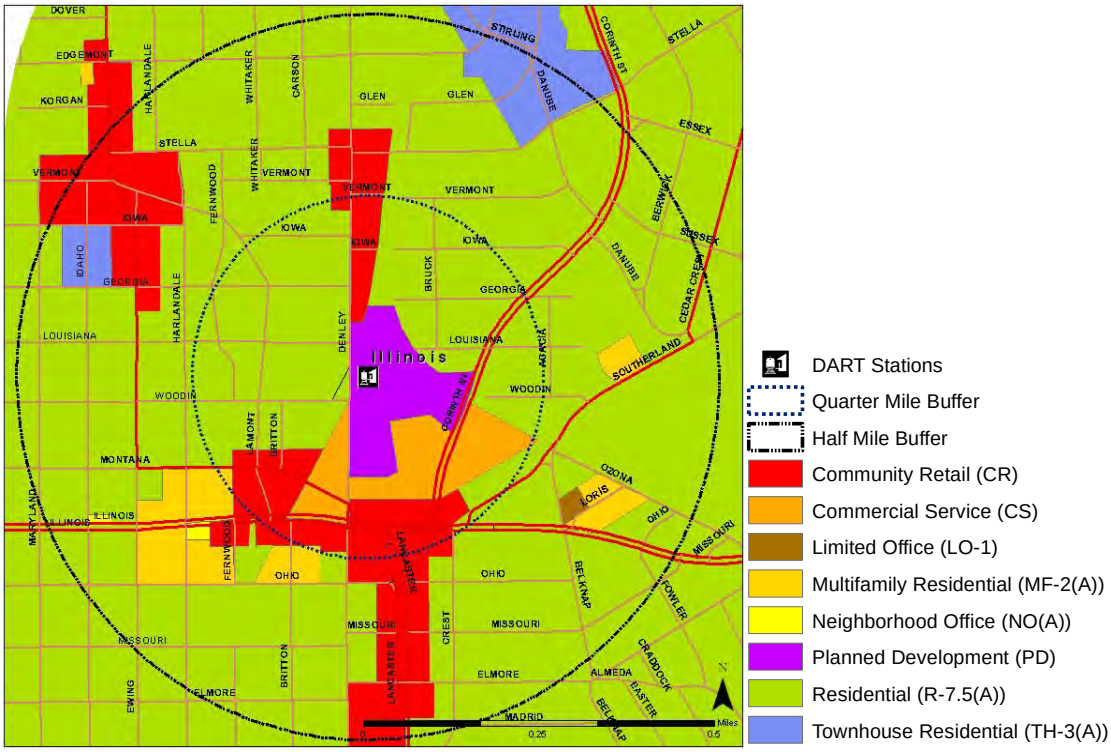
Source: 2005-2009 American Community Survey

Current Zoning and Land Use

The Illinois Station's one-quarter mile buffer is zoned predominantly single family with some commercial services and community retail. Outside the one-quarter mile radius but within the one-half mile buffer of the station other zoning includes: townhouse residential, multi-family residential, neighborhood office and limited office. Exhibit 2-8 is an image of the zoning around the Illinois Station. No mixed-use and very minimal high density zoning exists in the area.

This image shows a bird's eye view of the Illinois Station. The Monroe Shops building, electrical substation, and single family residences can be seen in this image.

Exhibit 2-8: Zoning Within One-Half-Mile of the Illinois Station

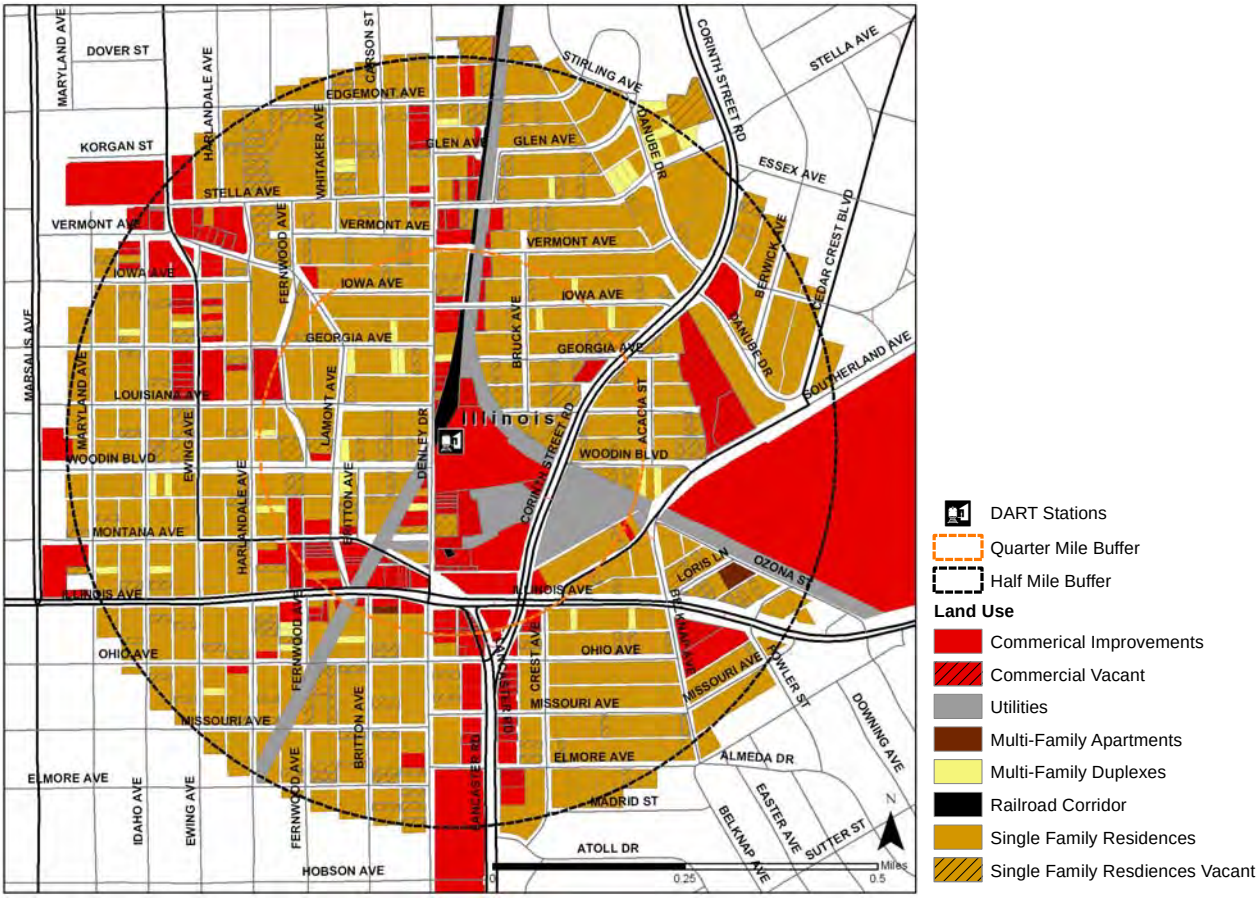


Source: City of Dallas, 2009

As stated, the land use around the Illinois Station is predominately single family residential followed by commercial. Exhibit 2-9 shows an overall view of the land use surrounding the Illinois station. Land use data were gathered for parcels that had any portion in the half-mile radius. Some parcels contained

boundaries that extended past the half-mile radius as is shown in the exhibit. Current commercial uses are located to the east and south of the station. Within the quarter-mile buffer of the station, single-family accounts for 303 parcels out of 409 total, making up about 57 acres or 47 percent; commercial accounts for 80 parcels, making up about 27 acres or 22 percent; multi-family residential 14 parcels, making up about a little over two acres or two percent (Exhibit 2-10). Within a half-mile buffer of the station single-family accounts for 1,400 parcels out of 1,641 total, making up about 271 acres or 50 percent; commercial accounts for 179 parcels, making up about 204 acres, or 38 percent; multi-family residential 42 parcels making up about nine acres, and a little less than two percent (Exhibit 2-11).

Exhibit 2-9: Land Use Within One-Half-Mile of the Illinois Station



Source: Dallas Central Appraisal District, 2009

Exhibit 2-10: Land Use Parcels Within One-Quarter-Mile of the Illinois Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	39		17.36		
Commercial - Vacant	41	80	9.44	26.80	22.19%
Utilities	9	9	23.53	23.53	19.48%
Multi Family Residences - Apartments	14	14	2.73	2.73	2.26%
Rail Road Corridor	3	3	10.73	10.73	8.88%
Single Family Residences	255		46.21		
Single Family Residences - Vacant	48	303	10.77	56.98	47.18%
Grand Total	409	409	121	120.77	100.00%

Source: Dallas Central Appraisal District, 2009

Exhibit 2-11: Land Use Parcels Within One-Half-Mile of the Illinois Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	93		180.11		
Commercial - Vacant	86	179	23.45	203.56	37.55%
Utilities	15	15	40.82	40.82	7.53%
Multi Family Residences - Apartments	2		0.80		
Multi Family Residences - Duplexes	40	42	8.06	8.86	1.63%
Rail Road Corridor	5	5	17.29	17.29	3.19%
Single Family Residences	1180		227.16		
Single Family Residences - Vacant	220	1400	44.44	271.60	50.10%
Grand Total	1641	1641	542	542.13	100.00%

Source: Dallas Central Appraisal District, 2009

Commercial/Retail Assessment

Commercial accounts for about 38 percent of the acres for land use within the half- mile buffer around the Illinois Station refer to Exhibit 2-11. About half of the existing commercial uses are vacant, which indicates that no buildings are present, however as observed in the aerial photography some of these sites do contain surface parking lots. Out of the 179 total parcels which make up about 204 acres, 86 parcels are indicated as being vacant for a total of about 23 acres. Existing commercial use around the quarter mile of the station mainly consists of automobile service, sales, and repairs. Other commercial

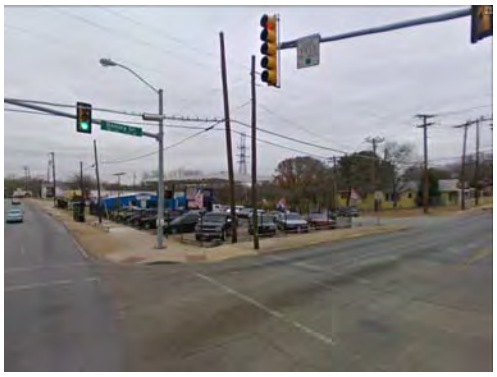
uses include eateries. The year built for the commercial improvements range from 1925 to 1981. The total value, which includes land value and improvement value, range from $20,780 to $211,890. This does not include the Monroe Shops built in 1914 and has a total value of $925,020.

A variety of examples to illustrate some of the existing commercial and retail along the rail line and within one-quarter mile of the station are located below.

Kinfolk Grocery and Soul Food is located at 1802 S. Denley Dr. This site is vacant as indicated by the For Rent sign posted.

Trinity Heights Church located at 1734 S. Denley Dr. This site had a For Sale sign posted on the property.

Greater Friendly Chapel Baptist Church located at 2125 S. Denley Dr. This site is in good condition as indicated by the building appearance and maintained landscaping.

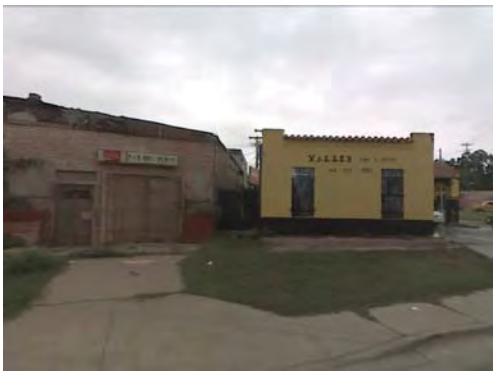


Pick & Choose Auto Sales Inc. located at 1243 Illinois Ave. This business sells automobiles.

Business name not distinguishable from street view located at 2301 S. Denley Dr. According to the Dallas County Appraisal District this location provides automotive services.

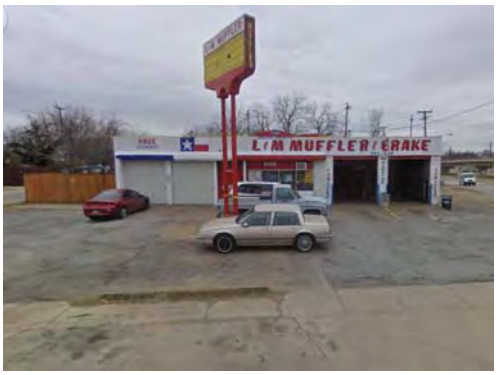
Lamont Tire Service located at 2302 S. Denley Dr. This business offers automotive services.

7 Eleven located at 1410 Illinois Ave. The business contains a gas station. The convenience store provides a service that the community could utilize. The setback of the building entrance from the sidewalk may discourage customers to walk to the convenience store.



2308 S. Lancaster Rd. (far-left). The building appeared empty and the façade and landscaping are in need of improvements.

Tire and Detail located at 2310 S. Lancaster Rd. The property is underutilized as the business sells tires and provides detail automotive service.



L&M Muffler & Brake located at 2300 Corinth St. Rd. The business offers automotive services.

Seafood Connection located at 1427 Illinois Ave. The seafood restaurant provides a food service to the community.

Texaco gas station and convenience store located at 2232 Corinth St. A bus shelter, circled in orange is located to the right facing Illinois St.

A goal for TOD is to provide commercial, retail, and housing so that pedestrians can walk/bike to and from those services to the train station, a walking distance is defined as a quarter-mile and up to a half-mile distance from the station. Most of the commercial uses are not compatible with a light rail transit station. Automotive services such as auto sales, muffler shops, repair services and gas stations should be minimized within the walking distance of the rail station. These services do not encourage the use of the rail system or the incentive to walk from the station to the service. Providing a drive-through at establishments, like the McDonalds in the area, should be limited as well as it discourages walkability in the area. A few examples of commercial and retail uses that would be more appropriate for the area include dry cleaners, clothing retail, child care, post office etc. More locally owned commercial and retail uses should be highly encouraged. Local businesses tend to provide specialized items and services that can build character in the neighborhood.

The Monroe Shops are a good starting point to revitalize the area around the station. The Monroe Shops are located right next to the Illinois DART Station. The building is currently listed in the National Register of Historic Places. DART has established the Monroe Shops Ad Hoc Committee which has been working on preparing the site as the new DART police headquarters. DART board committee minutes reveal that space within the Monroe Shops may be available for other business utilization. There have been previous attempts to utilize the Monroe Shops for TOD. It is anticipated that revitalization will spawn from having DART police headquarters located in the building and possibly associated uses to serve that employment base and their client's needs may follow. The Committee has expressed interest ranging from having senior housing to the possibility of concessions available at the DART stations, which would be compatible for the area.

Appendix C provides data from the 2009 Dallas County Appraisal District. The parcels were selected to provide information on the property along the rail line and within the one-quarter mile buffer of the station.

These are not all the commercial and retail that surrounds the station, but a sample of the existing commercial and retail within one-quarter mile of the station and along the rail line.

The commercial/retail that surrounds the station is one part that characterizes a TOD. It can provide jobs and neighborhood services. Housing is another part that can complement the TOD. Housing around a station can increase the likelihood of increased ridership, by having the train services so close in proximity which can lead to reduced use in personal vehicles. Housing in a TOD should be relatively denser than other parts of the city in order for more people to take advantage of the train and commercial services.

Housing Assessment

The age, cost, and density of housing, in addition to the adjacent land uses, are important factors when assessing the viability of a TOD. The majority of the housing units within a half-mile of the Illinois Station Area, 93 percent, were constructed prior to 1960 (Exhibit 2-12). In fact, only 54 of the 1,220 housing units in the study area, four percent, were constructed after 1980 The Illinois Station Area, however, has the second largest number of housing units constructed after 1960 among the Lancaster stations with 84 units. The highest percentage of housing units, 36 percent, was constructed between 1941 and 1960.

Exhibit 2-12: Lancaster Corridor One-Half Mile from the Station Housing Unit Construction Year

Year Constructed	Illinois	Kiest	VA Medical Center*	Ledbetter*
Unknown	3	2	7	4
Pre 1920	26	4	20	1
1920-1940	670	342	203	94
1941-1960	437	976	588	391
1961-1980	30	29	72	65
1981-2000	15	15	5	5
2001-2008	39	29	30	11
Total	1220	1397	925	571

* Parcels in this station area overlaps with another station area.

"Unknown" indicates data was not available for those parcels indicating housing existed.

Source: Dallas Central Appraisal District, 2009

The majority of the housing units in the Illinois Station Area are over 50 years old, affordable for the relatively low-income population, and have a high occupancy rate though appear to be mainly wood frame construction and of a less durable nature. In 2000, 90 percent of the housing units in the Illinois Station area were occupied; the percentage decreased slightly to 88 percent in 2009 (Exhibit 2-13). The majority of the households, 59 percent, were owner occupied in 2009, a decrease from 2000.

Exhibit 2-13: 2000 Lancaster Corridor Housing Tenure

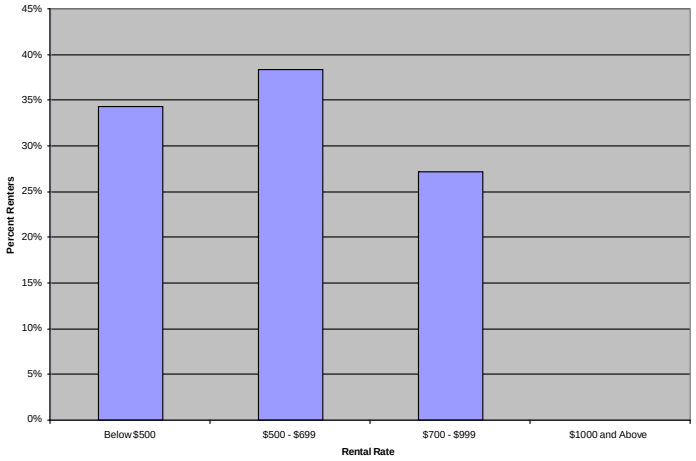
Station	2000 Percent Occupied	2000 Percent Owner Occupied	2009 Percent Occupied	2009 Percent Owner Occupied
Illinois	90.19%	64.72%	87.65%	58.84%
Kiest	93.85%	73.28%	82.44%	58.99%
VA Medical Center	90.22%	60.37%	74.19%	63.65%
Ledbetter	95.66%	74.60%	81.88%	91.19%
Total	92.69%	69.09%	69.99%	92.64%

Source: 2005-2009 American Community Survey; Census 2000

The Illinois Station area housing was relatively affordable in 2000. Housing is deemed affordable if the mortgage or rent does not exceed 30 percent of the homeowner or renter's monthly income. Given that the median household income for the majority of the station area was $25,764 in 2000, residents in the

Illinois Station area could afford to pay $644 per month in housing costs (Exhibit 2-7). Thirty-five percent of the households in the Illinois station area rented in 2000. Among them, rates ranged from $150 to $1,000 per month (Exhibit 2-14). The highest percentage of renter occupied households, 38 percent, paid between $500 and $699. An additional 27.2 percent paid between $700 and $999. Thirty-four percent rented for less than $500 per month. In 2009, the median household income for the station area was $21,111 with residents able to afford $528 per month. Rental rates, however, averaged $909.

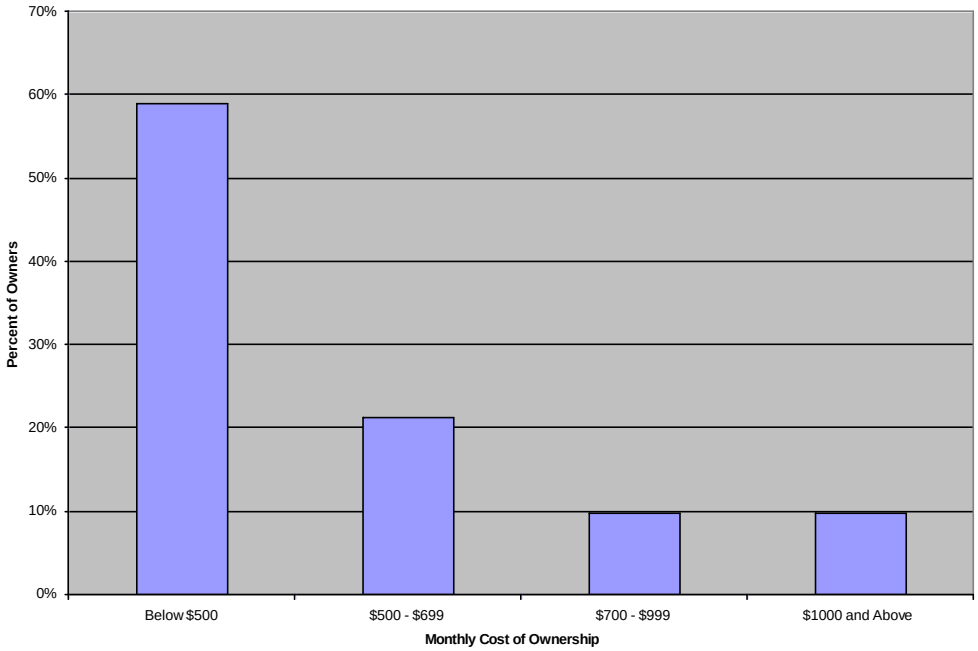
Exhibit 2-14: Illinois Station Area Rental Rates



Source: Census 2000

Interestingly, the majority of owner occupied households in the Illinois Station Area, 59 percent, paid less than $500 a month for housing costs in 2000 (Exhibit 2-15). An additional 21 percent paid between $500 and $699 per month and 10 percent paid between $700 and $1,000. Households paying above $1,000 per month for rent accounted for 10 percent of the households. By 2009 the average monthly cost of ownership had risen to $908, $380 above the affordable rate for the station area.

Exhibit 2-15: Illinois Station Area Monthly Cost of Ownership for Owner Occupied Housing



Source: 2005-2009 American Community Survey

Examples of the existing housing that is located along the rail line but within one-quarter mile from the Illinois Station are shown on the following pages.

1406 Vermont Ave.
The house was vacant and boarded up. However during staff visit it appeared to be in the stages of being repaired as indication of a new fence and some of the exposed windows being fairly new.

1410 Vermont Ave.
The house appears vacant, as evidenced by the boarded up windows. It is in poor condition with no indication of repairs being made. A car was parked in the drive way.

2109 S. Denley Dr.
This property is in disrepair. The house does not appear to be occupied as indicated by the boarded up front window.

2127 S. Denley Dr.
This house is in fair condition as indicated by the well-maintained structure and landscaping.

2209 Denley Dr.
This property is vacant and in need of repairs. The windows are boarded up. A For Sale sign is posted.

A greater amount of single family homes are seen near the Illinois Station compared to the other stations in the Lancaster Corridor. Multi-family duplexes are seen sprinkled throughout the quarter-mile buffer. Multi-family apartments are not present until further from the quarter-mile buffer. Appendix C provides information on a sample of the housing properties that are along the rail line and within one-quarter mile from the Illinois Station. The City of Dallas runs a home repair program in order to preserve and restore existing housing for low-income homeowners. The Dallas Major Systems Repair Program provides loan

assistance to low-income Dallas homeowners for up to two major home system repairs. The Reconstruction Program provides loans for up to $87,500 to homes that are beyond repair and need to be demolished and rebuilt. Outreach to residents regarding the programs can occur via flyers and/or workshops.

A TOD assessment should identify opportunities and constraints related to non-motorized modes of transportation as these modes promote accessibility to the station and surrounding developments while allowing for densities that support a TOD by potentially reducing parking needs. The following section outlines the bicycle and pedestrian conditions at and surrounding the Illinois Station

Bicycle/Pedestrian Conditions

A bicycle and pedestrian needs assessment is a critical component of any viable TOD site. The following provides a discussion of opportunities and constraints for bicyclists and pedestrians at the Illinois Station location.

The Illinois Station has significant opportunities for bicycle and pedestrian accessibility and connectivity. These characteristics are discussed in further detail below.

Opportunities:

- Existing sidewalks on both sides of S. Denley Dr. that provide direct access to the station.
- Well-connected sidewalk system with limited voids allows access from adjoining neighborhoods east and west of the station via E. Woodin Blvd., E. Louisiana Ave., Georgia Ave., and Iowa Ave.
- Sidewalks to the north of the station parking lot extend to neighborhoods to the northeast of the station and allows for pedestrian accessibility via Georgia Ave. and Iowa Ave. (see Exhibit 2-16).
- The area surrounding the station is in grid form, allowing for easy routes and accessibility by adjacent neighborhoods.

- Grade crossings and curb ramps allow for safe pedestrian accessibility to the station, especially for passengers with mobility impairments.
- Ramps and lifts are provided for bicyclists and passengers with mobility impairments, and provide safe access onto the train and station platform.
- Crosswalks exist at several major intersections including E. Louisiana Ave. and S. Denley Dr., E. Woodin and S. Denley Dr., and E. Illinois Ave. and S. Denley Dr., to allow for safe crossing by pedestrians and bicyclists.
- Multimodal coordination exists as the station has direct connections to DART bus routes 409, 444, 445, 515, and 538.
- Greater Dallas Bike Plan routes 49, 150, 160, and 170 exist on S. Marsalis Ave, E. Woodin Blvd., S. Denley Dr., Iowa Ave., and E. Saner Ave., allowing bicyclists direct access to the station from adjoining neighborhoods (Exhibit 2-17).
- The 2011 Dallas Bike Plan includes several on-street bicycle facilities including a shared lane marking facility on S. Ewing Ave., a bike lane on Cedar Crest Blvd. from Surrey Ave. to Danube Dr., on Sutherland Ave., and on E. Saner Ave., and a buffered bike lane north of Surrey Ave. on Cedar Crest Blvd. These facilities are further discussed in the recommendations section.
- Cedar Crest Trail, a planned multi-use trail on the Regional Veloweb and the City of Dallas Trail Network Plan, will run parallel to the Blue Line and connect to the Santa Fe Trestle Trail (not shown in map) in the north, and IH35 E in the south. The trail will extend 4.7 miles, and will directly connect to Illinois Station offering access for multiple users (Exhibit 2-19).
- An alternate trail planned with a direct connection to Illinois Station, included in both the Regional Veloweb and the Dallas Trail Network Plan, is the Interurban Trail which connects to Cedar Crest Trail in the west (Exhibit 2-19). This trail also connects to the John C. Phelps Park Trail in the east, which facilitates a connection to the John C. Phelps Park (not shown in map). Additionally, the Interurban Trail connects south to Loop 12. This will provide a means for neighborhoods located within the study zone, as well as those that fall outside of it, to

have access to an interconnected system that allows direct access to the station without the need for a motor vehicle.

- Bicycle amenities are located at the station including a bike rack and four bike lockers.
- DART allows clean bicycles on-board all rail lines (provided they are not posing a safety threat), and has installed bicycle carrier racks on its entire fleet of buses, further enhancing a seamless multimodal connection.
- Significant landscaping and green space exists throughout the station and in surrounding areas, including West Trinity Heights Park, which is located within the one-half mile radius zone of the station.
- Public amenities including sheltered seating, restrooms, trash receptacles, telephones, ticket vending machines, and station monitors are present at the station creating a more pleasant experience for passengers.
- A freestanding sculpture fabricated in sheet bronze titled *Spirit, Mind, and Family*, and based on the design by Ayokunle Odeleye, exists at the station and includes a variety of images that honor the family unit, the history of the neighborhood, the importance of transportation, and support for education. This is an important piece of public art that helps integrate the surrounding community into the station (Exhibit 2-18).
- Adequate parking for the station is provided, and offers a connection to S. Corinth St. - the major arterial running north/south to the east of the station which allows for easy accessibility by neighborhoods lying to the east of the station.

Exhibit 2-16

Exhibit 2-17

Exhibit 2-18

Exhibit 2-19: Illinois Station Area Bicycle and Pedestrian Facilities Overview

While the study area of Illinois Station has significant opportunities, it also has several constraints that should be addressed.

Constraints:

- There are many sidewalk linkages missing within the quarter-mile radius zone of the station including, S. Corinth St., E Montana Ave., and Lamont Ave., which reduce accessibility by adjoining neighborhoods.
- Many existing sidewalks are deteriorating, obstructed, lack curb ramps, and do not conform to *Americans with Disabilities Act* (ADA) requirements (Exhibit 2-20).
- Wide curb cuts used to allow motor vehicles access to driveways or parking lots are prevalent along existing sidewalks, and create a safety hazard for pedestrians, bicyclists, and persons with mobility impairments as the change in grade can be too abrupt and lead to an imbalance (Exhibit 2-21).
- The paved sidewalk to the north of the station is missing a key connection to the north side of Georgia Ave where a walkway has been cleared by users, creating safety concerns (Exhibit 2-22).
- While there are three existing on-street bicycle routes, there are no on-street bicycle lanes, shared lane markings, or other bicycle facilities connecting adjacent neighborhoods to the station.
- While there are benches on the station platform, there is no street furniture located around the station.
- There is no existing pedestrian-scaled lighting, concrete pavers, or street buffers to delineate pedestrian right of way and create an aesthetically pleasing environment.
- There are no businesses or retail shops located within close proximity to the station to foster growth or encourage pedestrian activity.
- The existing electrical substation to the east of Illinois station takes up a substantial amount of space, and is aesthetically unpleasing. The proximity of the substation to the sight also creates possible safety, drainage, and noise concerns.

- The large parking facility is not conducive to a pedestrian-friendly environment, and encourages primarily automobile traffic.

Exhibit 2-20

Exhibit 2-21

Exhibit 2-22

Although there is essential infrastructure in place providing regional connections for bicyclists and pedestrians, the densities and land uses that are needed to foster walkability are not currently in place, and are not conducive to supporting a traditional TOD at this proposed site. However, if these densities are able to be achieved through the proper mix of land uses, this site has the possibility of becoming a truly successful TOD.

Recommendations for bicycle and pedestrian facilities identified in the following section are based on the bicycle and pedestrian needs analysis. Recommendations should be confirmed with appropriate city departments and existing planning documents before implementation.

Bicycle and Pedestrian Recommendations

1. Removal of Greater Dallas Bike Plan routes 49, 150, 160, and 170 on S. Marsalis Ave., E. Woodin Blvd., S. Denley Dr., Iowa Ave., and E. Saner Ave.
2. Addition of on-street bicycle facilities including per the Dallas Bike Plan:
    - a shared lane marking facility on S. Ewing Ave.;
    - a bike lane on Cedar Crest Blvd. from Surrey Ave. to Danube Dr. and on Sutherland Ave., reduction from two 15-foot travel lanes to two 10-foot travel lanes and two 5-foot bike lanes.

- a bike lane on E. Saner Ave.; reduction from two 20-foot travel lanes and a median to two 10-foot travel lanes, a median, two 6-foot bike lanes, and one 8-foot on-street parking lane.
- a buffered bike lane north of Surrey Ave. on Cedar Crest Blvd.; reduction from two 10-foot travel lanes and one 10-foot center turn lane to two 10-foot travel lanes, one 10-foot center turn lane, two 6-foot bike lanes, and two 4-foot buffers (between bike lane and travel lane).

3. Traffic calming measures can be implemented on arterials, collectors, and neighborhood streets to slow traffic and improve bicycle and pedestrian safety and accessibility including, but not limited to, the following options (as warranted).
    - Narrow travel lanes in each direction (10 to 11 feet in width)
    - Installation of an 8 foot parallel parking lane on one or both sides of the street
    - Reduce speeds to 35 miles per hour or less (implementation of speed humps may be necessary)
    - Installation of center turn lanes or medians to shorten pedestrian crossing distances
    - Installation of bulb-outs at busy intersections to shorten pedestrian crossing distances
    - Reduction in curb radii (4.6 m (15 feet) for residential streets and about 7.6 m (25 feet) for arterial streets with a substantial volume of turning buses and/or trucks) to slow right-turning vehicles.

    Each of these measures (on-street parking, narrowed travel lanes, medians, etc.) when implemented correctly has been proven to create a more pedestrian-friendly environment by reducing travel speeds and thus the occurrence of collisions. Additionally, these treatment options allow for safe accessibility to the transit station.
4. Sidewalks and ramps within the half-mile parameter of the station should be updated and/or implemented according to ADA standards as discussed in Appendix B. In addition, the following should be considered particularly at heavy intersections:
    - crosswalks
    - signage

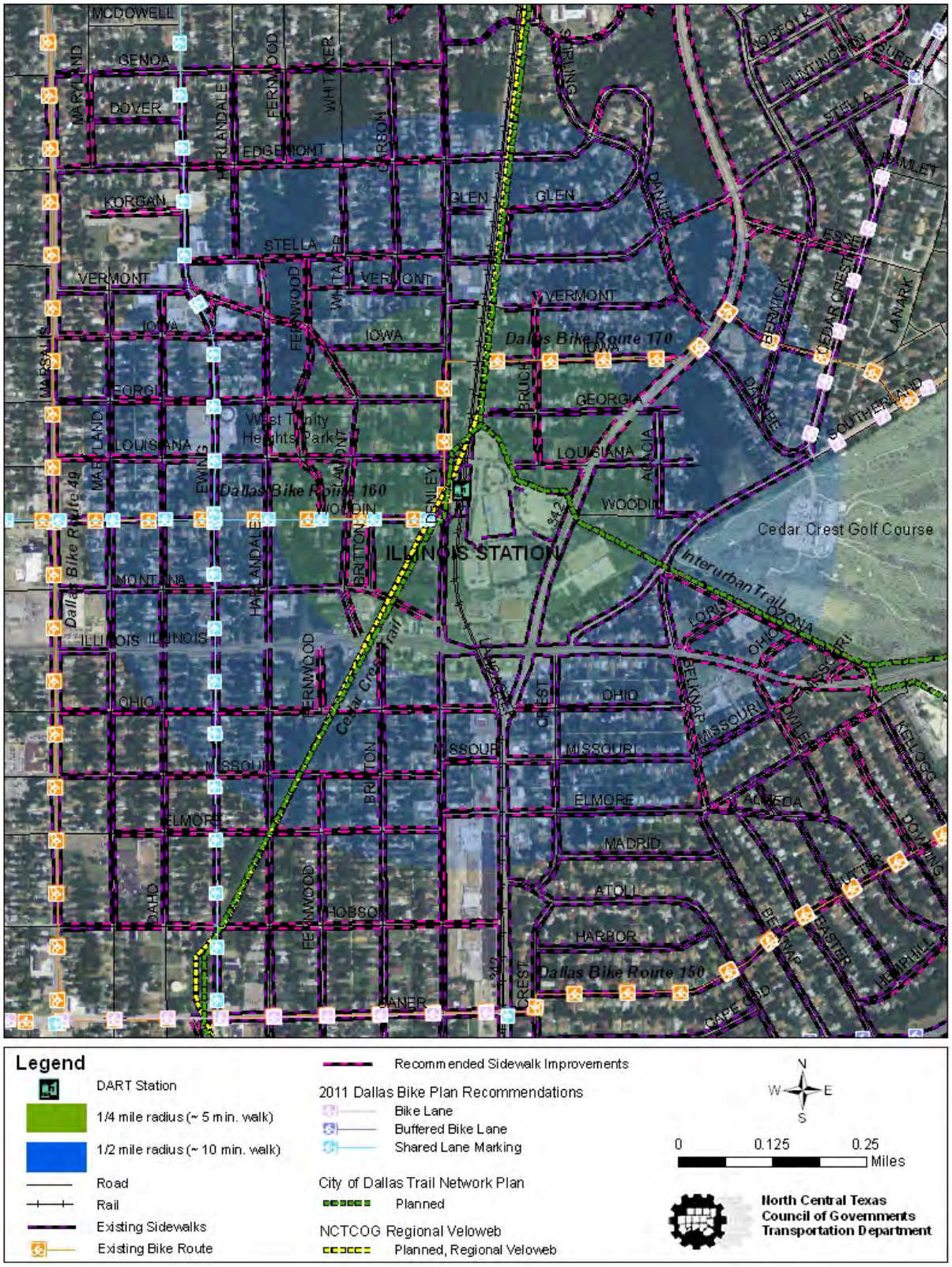
- pedestrian traffic signals

Additionally, expanded sidewalks (between 5 feet and 7 feet wide) with a buffer between the roadway should be implemented within a quarter-mile parameter of the station to encourage foot traffic and create a safer environment for pedestrians.

5. Cedar Crest Trail and the Interurban Trail, planned shared use paths identified on the Regional Veloweb and the City of Dallas Trail Network Plan, should be implemented according to standards identified in Appendix B to create a seamless off-street connection to Illinois Station.
6. Increased density in the area would improve streetscape quality and encourage pedestrian foot traffic (zoning allowances should be considered beforehand).
7. Driveways that separate many of the existing buildings on S. Denley Dr. should to be reconstructed for development, and parking should be diverted behind the buildings or on-street. In instances where this is not possible, the guidelines presented in Appendix B section should be considered for alternative options.
8. The street network surrounding the proposed TOD is in good block form, but in areas where there are existing cul-de-sacs, large blocks, or dead ends, shared use paths should be created to allow neighboring communities pedestrian and bicycle access to the station.
9. Bicycle end-of-trip facilities should also be provided within the half-mile parameter of the station at desired destinations as discussed in Appendix B:
    - secure bicycle parking
    - bicycle racks
    - lockers
10. Priority should be given to updating bicycle and pedestrian facilities and amenities on roadways and public rights-of-way within a half-mile parameter of the station location as illustrated in Exhibit 2-23 including implementation of the following as warranted:
    - street furnishings including pedestrian-scaled lighting, benches, kiosks, trash cans, planters, and landscaping
    - crosswalks and pedestrian traffic signals
    - on- and/or off-street bicycle facilities

11. Open space within the corridor should be preserved and made available to the public through parks, community gardens, or public plazas, in an effort to create a more welcoming environment. Open space can serve as a waiting or recreational area for patrons utilizing the transit station, as well as offer accessibility to the station. Pedestrian and bicycle amenities as discussed in Appendix B should be utilized.

Exhibit 2-23: Illinois Station Area Bicycle and Pedestrian Facility Recommendations

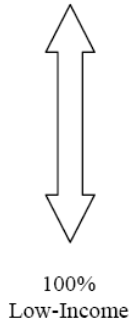


Recommendations

Increasing density, maintaining affordability, and preserving existing single family homes is a challenge in the Illinois station area. Although the population is only projected to increase by four percent by 2035, the station area needs sustainable housing development that is affordable and conducive to transit. Eighty-four percent of the housing units in the station area were constructed in 1960 or earlier, and many are in disrepair (Exhibit 2-12). Housing density is a concern because there is only one apartment complex and 20 duplexes within a quarter-mile of the station. Because many of the existing homes will need to be replaced in the next 25 years, new and affordable housing is needed. Constructing multi-family housing in the station area not only provides affordable housing options for a larger number of residents, but provides much needed density as well.

The biggest catalyst for any development in the Illinois Station area is the station itself. It creates a platform for higher density mixed income housing that not only provides housing opportunities without displacing the existing community, but invites higher income groups, which can stimulate economic development in the station area. Exhibit 2-24 describes the mix of several mixed income housing scenarios. The best scenario for the Illinois Station is the Market Rate Inclusion category, which is primarily low-income housing with some market rate units. This would be the best mixed income housing mix for the station area given that the median household income for the majority of the station area is just over $21,000, with a small percentage making just over $33,000. To accomplish this, a mixed income housing feasibility study is needed for the station area.

Exhibit 2-24: Categories of Mixed Income Development and Incomes Served



Category	Description	Illustrative Mix of Incomes	
		% of Units	*% of AMI*
Moderate-Income Inclusion	Predominately market-rate developments that include units for moderate-income households.	80% 20	Market 80%
Low-Income Inclusion	Predominately market-rate developments that include units for low-income households.	80 20	Market 50
Broad Range of Incomes	Serves market-rate, moderate income or low-income households, and extremely low-income households.	33 33 33	Market 60 30
Market-Rate Inclusion	Predominately low income developments that include market-rate units.	20 80	Market 50/60
Affordable Mix	Serves moderate or low-income and extremely low-income households.	50 50	60 30

Source: Alastair Smith, 2002. Mixed Income Housing Developments: Promises and reality

Increasing density will allow for additional people to live near and utilize transit. At the same time single family homes should not be dwarfed by multi-story buildings. Therefore, the Residential Transition (RTN) district is recommended for areas within the one-quarter mile buffer that have established neighborhoods. Development allowed in the RTN district includes townhouses, manor house, single-family houses, civic buildings, and open space lots. The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended in the area (Exhibit 2-25).

Exhibit 2-25: Use Chart for the Illinois Station RTN District

		Townhouse	Single-Family House	Manor House	Civic Building	Open Space
Residential	Single family living	x	x	x		
	Multifamily living	x		x		
	Group living	x		x		
Civic	Community service: general				o	
	Community service: museum, library				x	
	Day care				x	
	Educational				x	
	Government service				x	
	Park or Open space					x
	Transit Station				x	
	Utilities					x
Place of Worship	Place of Worship				x	

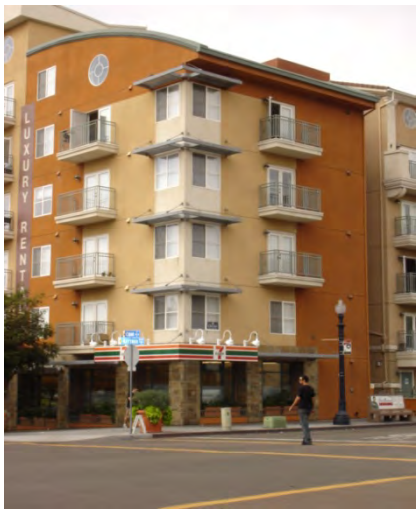
x = permitted; o = specific use permit; blank cell = not permitted

Dilapidated vacant houses and empty lots could be the targeted areas to add different housing choices: townhomes and manor homes. Building new single-family houses should be minimal, and preferably avoided in the one-quarter mile buffer zone of the station to allow for more density. The current demographics show that those between 15 and 64 years of age make up more than half of the area's population. It is essential that this age group will need housing options, whether multi-family or senior housing. Incentives to attract diversity of housing price, type, and affordability are strongly encouraged.

The city council of Vancouver, Canada approved secondary suites in condominiums. The same concept could be applied to townhouses and manor homes in the area. Adding a suite that has its own bathroom and kitchen area to new residential housing units could provide for increased density without compromising the existing neighborhoods' character. This would provide for housing affordability for renting a small unit and add extra income to home buyers who rent out the units. Additionally, families could "age in place" if desired. The secondary suite can be rented before the family has children and again after the children leave home.

Current commercial and retail zoning is recommended to be rezoned to the Walkable Urban Mixed Use (WMU) district with a low intensity (WMU-3, WMU-5). Mixed-use shop front, single-story shop front, general commercial, apartment, townhouse stacked, townhouse, manor house, civic building, and open space are the allowed developments in the WMU-3, WMU-5 district, according to the Form District ordinance. However, it is recommended that single-story shop fronts be excluded from the area to increase compact development around the one-quarter mile buffer of the station.

Current 7 Eleven in the Illinois Station area. It provides gasoline services and the entrance is set back away from the sidewalk.



Current 7 Eleven in San Diego, California. No gasoline services provided. Luxury rentals are located above the convenience store. The entrance is easily accessible from the sidewalk.

The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended for the area (Exhibit 2-26). The WMU-3, WMU-5 district will add more housing diversity and density and allow for the area to be more walkable. Eateries and car maintenance facilities occupy most of services within one-quarter mile buffer of the transit station. The Use Chart in the Form District ordinance allows for drive-through facilities to be granted through a specific use permit, however, because of the close proximity to rail and to encourage safe pedestrian activity, new establishments drive-through window service should be minimized within at least one-quarter mile up to one-half mile buffer of the station. Commercial parking is also an allowed use but this should not be directly adjacent to the transit station. Additionally, new vehicle services and sales should also be prohibited within at least one-quarter mile up to one-half mile buffer of the transit station. Adding more diverse services that the community and transit patrons could walk to can decrease auto usage and increase pedestrian activity and transit ridership. Additionally, encouraging different services may help bring jobs to an area that has a high unemployment rate.

View a summary of the bicycle and pedestrian recommendations for all four stations in Chapter 7, Corridor Connections, Exhibit 7-1.

Exhibit 2-26: Use Chart for the Illinois Station WMU -3, WMU -5 District

		Mixed Use		Single Story Shopfront	General Commercial	Apartment	Townhouse Stacked		Townhouse	Manor House	Civic Building	Open Space
		Ground Story	Upper Story	Ground Story	All Stories	All Stories	Ground Story	Upper Story	All Stories	All Stories	All Stories	--
Residential	Single-family living		x				x	x	x	x		
	Multi-family living		x			x	x	x	x	x		
	Group living		x			x	x	x	x	x		
Civic	Community service: general	o	o		x		o				o	
	Community service: museum, library	x	x		x		x				x	
	Day care	x	x		x						x	
	Educational	x	x		x						x	
	Government service	x	x	o	x						x	
	Park or Open space											x
	Social service	o	o	o	o							
	Transit Station	x	x	x	x						x	
	Utilities											x
Place of Worship	Place of Worship	x	x		x						x	
Office	Medical	x	x		x							
	Office	x	x		x		x					
Retail	Restaurant or Bar	x										
	Retail Sales	x										
Service and Entertainment	Commercial amusement (inside)	o	o		o							
	Indoor recreation	x	x		x							
	Personal service	x	x		x							
	Animal care	x	x		x							
Commerce	Commercial parking	x	x	o	x							o
	Passenger terminal limited to a Helistop		o	o	o							
	Overnight lodging		x	o	x							

x = permitted; o = specific use permit; blank cell = not permitted

3. KIEST STATION ASSESSMENT AND RECOMMENDATIONS

Data for the Kiest Station area include demographics, zoning, land use, commercial and housing, and bike/pedestrian conditions. A summary of each topic is included in this chapter. Recommendations for improvements are included at the end of the station's section.

Demographics

The total population within a quarter mile of the Kiest Station area in 2000 was 1,717. By 2010, the population increased to 3,223, an increase of 88 percent (Census 2010). NCTCOG forecasts indicate that the population will decrease to 3,112 by 2035, a decline of three percent (Exhibit 3-1). African Americans accounted for 61 percent of the population; 16 percent were White alone (Exhibit 3-2). Residents in the 'Other' racial category accounted for 21 percent of the population. According to the Census, 38.01 percent of the population was Hispanic (Exhibit 3-3).

Exhibit 3-3 provides the population growth around the Lancaster Station area between 2000 and 2035. The 2000 and 2010 population were measured at the block level, and they 2035 population projection was taken at the TSZ level. The difference in geography may be the cause of the 3.44 percent population decrease around the Kiest Station by 2035.

Exhibit 3-1: Kiest Station Area Population

	Station Area Population				
Station	**2000 Population**	**Percent Change**	**2010 Population**	**2035 Forecast**	**Percent Change**
Illinois Station	1,082	1.29%	1,096	1,138	3.83%
Kiest Station	1,717	87.71%	3,223	3,112	-3.44%
VA Medical Center	1,959	12.25%	2,199	2,639	20.01%
Ledbetter Station	1,351	123.98%	3,026	4,618	52.61%
Total	6,109	56.23%	9,544	11,507	20.57%

Source: Census 2000; Census 2010; NCTCOG 2035 Demographic Forecast

Exhibit 3-2: Kiest Station Area Total Population by Race

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
White Alone	95	5.53%	509	15.79%	435.79%
Black or African American Alone	1,411	82.18%	1,950	60.50%	38.20%
American Indian and Alaska Native alone	3	0.17%	17	0.53%	466.67%
Asian or Pacific Islander alone	0	0.00%	3	0.09%	
Other	189	12.11%	687	21.32%	263.49%
Multi-Racial	19	1.11%	57	1.77%	200.00%
Total	1,717	100.00%	3,223	100.00%	87.71%

Source: Census 2000; Census 2010

Exhibit 3-3: Kiest Station Area Hispanic and Non-Hispanic Population

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
Hispanic or Latino	290	16.89%	1,225	38.01%	322.41%
Not Hispanic or Latino	1,427	83.11%	1,998	61.99%	40.01%
Total Population	1,717	100.00%	3,223	100.00%	322.41%

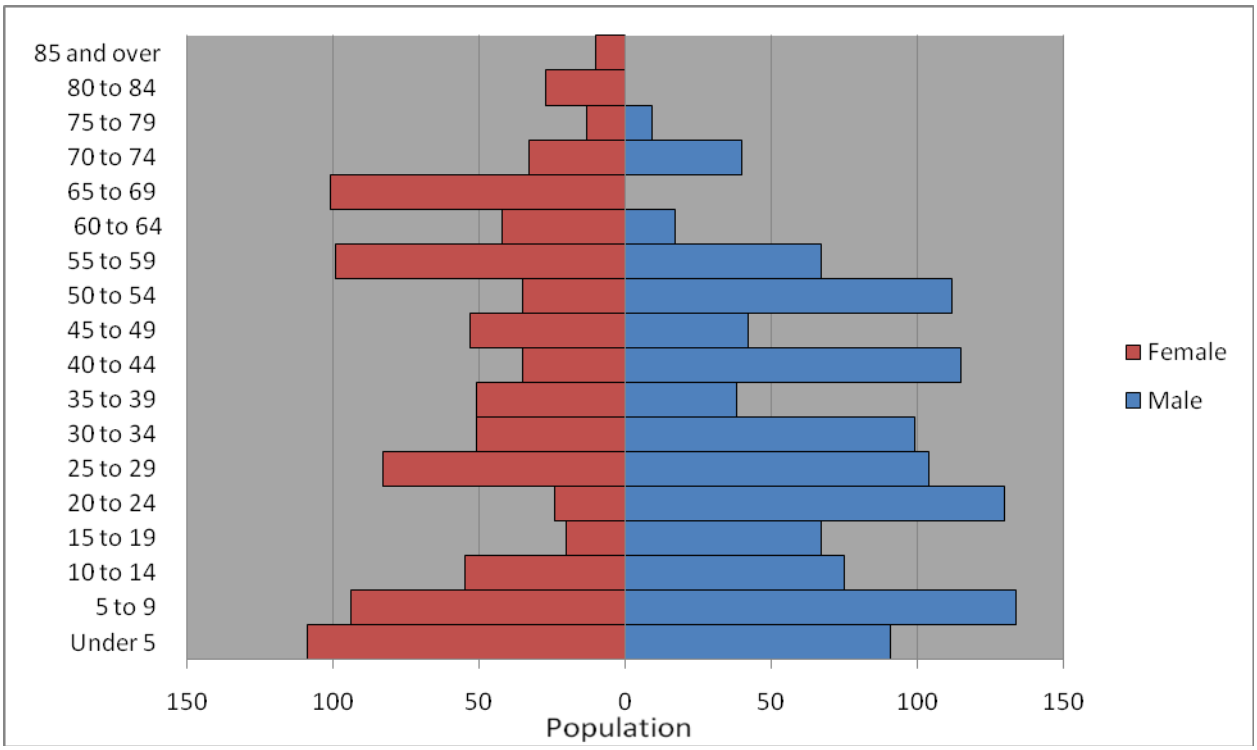
Source: Census 2000; Census 2010

The ages of residents in the Kiest Station area were widely disbursed in 2009 according to the 2005-2009 American Community Survey, though 48 percent of the population was under 30 years old (Exhibit 3-4). The largest age cohort was between five and nine, representing 11 percent of the station area population; the smallest cohort, with less than one percent, was 85 and older. Sixty-two percent of the total population was between the ages of 15 and 64.

The largest male age cohort in the station area was five to nine years of age with 12 percent of the male population. Males ages 15 to 64 made up 69 percent of the total male population in the Kiest Station area.

The largest percentage of females in the station area, 12 percent, was under five years old. Fifty-two percent of the female population was between 15 and 64.

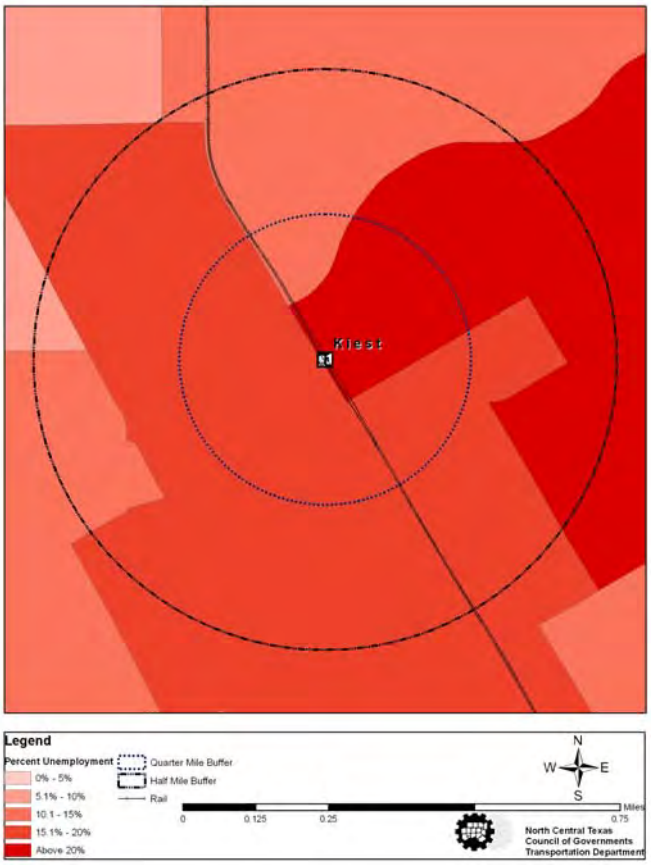
Exhibit 3-4: Kiest Station Age Distribution



Source: 2005-2009 American Community Survey

The Kiest Station area unemployment rate was measured within one-half mile of the station at the Census tract level. According to the 2005-2009 American Community Survey, the unemployment rate ranged between 15 percent and 22 percent in the Kiest Station area (Exhibit 3-5). Roughly 22 percent of the working age residents just east of the station were unemployed in 2009. Slightly over 17 percent of residents east of the station were unemployed and residents to the North had an unemployment rate around 14 percent (Exhibit 3-6). The Kiest area unemployment rate is similar to the corridor as a whole, which is just over 16 percent. This is high considering the unemployment rate for the City of Dallas as a whole was only 5.4 percent.

Exhibit 3-5: Kiest Station Area Unemployment Rate



Source: 2005-2009 American Community Survey

Exhibit 3-6: Kiest Station Area Unemployment Rate

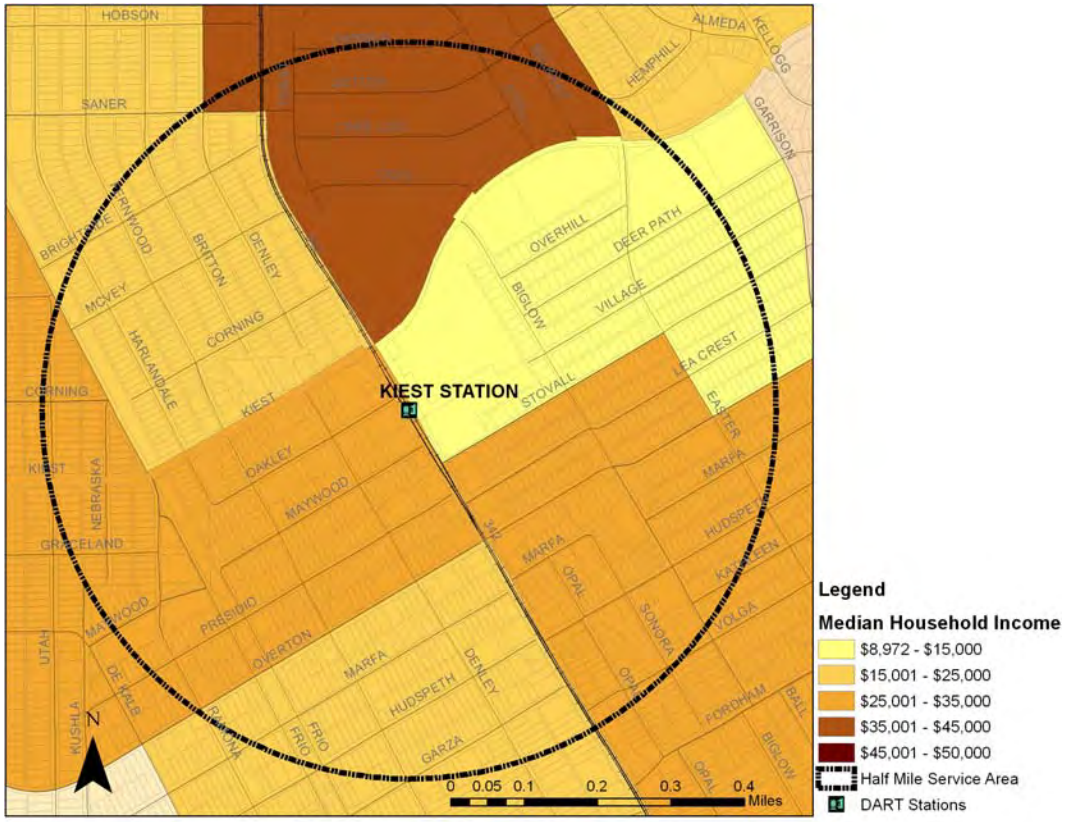
Census Tract	Population 16 Years and Over in Labor Force	Population 16 Years and Over in Labor Force, Unemployed	Percent Unemployment
57	1652	292	17.68%
88.01	919	130	14.15%
88.02	2088	583	27.92%
Total	4659	1005	21.57%

Source: 2005-2009 American Community Survey

NCTCOG's Research and Information Services (RIS) Department keeps track of major employers, those which have 80 or more employees. Holmes Middle School, a major employer with 80 estimated employees, is more than one-half mile away from the station, but within one of the census tracts that intersect the station.

Although the unemployment rate for the Kiest Station area covers a broader geography, it is reflective of the change in median household income between 2000 and 2009. The 2010 median household income in the Kiest Station area ranged between $13,000 and $41,000; in 2000, incomes ranged from $18,000 to $34,000 (Exhibit 3-7). Despite the increase in the overall maximum median household income in the station area, the household incomes decreased for many households in the station area (Exhibit 3-8). The median household income for those residing in the western portion of the study area was $28,697, a decrease of 15 percent. Households on the east side of the light rail line had a median income of $13,098, 29 percent lower than 2000. Northwestern residents had a median household income of $18,548, a decrease of nearly 36 percent. Incomes southeast of the station were relatively stable at $25,913, a decrease of less than one percent. Interestingly, the median household income of residents directly north of the station increased 54 percent to $40,125.

Exhibit 3-7: Kiest Station Area 2009 Median Household Income



Source: 2005-2009 American Community Survey

Exhibit 3-8: 2000 - 2009 Kiest Station Area Median Household Income Comparison

Kiest Station	2000 Median Household Income	2010 Median Household Income	Percent Change
East	$18,452	$13,098	-29.02%
Northwest	$28,804	$18,548	-35.61%
Southeast	$25,938	$25,913	-0.10%
West	$33,750	$28,697	-14.97%
North	$26,125	$40,125	53.59%

Source: 2005-2009 American Community Survey; Census 2000

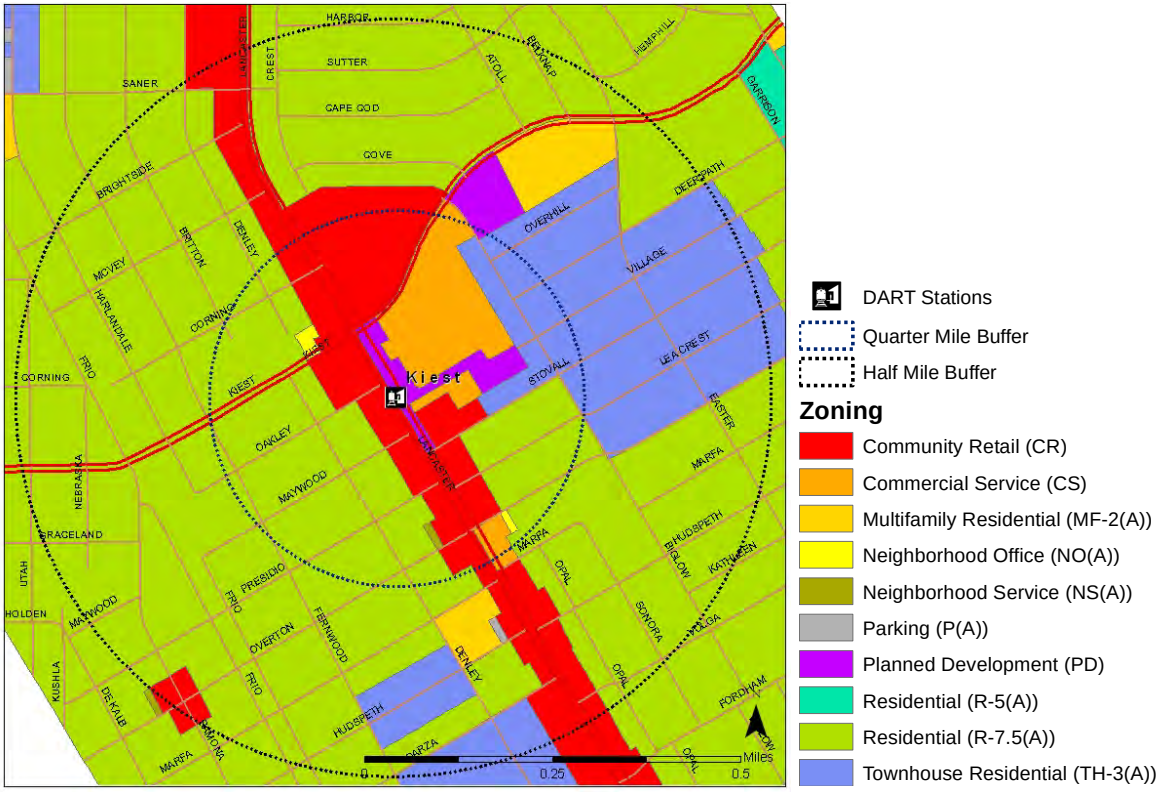
The population around the Kiest Station area is in transitional phase, changing both ethnically and economically. The percentage of Whites and residents in the 'Other' racial category increased by 436 percent and 263 percent respectively; the number of multiracial residents increased 200 percent (Exhibit 3-2). Hispanics increased 322 percent. This, coupled with the dispersion in the age of station area residents, is an indicator that the station area is becoming more diverse. Simultaneous to increased diversity, the employment rate and median household income decreased in all but one sector of the station area. This sector, located north of the station, had the lowest unemployment rate in the station area, and was the only sector with a higher median household income than 2000 (Exhibit 3-8). This transition will affect future commercial and housing development in the station area because the station area's demographic profile may be dramatically different in the future. Future zoning and land use decisions need to reflect these changes.

Current Zoning and Land Use

The Kiest Station's one-quarter mile buffer is zoned predominately for single-family residential, followed by community retail, community services, and a smaller portion of neighborhood office, neighborhood services, and townhome residential. Outside the one-quarter mile radius but within the one-half mile buffer of the station a few parcels are zoned multifamily residential and parking. No mixed-use and very minimal high density zoning exists in the area. Refer to Exhibit 3-9 for an image of the zoning around the Kiest Station.

This image shows an overview of the Kiest Station area. In this image the parking lots between the sidewalks and the retail can be seen. (2009)

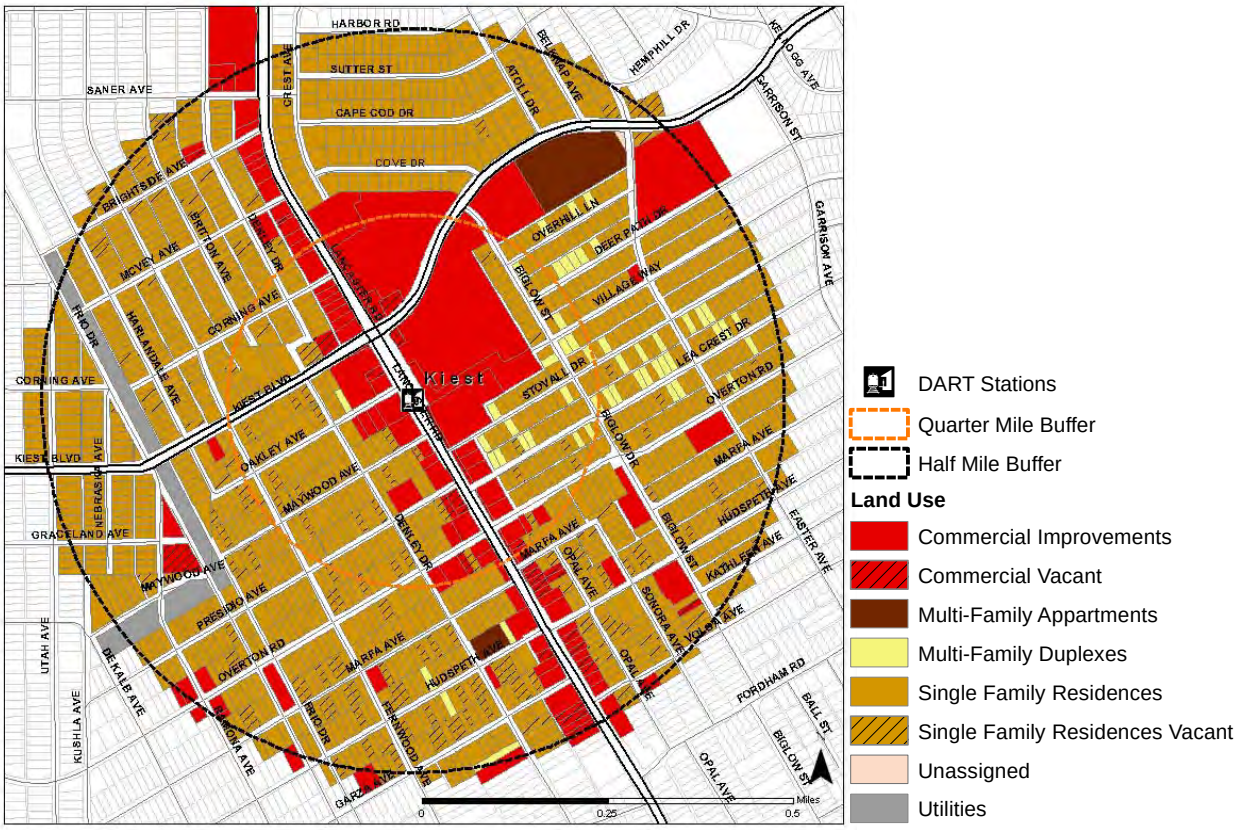
Exhibit 3-9: Zoning Within One-Half Mile of the Kiest Station



Source: City of Dallas, 2009

The land use around the one-quarter mile buffer from the Kiest Station is an even split between residential (single-family) and commercial. Exhibit 3-10 shows an overall view of the land use surrounding the Kiest station. There are a total of 381 parcels and about 118 acres within a one-quarter mile radius of the station. Single family accounts for 302 parcels out of 381 making up about 57 acres which is 49 percent; commercial claims 61 parcels making up about 57 acres; multi-family residential claims 18 parcels making up about three acres (Exhibit 3-11). As you move further away from the station the continuing dominating use is still single family. Within a one-half mile radius of the station single family accounts for 1,505 parcels out of 1,697 making up about 292 acres or 69 percent; commercial 133 parcels making up about 100 acres; multi-family residential 53 parcels making up about 16 acres; and utilities six parcels making up about 16 acres (Exhibit 3-12). There are a total of 1,698 parcels and about 424 acres within the one-half mile radius.

Exhibit 3-10: Land Use Within One-Half Mile of the Kiest Station



Source: Dallas Central Appraisal District, 2009. Unassigned indicates that data was not available.

Exhibit 3-11: Land Use Parcels Within One-Quarter Mile of the Kiest Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	43		50.44		
Commercial - Vacant	18	61	7.05	57.49	48.90%
Multi Family Residences - Duplex	18	18	2.93	2.93	2.49%
Single Family Residences	264		50.82		
Single Family Residences - Vacant	38	302	6.32	57.14	48.60%
Grand Total	381	381	118	117.56	100.00%

Source: Dallas Central Appraisal District, 2009.

Exhibit 3-12: Land Use Parcels Within One-Half Mile of the Kiest Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	95		88.12		
Commercial - Vacant	38	133	11.55	99.67	23.51%
Utilities	6	6	15.80	15.80	3.73%
Multi Family Residences - Apartments	2		7.42		
Multi Family Residences - Duplexes	51	53	8.99	16.41	3.87%
Single Family Residences	1344		262.49		
Single Family Residences - Vacant	161	1505	29.42	291.91	68.87%
Unassigned	1	1	0.08	0.08	0.02%
Grand Total	1698	1698	424	423.87	100.00%

Source: Dallas Central Appraisal District, 2009. An unassigned category or zero may mean that data was not available.

Commercial/Retail Assessment

Commercial zoning falls second to single family residences within a quarter-mile buffer from the Kiest Station, with about 50 percent of the acres designated commercial under the land use category (Exhibit 3-11). Of the 61 commercial parcels, 18 are vacant; this makes up about seven acres or 12 percent, which is relatively small. Vacant parcels indicate that no buildings are present, however as observed in the aerial photography some of these sites do contain surface parking lots. Current commercial and retail development does provide essential amenities for the area including but not limited to a supermarket, shopping, banks, and eateries. However, the building developments are not compatible with a light rail

station. Development components such as building setbacks and stand-alone buildings add a buffer of parking between the sidewalk and the building entrance and are not conducive to pedestrians. First, it does not allow for compact development. Second, it does not encourage the use of patrons to access the site by alternative modes such as walking or biking. A strong emphasis should be placed on the pedestrian scale because transit patrons may be walking to and from the light rail station to their next destination. Additionally, some buildings lack an inviting façade which may encourage business.

The years built for commercial improvements along the rail line range from 1949 to 2006. The total value, which includes land value and improvement value, range from $22,480 to $2,326,970. Images of the existing commercial and retail along the rail line and within one-quarter mile of the station are shown on the following pages.

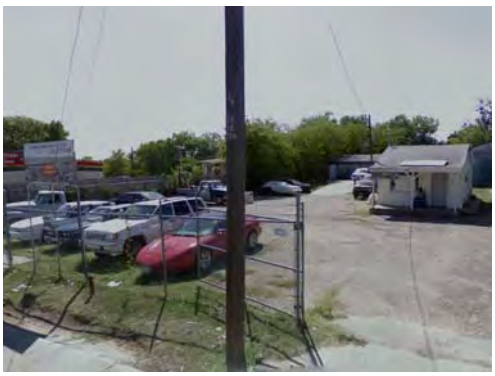
Fiesta Supermarket located at 3030 S. Lancaster Rd.
While a great resource for the community, the development does not take advantage of the full potential of pedestrian activity due to a lack of shade trees, a large driveway and the market entrance that is oriented away from the sidewalk. However, it is great asset for people to reach a supermarket via the transit station without needing an automobile.

3030 S. Lancaster Rd. looking south. The property is not ideally designed for non-auto access. The landscaping looks in good condition, but does not provide enough shade for pedestrians. The parking lot acts as a buffer between the sidewalk and business entrance.

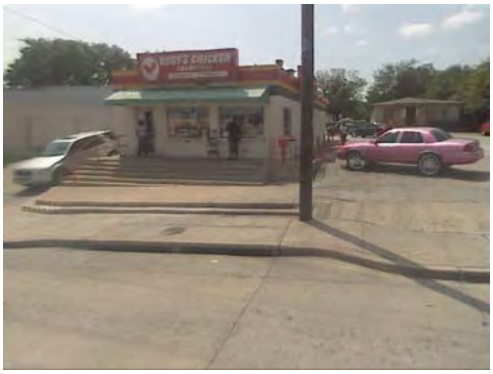
3050 S. Lancaster Rd. The development is auto-oriented. Retail exists and while it may offer shopping for the neighborhood, the building setback does not provide good pedestrian access.

Wendy's Restaurant located at 1507 Kiest Blvd. The restaurant provides drive-through service only; no dine in option which is not conducive to a TOD as it only caters to patrons with an automobile.

Lancaster Kiest Branch located at 3039 S. Lancaster Rd. A site visit indicated that this building is no longer serving as a public library. Windows and doors were boarded up. This may be surplus City property with revitalization opportunities.

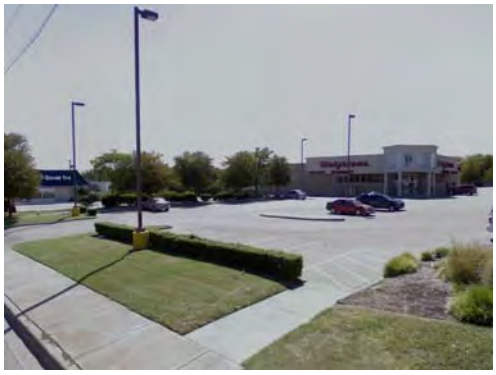


Exotic Auto Sales located at 3107 S. Lancaster Rd. The property is not the highest and best use for the future TOD area and would service a minimal amount of clients and those services would not be tied to the rail access. This business sells automobiles. The landscaping needs maintenance.



Rudy's Chicken located at 3115 S. Lancaster Rd. The eatery is known to be well-visited. The stairs to the entrance from the sidewalk is a positive attraction for pedestrian access. A handicap ramp is located on the right side (red rail). Proximity of parking and drive-through does not make for a pedestrian-friendly environment.

3123 S. Lancaster Rd. The building was empty as witnessed through a site visit. The building's facade is in need of repairs.

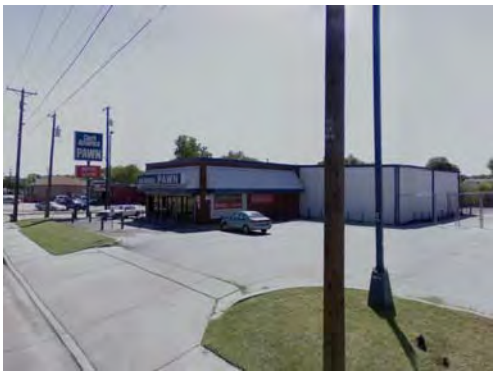


Walgreens located at 3211 S. Lancaster Rd.
The building and landscaping appears in good condition. However, the stand-alone building and abundant parking do not make it safe or appealing for pedestrians to want to walk to the establishment.

3225 S. Lancaster Rd. This property is used as a parking lot.

Income Tax located at 3231 S. Lancaster Rd. The property contains a free-standing building surrounded with parking.

EX Pawn Shop located at 3311 S. Lancaster Rd. About half the parcel is occupied by parking.



Cash America Pawn located at 3335 S. Lancaster Rd. The business consists of a free-standing building surrounded by parking.

TD's BBQ located at 3403 S. Lancaster Rd. The property contains a free-standing building with the entrance buffered by parking.

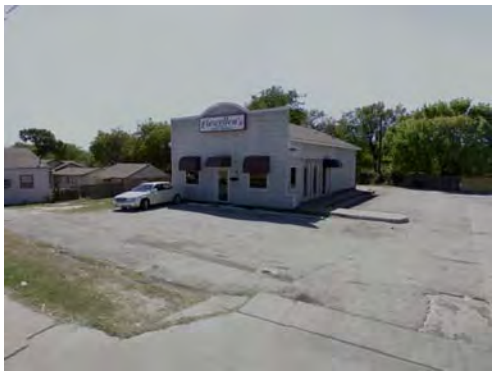
Wholesale Beauty Supply located at 3411 S. Lancaster Rd. The property contains a free-standing building with parking in the front.

DK Foot & Casual located at 3417 S. Lancaster Rd. The property contains a free standing building with parking in the front.

Surface parking lot for Bank of America is located at 3501 S. Lancaster Rd. and 3511 Lancaster Rd. The property serves as a parking lot.

Bank of America located at 3523 S. Lancaster Rd. Free-standing building with parking in between the sidewalk and the entrance. The building and landscaping are in good condition. However, the parking serves as a buffer for pedestrian access from the sidewalk and the building entrance. There is no clear connection to the station.

Church's Chicken located at 3605 S. Lancaster Rd. The property contains a free-standing building buffered by parking. A drive-through service is also provided.



Flewellen's Hair Salon located at 3611 S. Lancaster Rd. The property contains a free-standing building surrounded with parking.

3202 S. Lancaster Rd. The site is vacant and currently serves as parking for the nearby commercial uses.

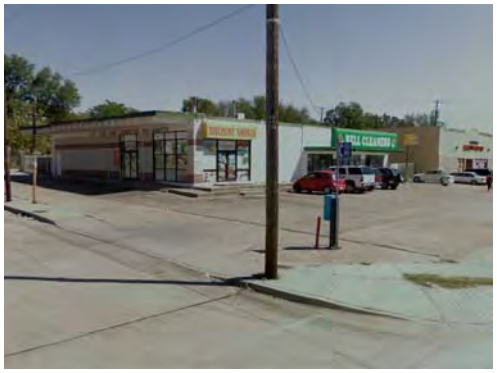
Retail center located at 3200 S. Lancaster Rd. Parking buffers the entrance from the sidewalk.

Kiest Station Park and Ride located at 3304 S. Lancaster Rd. Some of the parking acts as a buffer between the sidewalk and the retail stores. Additional parking is tucked behind the retail stores which is the ideal placement for parking lots.

Chester Clinic located at 3320 S. Lancaster Rd.
Medical Services with parking in the front. Trees are present; however they are located closer to the parking lot than the sidewalk. A large driveway is present.

Payless Shoe Source located at 3404 S. Lancaster Rd. The property contains a free-standing building with parking in the front. No landscaping is present.

Pizza King located at 3410 S. Lancaster Rd. and Buffo's Philly Cheese Steak located at 3414 S. Lancaster Rd. The businesses are situated close together with very minimal side buffer; however the parking is located in the front. No landscaping is present.



3508 S. Lancaster Rd. This property contains a building that provides tobacco products and dry cleaners. The property is surrounded by parking in the front.

Beauty Supply located at 3520 S. Lancaster Rd. The property contains a free-standing building with parking in the front.

7 Eleven located at 3602 S. Lancaster Rd. The property contains a gasoline station with a convenience store.

Parking located at 3620 S. Lancaster Rd. The property's parking buffers the building entrance from the sidewalk.

Lantern Dental located at 3618 S. Lancaster Rd. Built in 2006, the building is buffered by parking.

This station area contains more commercial and retail services compared to the other Lancaster Corridor station areas. While the services may provide benefits to the neighborhood's needs and economy, the development designs are not conducive to create a compact and walkable environment for TOD.

Appendix C provides data from the 2009 Dallas Central Appraisal District. These parcels are a sample of the commercial business that is located along the rail line and within the one-quarter mile buffer of the station.

Housing Assessment

According to Dallas Central Appraisal District records, there were 1,397 housing units within one-half mile of Kiest Station in 2009 (Exhibit 3-13). The majority of the units, 70 percent, were constructed between 1941 and 1960. Ninety-five percent of the housing units in the Kiest Station area were constructed in 1960 or earlier. Despite their age, 82 percent of the housing units in the station area were occupied in 2009 (Exhibit 3-14). Fifty-nine percent of the units were owner occupied.

Exhibit 3-13: Lancaster Corridor One-Quarter Mile from the Station
Housing Unit Construction Year

Year Constructed	Illinois	Kiest	VA Medical Center*	Ledbetter*
Unknown	3	2	7	4
Pre 1920	26	4	20	1
1920-1940	670	342	203	94
1941-1960	437	976	588	391
1961-1980	30	29	72	65
1981-2000	15	15	5	5
2001-2008	39	29	30	11
Total	1220	1397	925	571

* Parcels in this station area overlap with another station area

Source: Dallas Central Appraisal District, 2009

Exhibit 3-14: 2000 and 2009 Lancaster Corridor Housing Tenure

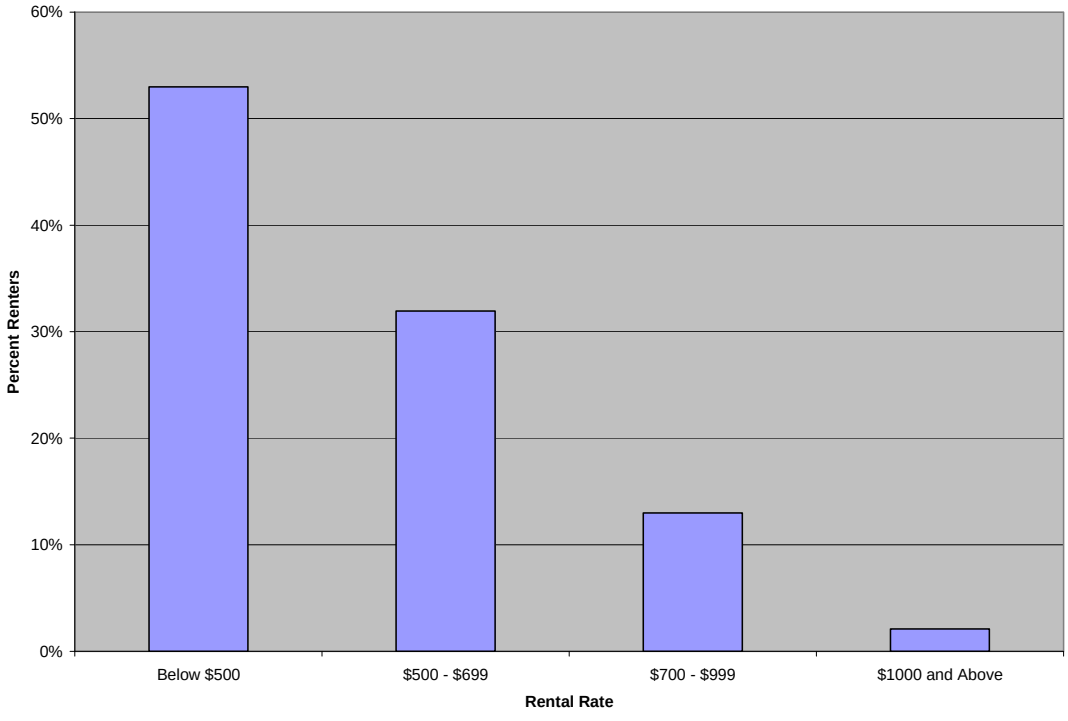
Station	2000 Percent Occupied	2000 Percent Owner Occupied	2009 Percent Occupied	2009 Percent Owner Occupied
Illinois	90.19%	64.72%	87.65%	58.84%
Kiest	93.85%	73.28%	82.44%	58.99%
VA Medical Center	90.22%	60.37%	74.19%	63.65%
Ledbetter	95.66%	74.60%	81.88%	91.19%
Total	92.69%	69.09%	69.99%	92.64%

Source: 2005-2009 American Community Survey, Census 2000

Over 96 percent of the housing units in the Kiest Station area were constructed in 1960 or earlier (Exhibit 3-13). One benefit of older housing stock is affordable housing costs. In 2000, many of the owner occupied households in the Kiest Station area had no mortgage, and monthly ownership costs of $100 or less, though the habitability and conditions of such a residence should be examined (Census 2000). Most rents, however, were also below $500 per month (Exhibit 3-15).

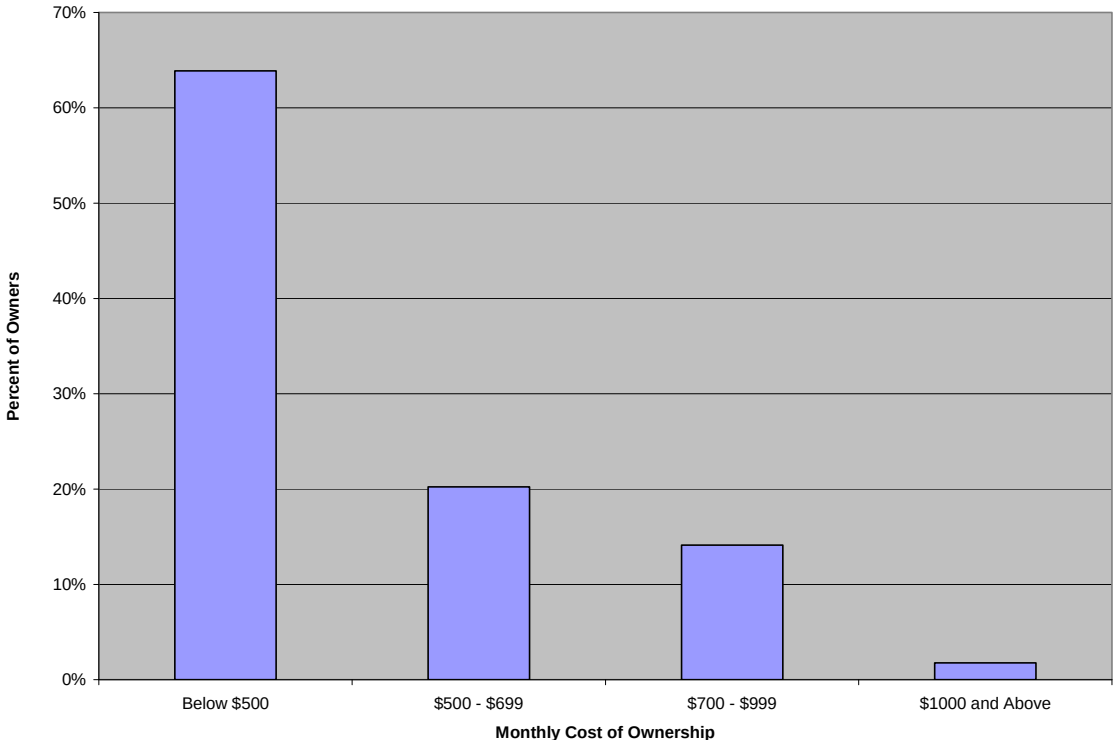
By 2009, the average rent around the Kiest Station ranged between $500 and $910 per month, a rate unaffordable for many of the area residents. For housing to be affordable in the Kiest Station area, residents west of the station who earn $28,697 per year should not spend more than $717 a month on housing costs; residents in the east, having a median household of $13,098 should spend no more than $327. Residents residing in the northern sector of the station, and earning $40,125 can afford $1,003 per month; residents in the northwest and southeastern sectors earn $18,548, and $25, 913, and can afford $464 and $648 respectively (Exhibit 3-16). New housing options are limited for residents in the poorer sectors of the station area unless they are heavily subsidized.

Exhibit 3-15: Kiest Station Area Rent Rates



Source: Census 2000

Exhibit 3-16: Kiest Station Area Monthly Cost of Ownership for Owner Occupied Housing



Source: Census 2000

The Kiest Station Area had the highest percentage of owner occupied households with monthly housing expenses totaling under $500 a month in 2000; none of these residents, however, had a monthly mortgage (Exhibit 3-15). The Kiest area also had the lowest percentage of residents in the Lancaster corridor paying above $1000 per month with 1.76 percent. By 2009, however, the average mortgage rate increased to between $850 and $920 per month (2005-2009 American Community Survey). Much of this increase can be attributed to increased property values and the subsequent property tax increase. According to the Dallas Central Appraisal District, property values increased in the Kiest station area by 20 percent between 2002 and 2009. The increased property values may also affect rental rates if property owners pass the increased cost of ownership to renters. This, coupled with declining incomes, affected housing affordability for current residents in the Kiest Station Area.

Single-family housing does not exist along the rail line and within one-quarter mile buffer from the station. Residential (single-family) is present as you move away from the rail line. This is a benefit as the City

considers redevelopment along the rail line, residents will not be displaced. A couple of multi-family apartments are within the one-half mile radius. Multi-family duplexes are seen in the eastern side of the station and start to increase from one-quarter to one-half mile from the station.

A TOD assessment should identify opportunities and constraints related to non-motorized modes of transportation as these modes promote accessibility to the station and surrounding developments while allowing for densities that support a TOD by potentially reducing parking needs. The following section outlines the bicycle and pedestrian conditions at and surrounding the Illinois Station.

Bicycle/Pedestrian Conditions

A bicycle and pedestrian needs assessment is critical to the success of any TOD. Therefore, the following section outlines bicycle and pedestrian opportunities and constraints at and surrounding the Kiest Station.

The Kiest Station has significant opportunities for bicycle and pedestrian accessibility and connectivity. These characteristics are discussed in further detail below.

Opportunities:

- Existing sidewalks on S. Lancaster Rd. on the east and west sides of Kiest Station with nominal gaps.
- Sidewalks surrounding Kiest Station have connections to adjoining neighborhoods via sidewalks on E. Kiest Blvd., Maywood Ave., and Stovall Dr.
- The east side of the station, which is connected to the park-and-ride lot, includes a signalized pedestrian crossing which allows pedestrians and bicyclist to cross while all motor vehicle traffic is stopped.
- Texturized concrete is in place at pedestrian crosswalks to Kiest Station delineating the pedestrian walkway, and on curb ramps surrounding the station which serve as a detectable warning for passengers with mobility-impairments (Exhibit 3-17).

- An existing ramp leading to the station platform allows for accessibility by passengers with mobility-impairments, as well as a lift to allow for access onto the train (Exhibit 3-18).
- Multimodal coordination exists as the station has direct connections to DART bus routes 405, 444, 522, and 541.
- Greater Dallas Bike Plan routes 150 and 140 exist on E. Saner Ave., Crest St., Sutter St., and E. Overton Rd. allowing bicyclists direct access to the station from adjoining neighborhoods.
- The 2011 Dallas Bike Plan includes several on-street bicycle facilities including a shared lane marking facility on S. Ewing Ave. to E. Saner Ave., on S. Lancaster Rd. from E. Saner Ave. to E. Overton Rd., a bike lane on E. Saner to S. Lancaster Rd., and a buffered bike lane on E. Kiest Blvd. These facilities are discussed in further detail in the recommendations section.
- Existing bicycle amenities include a bike rack and ramp which allows accessibility onto the station platform (Exhibit 3-19).
- DART allows clean bicycles on-board all rail lines (provided they are not posing a safety threat), and has installed bicycle carrier racks on its entire fleet of buses, further enhancing a seamless multimodal connection.
- Significant signage exists surrounding the station, as well as pedestrian traffic signals and crosswalks at major intersections including E. Kiest Blvd. and E. Overton Rd.
- The area surrounding the station has an interconnected grid pattern, allowing for easy routes and accessibility by adjacent neighborhoods.
- Public amenities including trash receptacles, telephones, ticket vending machines, and sheltered seating are present at the station creating a more pleasant experience for passengers.
- Station art is located on the eastside of S. Lancaster Rd. and the southwest corner of the Lancaster-Kiest Shopping Center (Exhibit 3-20). The design reflects the importance of family and multiculturalism, and the large sculpture, designed by Albert Shaw, draws on both African and Western design embracing all community members.

- The park and ride lot is located to the rear of the Lancaster-Kiest Shopping Center, creating a prime location for a pedestrian-friendly development to be located, as passengers utilizing the park and ride lot will be forced to walk through the development.
- Cedar Crest Trail, a planned multiuse trail on the Regional Veloweb and the City of Dallas Trail Network Plan, extends from IH35 E just south of Holden Ave. and continues north along Frio Dr. as it runs parallel to the Blue Line. The trail will extend 4.7 miles, and will offer access for multiple users in neighborhoods to the east of the station via E. Kiest Blvd. and Maywood Ave. (Exhibit 3-21).

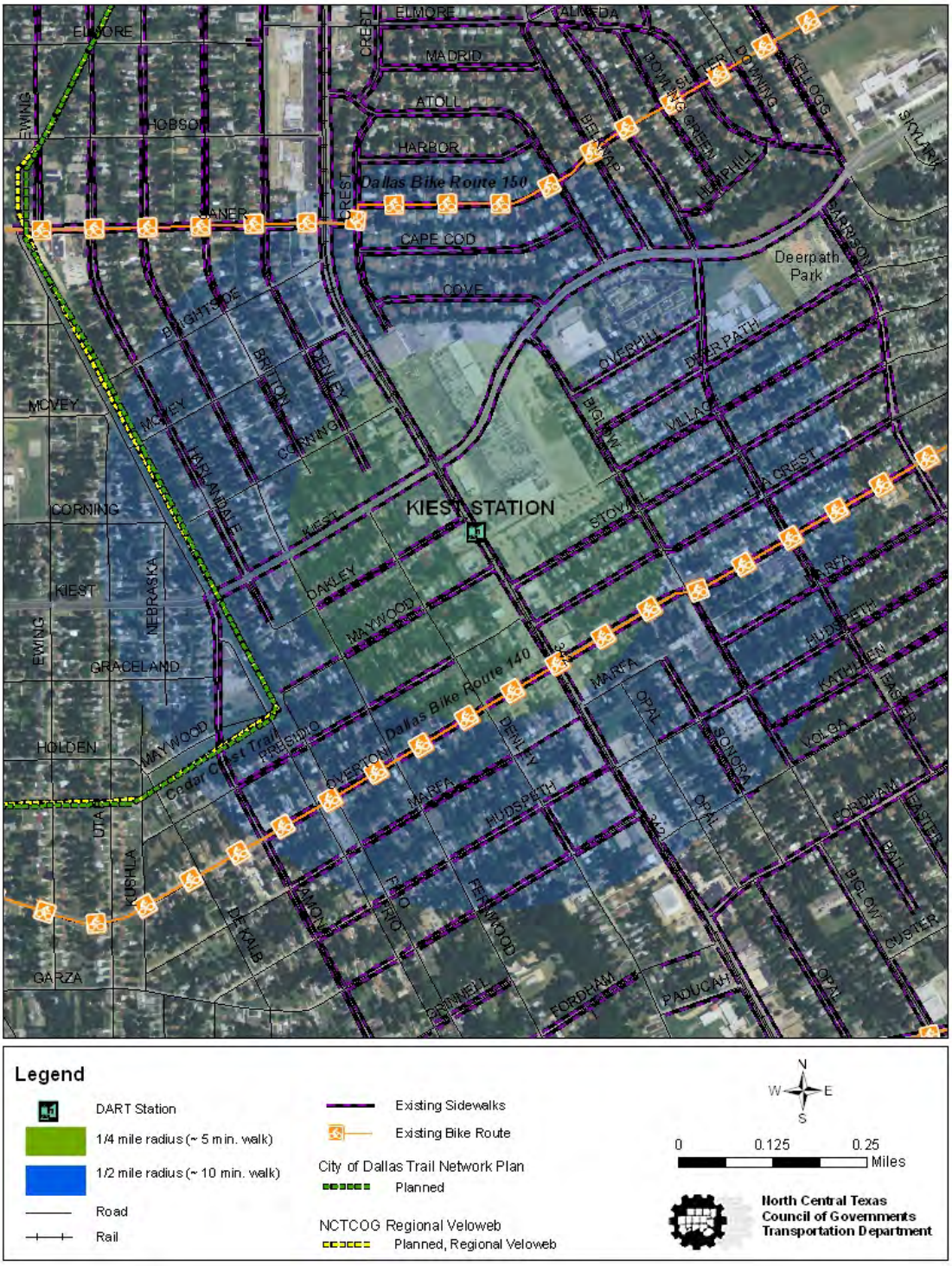
Exhibit 3-17

Exhibit 3-18

Exhibit 3-19

Exhibit 3-20

Exhibit 3-21: Kiest Station Area Bicycle and Pedestrian Facility Overview



Source: NCTCOG

Though Kiest Station has a significant number of opportunities, there are several constraints that should be addressed in order to realize the full potential of this station area.

Constraints:

- Many existing sidewalks are deteriorating, obstructed, lack curb ramps, and do not conform to *Americans with Disabilities Act* (ADA) requirements (Exhibit 3-22).
- Sidewalks only exist on the north side of the street to the south of the shopping center (east of the station), which leads to overflow parking and connects to neighborhoods to the east of the station via Village Way (Exhibit 3-23).
- Numerous curb cuts used to allow motor vehicles access to a driveway or parking lot are prevalent on existing sidewalks along S. Lancaster Rd. and create unsafe conditions for bicyclists, pedestrians, and persons with mobility impairments alike, as the change in grade can be too abrupt and lead to an imbalance (Exhibit 3-24).
- While there are two existing on-street bicycle routes, there are none that offer direct access to the station. The station area also lacks on-street bicycle lanes, shared lane markings, or other bicycle facilities connecting adjacent neighborhoods to the station.
- There are limited bicycle amenities at or around the station.
- While there are benches on the station platform, there is no street furniture located around the station or in the surrounding neighborhood.
- There is no existing pedestrian-scaled lighting, concrete pavers, landscaping, or street buffers tying the station to development to delineate pedestrian right-of-way and create an aesthetically pleasing environment.
- Businesses and retail surrounding the station lack curb appeal and have set-backs due to street-facing parking lots causing a disconnect between pedestrians and the environment, and encourage motor vehicle traffic (Exhibit 3-25).
- S. Lancaster Rd. separates the station from retail shops on either side of the station resulting in a lack of cohesion between the station and the surrounding environment.
- Right-of-way would need to be acquired to expand S. Lancaster Rd. to allow for on-street parking.

Exhibit 3-22

Exhibit 3-23

Exhibit 3-24

Exhibit 3-25

The study area of Kiest Station has several essential components of a TOD already in place, including pedestrian infrastructure and commercial and retail businesses. The key element missing at this proposed TOD location is connectivity. S. Lancaster Rd. creates a disconnect from the station and surrounding businesses, and the set-backs and business frontages are not conducive to a pedestrian-friendly environment. However, with the proper revitalization, this station has the potential to develop into a successful TOD.

Recommendations for bicycle and pedestrian facilities identified in the following section are based on the bicycle and pedestrian needs analysis. Recommendations should be confirmed with appropriate city departments and existing planning documents before implementation.

Bicycle and Pedestrian Recommendations

1. Removal of Greater Dallas Bike Plan routes 150 and 140 exist on E. Saner Ave., Crest St., Sutter St., and E. Overton Rd.
2. Addition of the following on-street bicycle facilities per the 2011 Dallas Bike Plan:
    - a shared lane marking facility on S. Ewing Ave. to E. Saner Ave.
    - a shared lane marking facility on S. Lancaster Rd. from E. Saner Ave. to E. Overton Rd.
    - a bike lane on E. Saner to S. Lancaster Rd.; reduction from two 20-foot wide travel lanes and a median to two 10-foot wide travel lanes, a median, two 6-foot wide bike lanes, and one 8-foot wide on-street parking lane.

- a buffered bike lane on E. Kiest Blvd.; reduction from three 10-foot wide travel lanes and a 12-foot wide median to two 10-foot wide travel lanes, a 12-foot wide median, two 6-foot wide bike lanes, and two 4-foot wide buffers (between right travel lane and bike lane).

3. Traffic calming measures can be implemented on arterials, collectors, and neighborhood streets to slow traffic and improve bicycle and pedestrian safety and accessibility including, but not limited to, the following options (as warranted).
    - Narrow travel lanes in each direction (10 to 11 feet in width)
    - Installation of an 8-foot parallel parking lane on one or both sides of the street
    - Reduce speeds to 35 miles per hour or less (implementation of speed humps may be necessary)
    - Installation of center turn lanes or medians to shorten pedestrian crossing distances
    - Installation of bulb-outs at busy intersections to shorten pedestrian crossing distances
    - Reduction in curb radii (4.6 m (15 feet) for residential streets and about 7.6 m (25 feet) for arterial streets with a substantial volume of turning buses and/or trucks) to slow right-turning vehicles

    Each of these measures (on-street parking, narrowed travel lanes, medians, etc.) when implemented correctly has been proven to create a more pedestrian-friendly environment by reducing travel speeds and thus the occurrence of collisions. Additionally, these treatment options allow for safe accessibility to the transit station.
4. Cedar Crest Trail, a planned shared use path identified on the Regional Veloweb and the City of Dallas Trail Network Plan, should be implemented according to standards identified in Appendix B to create a seamless off-street connection to Kiest Station.
5. Sidewalks and ramps within the half-mile parameter of the station should be updated and/or implemented according to ADA standards as discussed in Appendix B. In addition, the following should be considered particularly at heavy intersections:
    - crosswalks
    - signage
    - pedestrian traffic signals

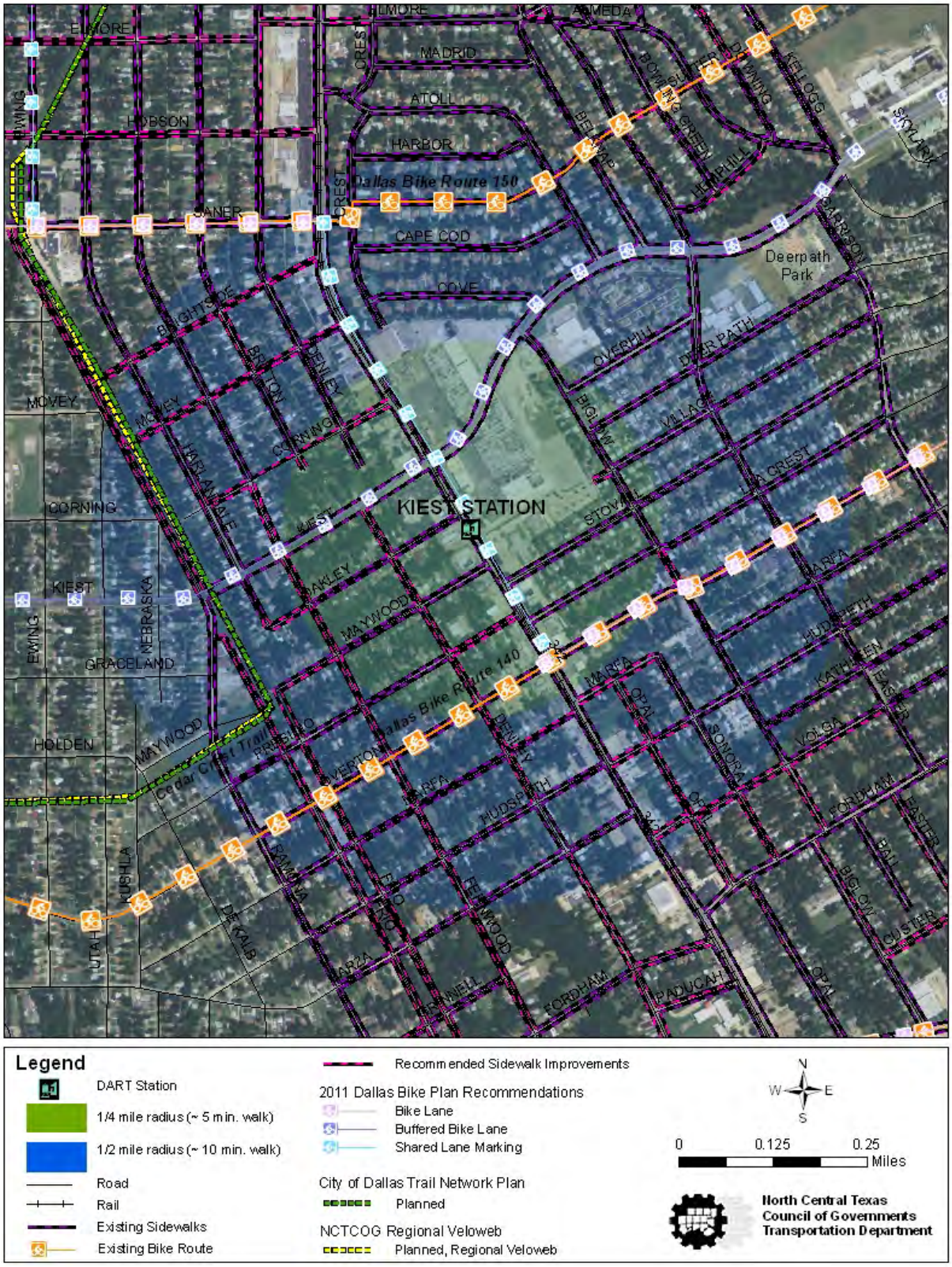
Additionally, expanded sidewalks (between 5 feet and 7 feet wide) with a buffer between the roadway and sidewalk should be implemented within a quarter-mile parameter of the station to encourage foot traffic and create a safer environment for pedestrians.

6. The at grade crossing at the intersection of S. Lancaster Rd. and E. Kiest Blvd. is in need of the following improvements:
    - increased signage, specifically an LED flashing train warning sign
    - pedestrian gates
    - at grade z-crossing
    - “Stop Here” pavement markings
7. Driveways that separate many of the existing buildings on S. Lancaster Rd. should be reconstructed for development, and parking should be diverted behind the buildings or on-street. In instances where this is not possible, the guidelines presented in Appendix B should be considered for alternative options. Additionally, new buildings, or those being redeveloped or renovated should be oriented toward the street to allow for pedestrian access.
8. The street network surrounding the proposed TOD is in a good block form or grid pattern for the most part, but in areas where there are existing cul-de-sacs, large blocks, or dead ends, shared use paths should be created to allow neighboring community’s pedestrian and bicycle access to the station.
9. Bicycle end-of-trip facilities should also be provided within the half-mile parameter of the station at desired destinations as discussed in the Appendix B.
    - secure bicycle parking
    - bicycle racks
    - lockers
10. Priority should be given to updating bicycle and pedestrian facilities and amenities on roadways and public rights-of way within a half-mile parameter of the station location as illustrated in Exhibit 3-26 including implementation of the following as warranted:
    - street furnishings including pedestrian-scaled lighting, benches, kiosks, trash cans, planters, and landscaping

- crosswalks and pedestrian traffic signals
- on- and/or off-street bicycle facilities

11. Open space within the corridor should be preserved and made available to the public through parks, community gardens, or public plazas, in an effort to create a more welcoming environment. Open space can serve as a waiting or recreational area for patrons utilizing the transit station, as well as offer accessibility to the station. Pedestrian and bicycle amenities as discussed in Appendix B should be utilized.

Exhibit 3-26: Kiest Station Area Bicycle and Pedestrian Facility Recommendations



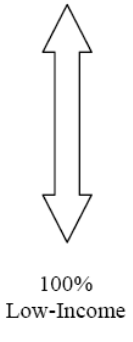
Source: NCTCOG

Recommendations

Increasing density, maintaining affordability, and preserving existing single family homes is a challenge in the Kiest station area. Although the population is projected to decrease by almost four percent by 2035, over 96 percent of the housing units in the area are over 50 years old. The station area needs sustainable housing development that is affordable and conducive to transit. Increases in rental rates and ownership costs have outpaced income growth, making the area unaffordable for its traditional residents. In order to slow down gentrification in the station areas, investments need to be made in mixed income housing.

Smith's Categories of Mixed Use Housing and Incomes table (Exhibit 3-27) describes the mix of several mixed income housing scenarios. The best scenario for the Kiest Station is the broad range of incomes category, which includes low-income, moderate, and market rate housing units. This could be considered for the station area's housing mix because it supports the current population living in the area. The low-income rate units can house the low-income population earning around $15,000 per year, and the moderate and market rate units can house new households earning between $25,000 and $40,000 per year. To accomplish this, a mixed income housing feasibility study is needed for the station area.

Exhibit 3-27: Categories of Mixed Income Development and Incomes Served



Category	Description	Illustrative Mix of Incomes	
		% of Units	*% of AMI*
Moderate-Income Inclusion	Predominately market-rate developments that include units for moderate-income households.	80% 20	Market 80%
Low-Income Inclusion	Predominately market-rate developments that include units for low-income households.	80 20	Market 50
Broad Range of Incomes	Serves market-rate, moderate income or low-income households, and extremely low-income households.	33 33 33	Market 60 30
Market-Rate Inclusion	Predominately low income developments that include market-rate units.	20 80	Market 50/60
Affordable Mix	Serves moderate or low-income and extremely low-income households.	50 50	60 30

Source: Alastair Smith, 2002. Mixed Income Housing Developments: Promises and reality

Housing density and diversity are also concerns because there are only two apartment complexes and 51 duplexes within one-quarter mile of the station. Quality mixed income multi-family housing should be included in the mix to encourage density and accommodate a higher number of households.

The biggest catalyst for any development in the Kiest Station area is the station itself. It creates a platform for higher density mixed income housing that not only provides housing opportunities without displacing the existing community, but invites higher income groups, which can stimulate economic development in the station area.

According to forwardDallas! "Multi-modal corridors [such as the Lancaster corridor] should encourage the redevelopment of aging auto-oriented commercial strip development while respecting existing single family neighborhoods." However, the single-family or duplexes should generally be maintained unless redevelopment is addressed through an Area Planning process. To help preserve the existing neighborhood a higher density than medium is not recommended because of the single family neighborhood that is present. Medium intensity will allow for vertical expansion and for multi-family to exist in the area. Walkable Urban Mixed Use (WMU-8) medium intensity is recommended for the area. Developments allowed for WMU-8 are mixed-use shop front, general commercial, apartment, townhouse stacked, townhouse, civic building, and open space lot. Additionally a Shopfront Overlay (SH) should be added. According to the Dallas Form Districts, the Shopfront Overlay is intended to create pedestrian shopping streets through the designation of specific street frontages with development types that support active uses. The Shopfront Overlay will help create a more attractive area that is catered to increasing pedestrian activity. The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended in the area (Exhibit 3-28). As mentioned before, the area does contain an array of commercial and retail services. Eateries are also present. However, more compact development would assist in increasing the density in the area and for more people to live closer to the station. Providing housing in mixed-use buildings located along Lancaster Blvd. will increase the safety factor by providing more "eyes on the street". Overall identifying the neighborhood, along with the low price

rentals, long term home owners/established homes will need to be evaluated even further to better assess the appropriate form district for this area.

View a summary of the bicycle and pedestrian recommendations for all four stations in Chapter 7, Corridor Connections, Exhibit 7-1.

Exhibit 3-28: Use Chart for the Kiest Station WMU-8

		Mixed Use		General Commercial	Apartment	Townhouse Stacked		Townhouse	Civic Building	Open Space
		Ground Story	Upper Story	All Stories	All Stories	Ground Story	Upper Story	All Stories	All Stories	---
Residential	Single-family living		x			x	x	x		
	Multi-family living		x		x	x	x	x		
	Group living		x		x	x	x	x		
Civic	Community service: general	o	o	o		o			o	
	Community service: museum, library	x	x	x		x			x	
	Day care	x	x	x					x	
	Educational	x	x	x					x	
	Government service	x	x	x					x	
	Park or Open space									x
	Social service	o	o	o						
	Transit Station	x	x	x					x	
	Utilities									x
Place of Worship	Place of Worship	x	x	x					x	
Office	Medical	x	x	x						
	Office	x	x	x		x				
Retail	Restaurant or Bar	x								
	Retail Sales	x								
Service and Entertainment	Commercial amusement (inside)	o	o	o						
	Indoor recreation	x	x	x						
	Personal service	x	x	x						
	Animal care	x	x	x						
Commerce	Commercial parking	x	x	x						o
	Passenger terminal limited to a Helistop		o	o						
	Overnight lodging		x	x						

x = permitted; o = specific use permit; blank cell = not permitted

4. VA MEDICAL CENTER STATION ASSESSMENT AND RECOMMENDATIONS

Data for the Veterans Affairs (VA) Medical Center Station include demographics, zoning, land use, commercial and housing and bike/pedestrian conditions. A summary of each topic is included in this chapter. Recommendations for improvements are included at the end of the station's section.

Demographics

The total population within one-quarter mile of the VA Medical Center Station was 2,199 in 2010; an increase of 12.25 percent since 2000. According to NCTCOG forecasts, the population is projected to reach 2,639 by 2035; an increase of 20 percent (Exhibit 4-1). The largest percentage of the population in 2010 was African Americans, accounting for 75 percent of the population; 13 percent were white alone (Exhibit 4-2). An additional 11 percent of the population categorized themselves as Other. As demonstrated in Exhibit 4-3, 23 percent of the population was Hispanic.

Exhibit 4-1: VA Medical Center Station Area Population

	Station Area Population				
Station	**2000 Population**	**Percent Change**	**2010 Population**	**2035 Forecast**	**Percent Change**
Illinois Station	1,082	1.29%	1,096	1,138	3.83%
Ledbetter Station	1,351	123.98%	3,026	4,618	52.61%
Kiest Station	1,717	87.71%	3,223	3,112	-3.44%
VA Medical Center	1,959	12.25%	2,199	2,639	20.01%
Total	6,109	56.23%	9,544	11,507	20.57%

Source: 2010 Census; Census 2000; NCTCOG 2035 Demographic Forecast

Exhibit 4-2: VA Medical Center Station Area Total Population by Race

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
White alone	202	10.31%	277	12.60%	37.13%
Black or African American alone	1571	80.19%	1642	74.67%	4.52%
American Indian and Alaska Native alone	12	0.61%	4	0.18%	-66.67%
Asian or Pacific Islander alone	3	0.15%	0	0.00%	-100.00%
Other	136	6.94%	250	11.37%	83.82%
Multi-Racial	35	1.79%	26	1.18%	-25.71%
Total	1959	100.00%	2199	100.00%	12.25%

Source: Census 2010; Census 2000

Exhibit 4-3: VA Medical Center Station Area Hispanic and Non-Hispanic Population

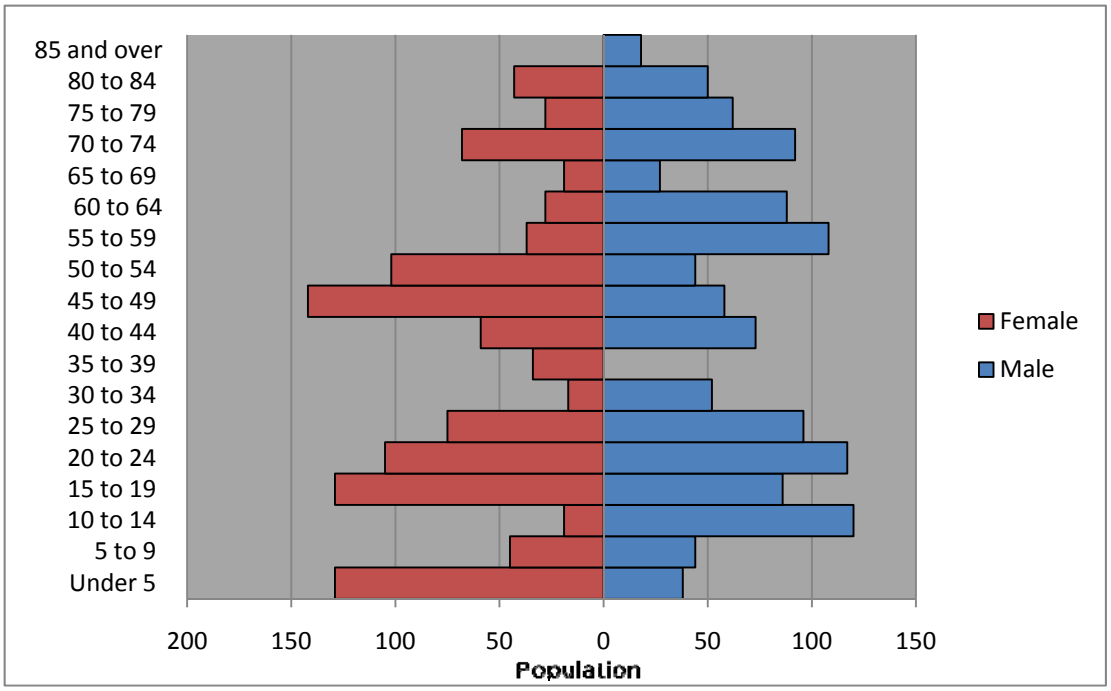
	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
Hispanic or Latino	276	14.09%	514	23.37%	46.30%
Not Hispanic or Latino	1683	85.91%	1685	76.63%	-13.99%
Total Population	1959	100.00%	2,199	100.00%	12.25%

Source: Census 2010; Census 2000

According to the 2005-2009 American Community Survey, there was no definite trend in the age distribution of residents in the VA Medical Center Station area. The largest age cohort was 20 to 24 years of age with 10 percent of the station area population; less than one percent of the residents were 85 years or older. Residents between 15 and 64 years of age made up 64 percent of the population.

The largest age group of males in the station area was between 10 and 14 years old accounting for 10 percent of the male population. No males were between 35 and 39 years old. Males between 15 and 64 years of age made up 62 percent of the total male population in the VA Medical Center Station area. The largest percentage of females in the station area, 13 percent, was between 40 and 44 years of age in 2009. No females were reportedly 85 years or older. Females between 15 and 64 years of age comprise 67 percent of the population (Exhibit 4-4).

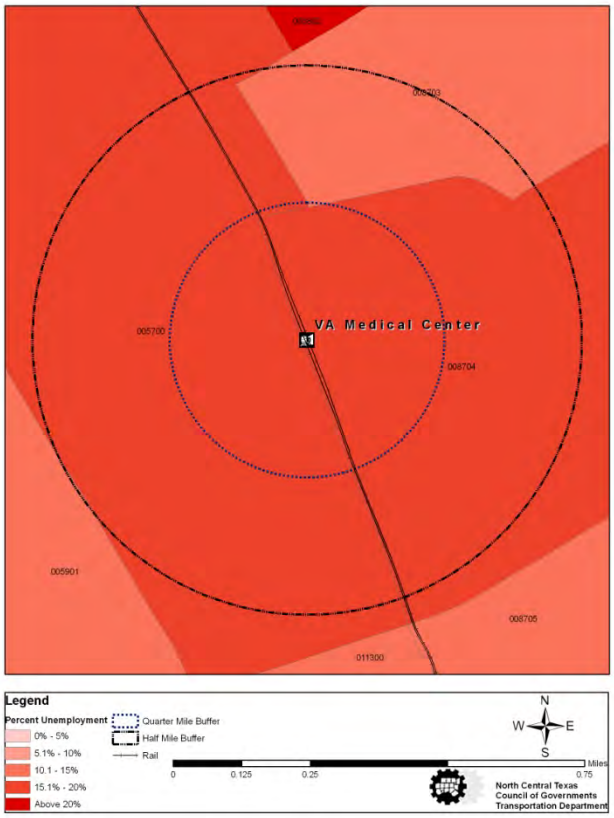
Exhibit 4-4: VA Medical Center Station Age Pyramid



Source: 2005-2009 American Community Survey

Unemployment data was gathered from the 2005-2009 American Community Survey. The census tracts within a half mile of VA Medical Center station indicate an employment rate of 17 percent. The census blocks are highlighted on Exhibit 4-5 and the details for each census block can be seen on Exhibit 4-6. Two major employers, defined by NCTCOG as having greater than 80 employees, were found within the station boundary. The VA North Texas Health Care System has an estimated 3,938 employees, and the Harry Stone Montessori Academy has 375 employees.

Exhibit 4-5: VA Medical Center Station Area Census Tracts



Source: 2005-2009 American Community Survey, NCTCOG RIS Major Employer Database

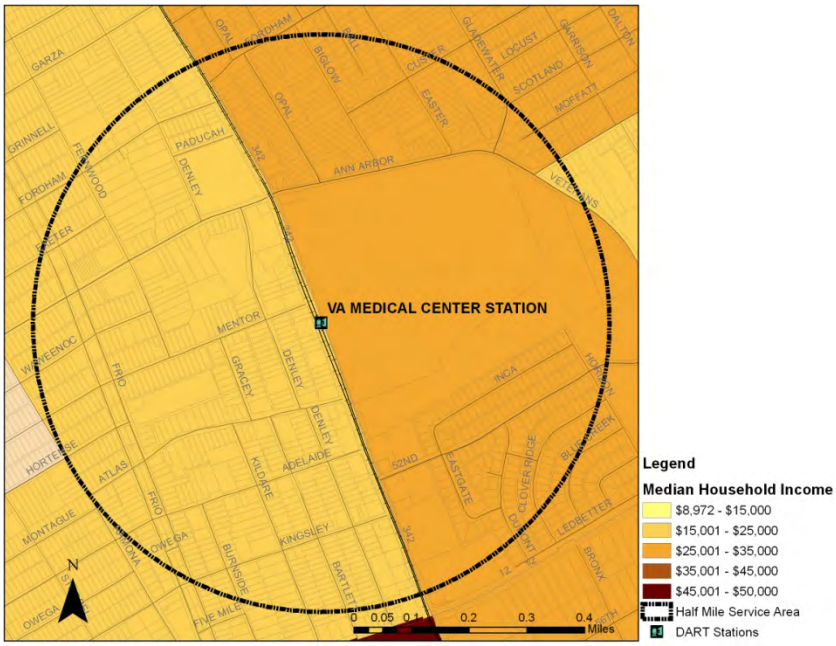
Exhibit 4-6: VA Medical Center Station Area 2009 Unemployment Rate

Census Tract	Population 16 Years and Over in Labor Force	Population 16 Years and Over in Labor Force, Unemployed	Percent Unemployment
87.03	1256	181	14.41%
87.04	1355	264	19.48%
57	1652	292	17.68%
Total	4263	737	17.29%

Source: 2005-2009 American Community Survey

The 2009 median household income in the VA Medical Center Study Area ranged between $20,000 and $30,000 per year. Households west of the station earned $21,799; those to the east earned approximately $26,333 (Exhibit 4-7).

Exhibit 4-7: VA Medical Center Station Area 2009 Median Household Income



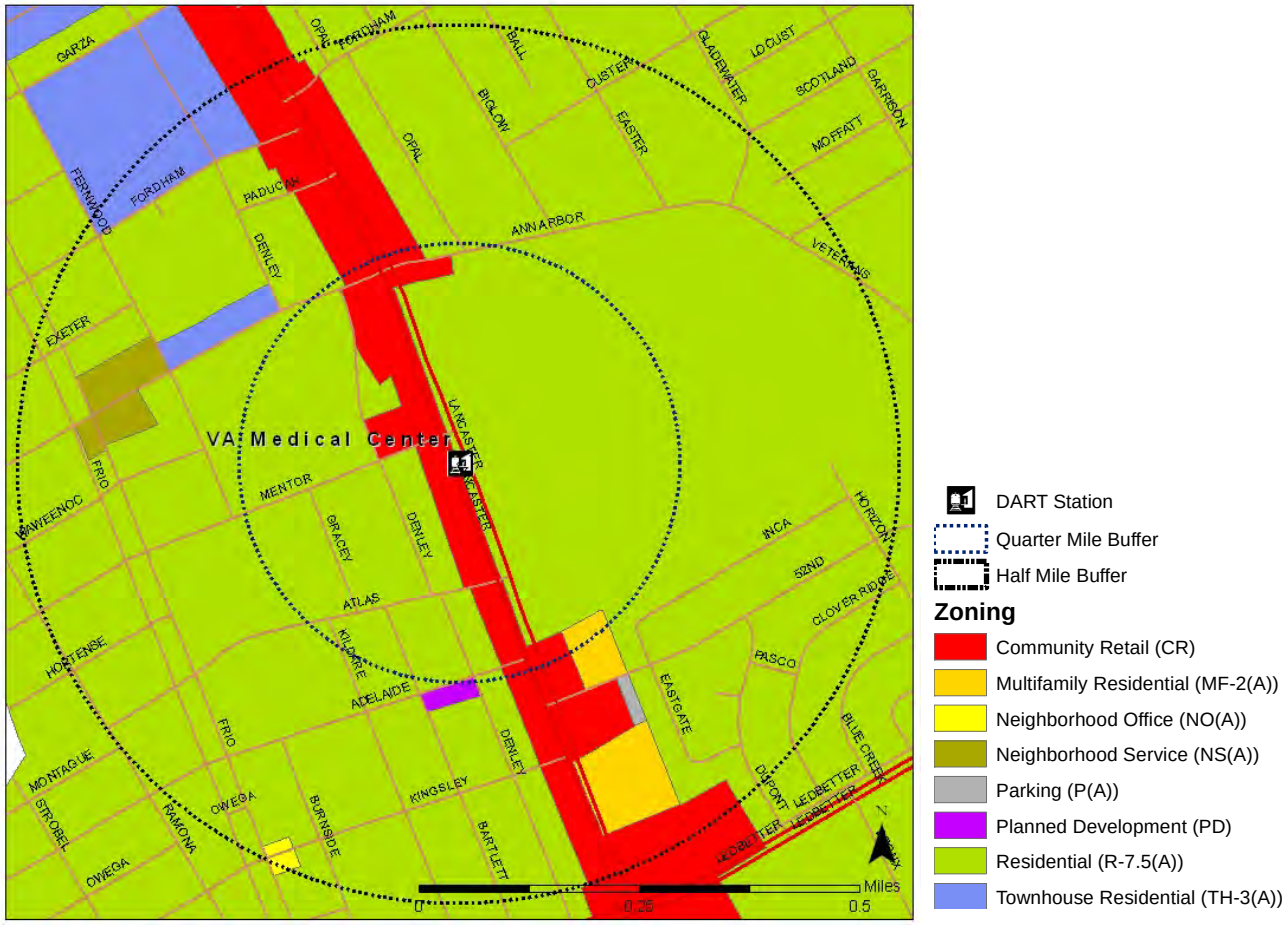
Source: 2005-2009 American Community Survey.

Current Zoning and Land Use

The VA Medical Center Station's one-quarter mile buffer is zoned predominantly for (single-family) residential and community retail. Within the one-half mile buffer other zoning includes townhouse residential, neighborhood services, multi-family residential and neighborhood office. No mixed-use and very minimal high density zoning exists in the area. Refer to Exhibit 4-8 for an image of the zoning around the VA Medical Center Station. The station provides for great access to the hospital without the use of an automobile. Zoning for a range of housing and mix of uses would be very beneficial for both hospital patrons and employees.

This image shows an overview of the VA Medical Center station and hospital.

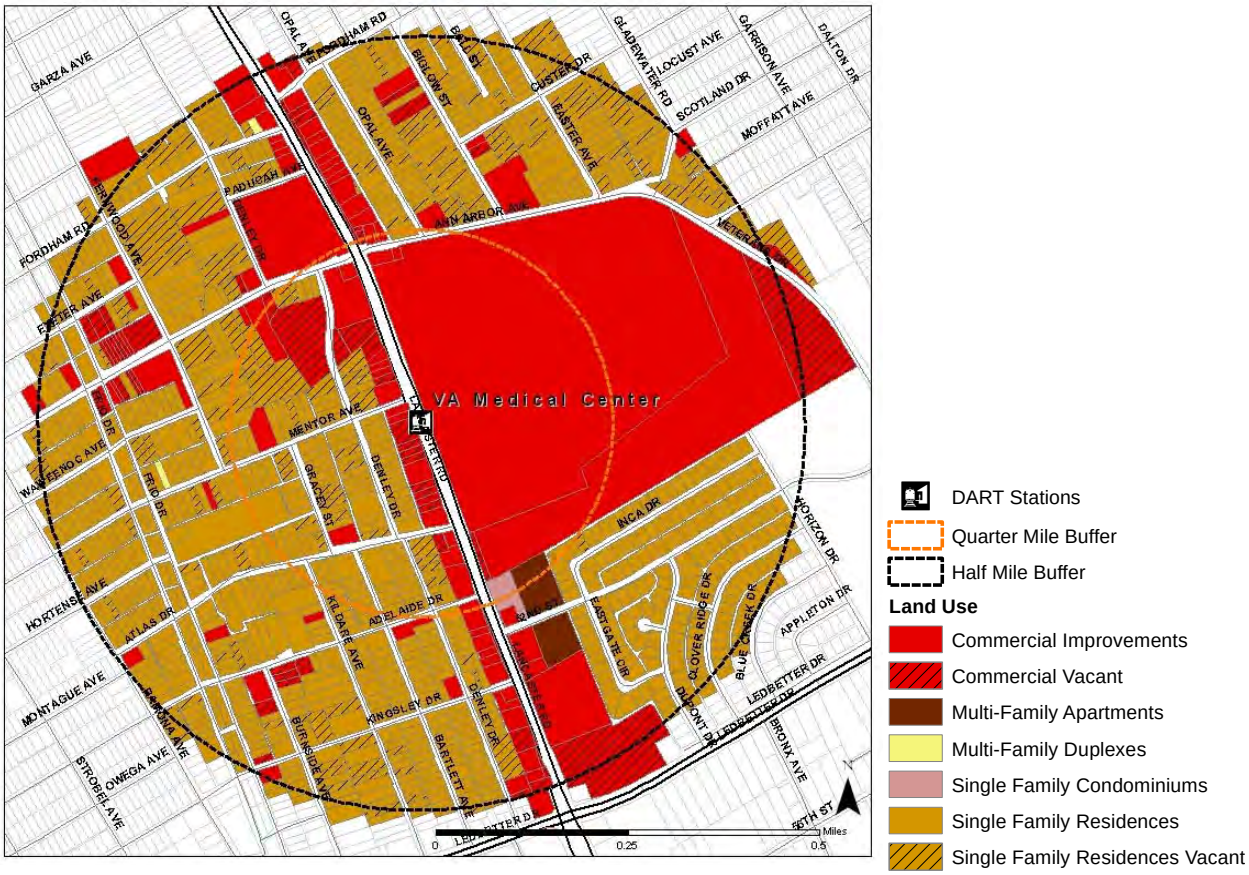
Exhibit 4-8: Zoning within One-Half Mile of the VA Medical Center Station



Source: City of Dallas

Although the zoning map (Exhibit 4-8) does not show this, the land use map (Exhibit 4-9) shows that around the one-quarter mile buffer from the VA Medical Center Station is a bigger commercial portion in terms of acres than residential (single-family). Exhibit 4-9 shows an overall view of the land use surrounding the VA Medical Center station. The land use around the one-quarter mile buffer around the VA Medical Center Station is an even split between residential (single-family) and commercial. There are a total of 234 parcels making up about 218 acres. Single-family accounts for 149 parcels out of 234 making up about 42 acres which is 19 percent; commercial claims 46 parcels making up about 138 acres which is 63 percent; multi-family residential one parcel and making up about two acres (Exhibit 4-10). The single-family condominium is discussed in the housing section. As you move further away from the station the continuing dominating use is single-family. Within a one-half mile radius of the station single-family accounts for 1,052 parcels out of 1,241, making up about 251 acres or 52 percent; commercial 147 parcels making up about 196 acres; multi-family residential four parcels making up about four acres or .81 percent (Exhibit 4-11). There are a total of 1,241 parcels making up about 486 acres.

Exhibit 4-9: Land Use Within One-Half Mile of the VA Medical Center Station



Source: Dallas Central Appraisal District, 2009. An unassigned category may mean that data was not available.

Exhibit 4-10: Land Use Parcels Within One-Quarter Mile of the VA Medical Center Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	28		128.22		
Commercial - Vacant	18	46	9.79	138.01	63.40%
Multi-Family Residences - Apartments	1	1	2.16	2.16	0.99%
Single-Family Condominiums	38	38	35.06	35.06	16.11%
Single-Family Residences	119		31.22		
Single-Family Residences - Vacant	30	149	11.23	42.45	19.50%
Grand Total	234	234	218	217.68	100.00%

Source: Dallas Central Appraisal District, 2009

Exhibit 4-11: Land Use Parcels Within One-Half Mile of the VA Medical Center Station

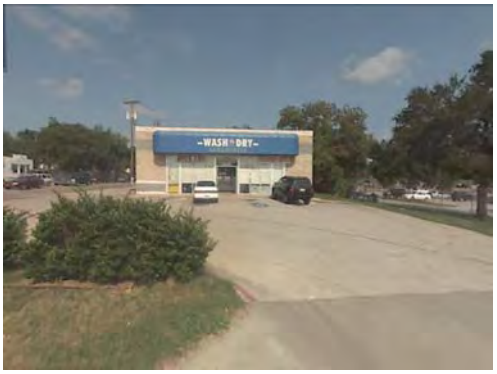
Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	89		158.36		
Commercial - Vacant	58	147	37.60	195.96	40.31%
Multi-Family Residences - Apartments	2	2	3.94	3.94	0.81%
Multi-Family Residences - Duplex	2	2	0.38	0.38	0.08%
Single-Family Condominiums	38	38	35.06	35.06	7.21%
Single-Family Residences	884		200.20		
Single-Family Residences - Vacant	168	1052	50.58	250.78	51.59%
Grand Total	1241	1241	486	486.12	100.00%

Source: Dallas Central Appraisal District, 2009

Commercial/Retail Assessment

Commercial land use accounts for about 63 percent of the acres within one-quarter mile of the station (Exhibit 4-10). Within one-half mile of the station commercial land uses fall second to single-family residential (Exhibit 4-11). Within one-quarter mile from the station and along the light rail tracks uses varied from compatible to incompatible with light rail. Incompatible uses such as auto-related services are in operation in the area. Additionally, incompatible developments exist in the area including stand-alone buildings and parking lots that are situated between the building entrance and the sidewalk. Several parcels are vacant with no buildings in place. However, there are services in the area that are beneficial to the community and compatible with light rail such as the Urban League, the City of Dallas Housing Department, and the BF Darrell Elementary School. The year built for the commercial improvements along the rail line range from 1918 to 1999. The total value, which includes land value and improvement value, range from $14,550 to $915,620.

Images of the existing commercial and retail along the rail line and within one-quarter mile of the station are shown on the following pages.



Wash & Dry located at 4302 S. Lancaster Rd. The parking is a buffer between the entrance and the sidewalk.

Lancaster Tire Service located at 1909 Ann Arbor Ave. The business offers automotive services.

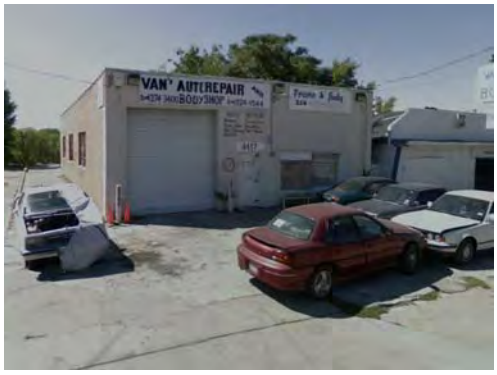
Vacant site located at 4244 S. Lancaster Rd. The site currently serves as parking for the Lancaster Tire Service.

American Cash Express located at 4303 S. Lancaster Rd. The businesses are located in a stand-alone building and the entrances are buffered by parking.

Urban League located at 4315 S. Lancaster Rd. The building and landscaping are well maintained. Additionally, the building entrance is close to the sidewalk. Services provide a benefit to the community.

Vacant lots located at 4343 S. Lancaster Rd. and 4411 S. Lancaster Rd. Existing buildings were torn down.

4415 S. Lancaster Rd. The current business offers automotive services.



Van's Auto Repair located at 4417 S. Lancaster Rd. The current business offers automotive services.

Preston's Beauty Salon located at 4419 S. Lancaster Rd. The business currently contains a stand-alone building with parking in between the entrance and the sidewalk.

Vacant lot located at 4425 S. Lancaster Rd.

Chase Bank located at 4435 S. Lancaster Rd.
The sidewalk does not directly lead to the bank entrance. However, the building and landscaping are well-maintained.

4501 S. Lancaster Rd. The current business appears to provide automotive services.

Faith Exchange Outreach Ministries located at 4507 Lancaster Rd. The building and landscaping are maintained. However, the stand-alone building does not provide for more compact development.

4515 S. Lancaster Rd., 4523 S. Lancaster Rd., 4527 S. Lancaster Rd., and 4531 S. Lancaster Rd. All sites are vacant with no existing buildings.

City of Dallas Housing Department located at 4607 S. Lancaster Rd. The site provides City services.

4615 S. Lancaster Rd. and 4619 S. Lancaster Rd. are both vacant sites.

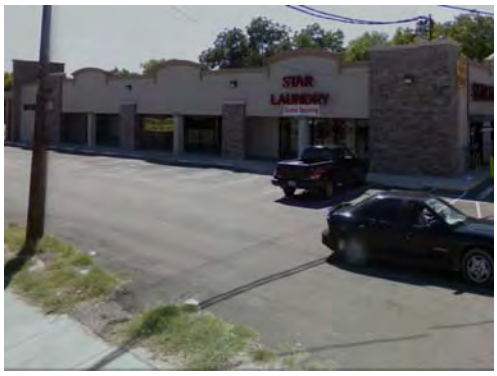
Smith's Auto & Body Repair located at 4623 S. Lancaster Rd. The current business provides automotive services.

4627 S. Lancaster Rd. currently serves as parking for Smith's Auto & Body Repair.

4631 S. Lancaster Rd. The site appears to be vacant but activity was seen in a site visit.

Candy Shop located at 4703 S. Lancaster Rd. The current business provides automotive services.

Retail strip center located at 4709 S. Lancaster Rd. This site contains more compact development than other sites that surround the transit station. Businesses located here include an auto supply shop, a hardware store, an eatery and a barber shop. However, it does not encourage patrons to access the businesses by walking as evidenced by the parking lot acting as a buffer between the store entrances and the sidewalk.



Retail/commercial strip center located at 4735 S. Lancaster Rd. This site also provides more uses of the property than surrounding commercial properties. However, parking is still situated in the front which acts as a barrier between the sidewalk and the entrances.

4811 S. Lancaster Rd. The site is for sale as indicated on the side of the structure. The site once provided car wash services.

BF Darrell Elementary School located at 4730 S. Lancaster Rd. This is a very good use of the site. Rail provides an alternative for students and parents to access the school. School façade and landscaping are in good condition.

The land uses around the station have a combination of compatible and incompatible uses. Compatible uses that are present in this area include city services, schools, and eateries. Other compatible uses that were seen include a bank, beauty salon, and a hair cut shop although their positioning relative to the station and the buildings occupied are not maximized or ideal. Incompatible uses for this area are automotive sales and services. Various parcels were vacant within the one-quarter mile buffer.

Appendix C provides data from the 2009 Dallas Central Appraisal District. These parcels are a sample of the commercial businesses that are located along the rail line and within the one-quarter mile buffer of the station.

Housing Assessment

The majority of the housing units in the VA Medical Center area, 88.43 percent, were constructed in 1960 or earlier (Exhibit 4-12). Although only five total housing units were constructed between 1981 and 2000, 30 new housing units were constructed between 2001 and 2008.

Exhibit 4-12: Lancaster Corridor Station Area Housing Unit Construction Year

Year Constructed	Illinois	Kiest	VA Medical Center*	Ledbetter*
Unknown	3	2	7	4
Pre 1920	26	4	20	1
1920-1940	670	342	203	94
1941-1960	437	976	588	391
1961-1980	30	29	72	65
1981-2000	15	15	5	5
2001-2008	39	29	30	11
Total	1220	1397	925	571

* Parcels in this station area overlaps with another station area

Source: Dallas Central Appraisal District, 2009

Despite the lack of new housing construction between 1981 and 2000, 90 percent of the housing units in the VA Medical Center area were occupied in 2000 (Exhibit 4-13). But that figure had been reduced to 74 percent by 2009. The percentage of owner occupied housing units were the lowest among the Lancaster Corridor Station areas at 60 percent, although owner occupied housing increased to 64 percent in 2009.

Exhibit 4-13: 2000- 2009 Lancaster Corridor Housing Tenure

Station	2000 Percent Occupied	2000 Percent Owner Occupied	2009 Percent Occupied	2009 Percent Owner Occupied
Illinois	90.19%	64.72%	87.65%	58.84%
Kiest	93.85%	73.28%	82.44%	58.99%
VA Medical Center	90.22%	60.37%	74.19%	63.65%
Ledbetter	95.66%	74.60%	81.88%	91.19%
Total	92.69%	69.09%	69.99%	92.64%

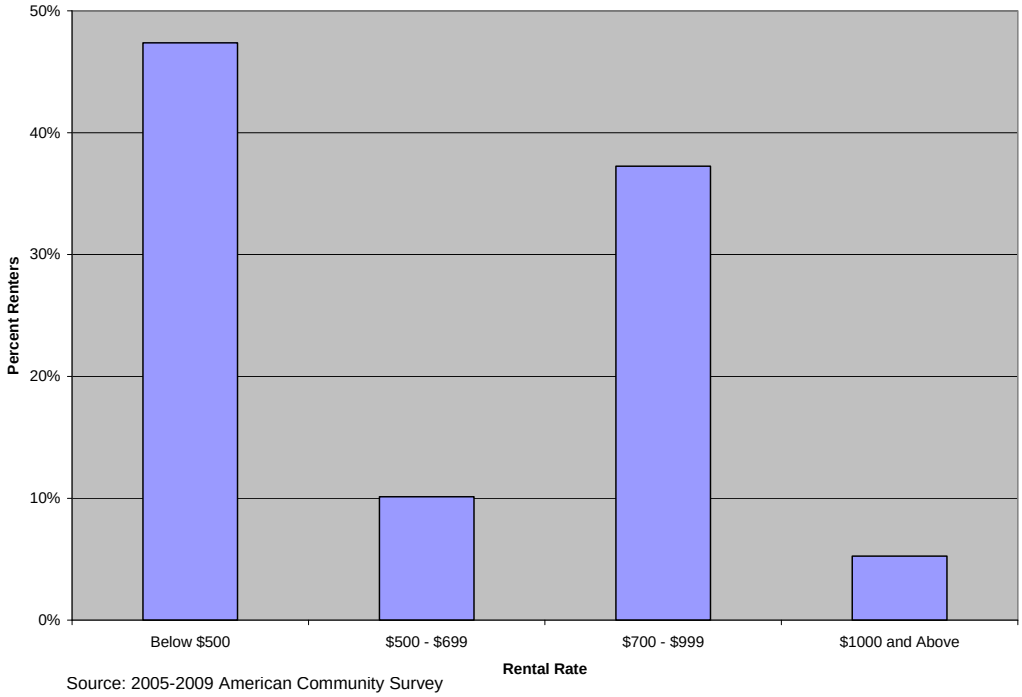
Source: 2005-2009 American Community Survey; Census 2000

Although the median household income for the station area was below $30,000 in 2000, rental and ownership costs were mostly affordable (Exhibit 4-7). Residents west of the station area could afford monthly housing costs of $716.52 in 2000; households to the east could afford $550.71.

Housing costs in the VA Medical Center Station area ranged from less than $100 to $2,000 per month. The majority of owner occupied households, 61.03 percent, paid less than $500 per month (Exhibit 4-14). Only 47.37 percent of renters paid this amount. An additional 37.25 percent of renters paid between $700 and $999; a rate higher than affordable for the area. The highest monthly housing costs, however, were paid by 5.64 percent of the owner occupied households, which paid as much as $1,999 (Exhibit 4-15).

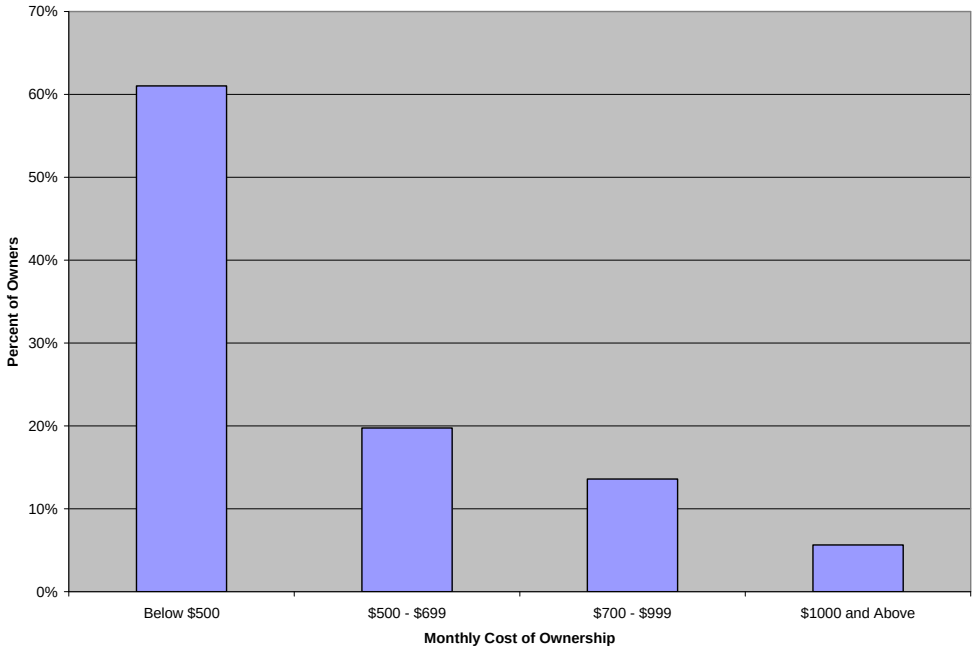
The median household income for 2009, $26,333 for residents east of the station and $21,799 for households west of the station, was relatively similar to 2000 (Exhibit 4-7). Eastern sector households could afford $658 a month for housing costs and western sector households could afford $545. Average monthly rent for eastern sector households was nearly affordable, averaging $670 per month according to the 2005-2009 American Community Survey. Western sector rental rates, however, were $849 per month; not affordable for area households. Owner occupied households west of the station paid an average $898 per month. 2009 data average monthly mortgage rates were unavailable for the area east of the station.

Exhibit 4-14: VA Medical Center Station Area Rental Rates



Source: 2005-2009 American Community Survey

Exhibit 4-15: VA Medical Center Station Area Monthly Cost of Ownership for Owner Occupied Housing



Source: 2005-2009 American Community Survey

The only residential housing situated along the rail line and within one-quarter mile of the VA Medical Center Station is the Rose Garden Condominiums located at 4810 S. Lancaster Rd. The condominium's façade and landscaping seem to be in poor condition. The fence provides a barrier for residents to directly access their apartment from the transit station. According to the 2009 Dallas Central Appraisal District office, 38 different parcel records for the same address had the following total values: improvement value is $27,810, land value at $2,430, for a total value of $30,240.

A TOD assessment should identify opportunities and constraints related to non-motorized modes of transportation as these modes promote accessibility to the station and surrounding developments while allowing for densities that support a TOD by potentially reducing parking needs. The following section outlines the bicycle and pedestrian conditions at and surrounding the VA Medical Center Station.

Bicycle/Pedestrian Conditions

A bicycle and pedestrian needs assessment is a critical component of any viable TOD site. The following provides a discussion of opportunities and constraints for bicyclists and pedestrians at the VA Medical Center Station location.

Opportunities:

- There are a few small businesses located along S. Lancaster Rd., and the station is located directly west of the Dallas VA Medical Center.
- Several schools and churches are located within close proximity to the station.
- A seamless connection of sidewalks exists along both sides of the station on S. Lancaster Rd.
- The Dallas VA Medical Center has an interconnected sidewalk network to allow for safe accessibility by passengers from the east side of the station to the Medical Center, and the bus stops located within the gates (Exhibit 4-16).

- Crosswalks and pedestrian traffic signals exist at Mentor Ave. and the Dallas VA Medical Center entrance to allow for safe accessibility to the station from either side of S. Lancaster Rd. (Exhibit 4-17).
- Detectable warnings in the form of brick patterns exist on curb ramps surrounding the station serving as a warning for passengers with mobility impairments, and delineating the pathway for persons with cognitive impairments (Exhibit 4-18).
- Ramps and lifts are provided for bicyclists and passengers with mobility impairments, and provide safe access onto the train and station platform.
- Decorative concrete pavers exist on the station platform, and add to the aesthetics of the station (Exhibit 4-19).
- Multimodal coordination exists as the station has a direct connection to DART bus route 444.
- Greater Dallas Bike Plan route 120 exists on E. Ann Arbor Ave., which connects to several schools, and allows accessibility to the Dallas VA Medical Center and nearby neighborhoods (Exhibit 4-20).
- The 2011 Dallas Bike Plan includes two on-street bicycle facilities including bike lanes on Ann Arbor Ave. from Frio Dr. to Aztec Dr. and on Veterans Dr. from Ann Arbor Ave. to E. Ledbetter Dr.
- The Glendale Park Trail, which is included in the Dallas Trail Network Plan and the Regional Veloweb, exists to the southwest of the station in Glendale Park. A planned extension to the Glendale Park Trail, which connects to the northern portion of the existing trail, and runs parallel to E. Ledbetter Dr., will connect the Glendale Park Trail to the existing Five Mile Creek Greenbelt Trail (not shown in map). This offers a connection to the Cedar Crest Trail (not shown in map) and the Greater Dallas Bike Plan route 120 in the north (not shown in map).
- DART allows clean bicycles on-board all rail lines (provided they are not posing a safety threat), and has installed bicycle carrier racks on its entire fleet of buses, further enhancing a seamless multimodal connection.

- Lisbon Park and Veterans Park are both located within the one-half mile radius zone of the station, offering green space open to the public.
- Existing station art pays tribute to military veterans who come for treatment at the Dallas VA Medical Center, including drawings and written messages contributed by school children thanking veterans for their military service.
- Public amenities including sheltered seating, trash receptacles, telephones, and ticket vending machines are present at the station creating a more pleasant experience for passengers.

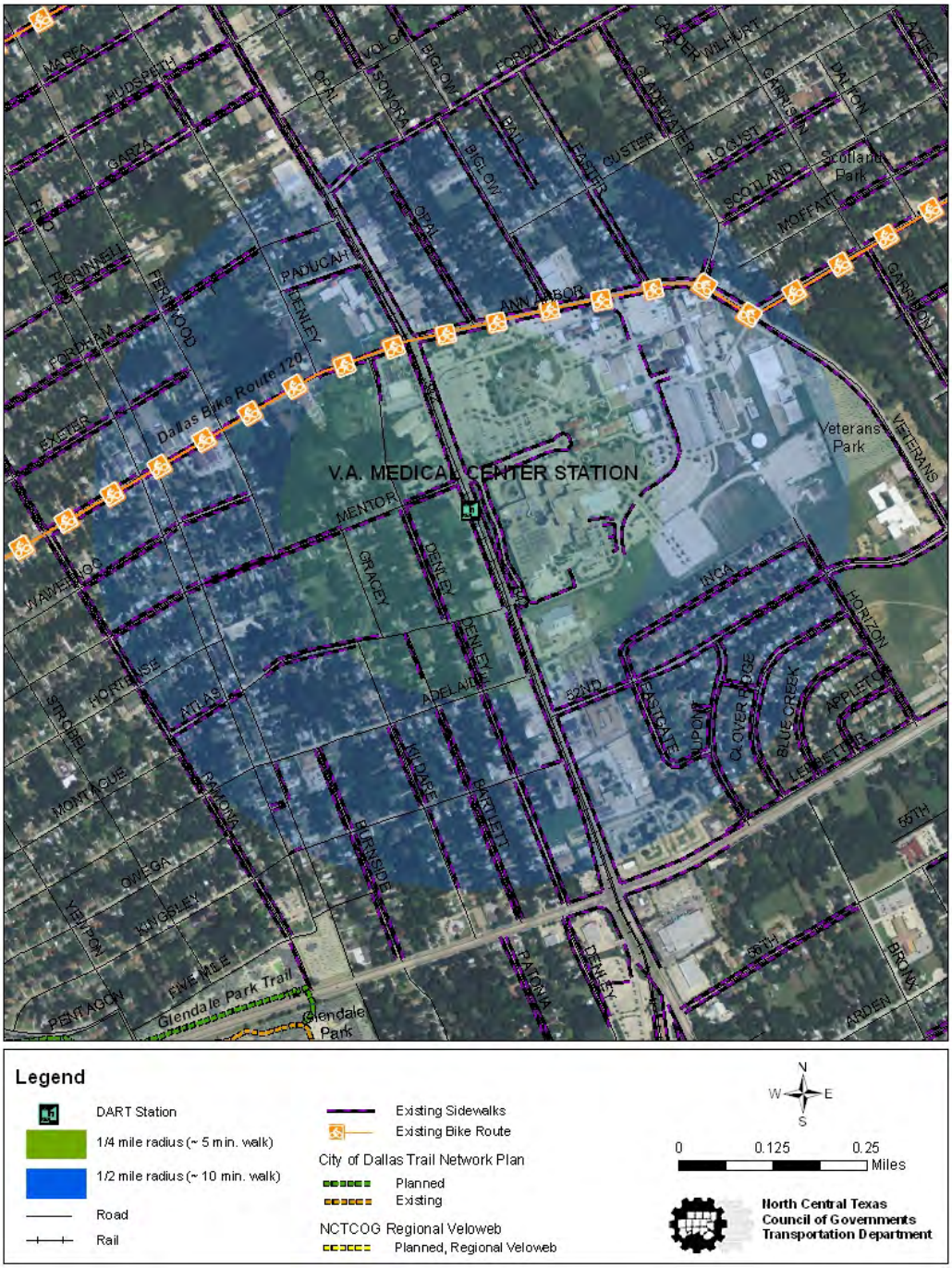
Exhibit 4-16

Exhibit 4-17

Exhibit 4-18

Exhibit 4-19

Exhibit 4-20: VA Medical Center Station Area Bicycle and Pedestrian Facility Overview



Source: NCTCOG

Although the VA Medical Center Station has many existing characteristics and future opportunities, there are still several limitations to the site area that should be addressed in order to realize the maximum potential of this TOD.

Constraints:

- There are many sidewalk linkages missing within the quarter-mile radius zone of the station including, Mentor Ave., Atlas Dr., and Adelaide Dr. which reduces accessibility to adjoining neighborhoods (Exhibit 4-21).
- Many existing sidewalks are deteriorating, obstructed, lack curb ramps, and do not conform to *Americans with Disabilities Act* (ADA) requirements (Exhibit 4-22).
- Numerous curb cuts used to allow motor vehicles access to a driveway or parking lot are prevalent on existing sidewalks along S. Lancaster Rd. and create unsafe conditions for bicyclists, pedestrians, and persons with mobility impairments alike, as the change in grade can be too abrupt and lead to an imbalance.
- The barb wire fence surrounding the Dallas VA Medical Center is uninviting and is not favorable for a pedestrian-friendly environment as it creates a sense of insecurity for pedestrians and creates a disconnect between the station and the surrounding environment (Exhibit 4-23).
- There are few existing retail or commercial businesses surrounding the station, and several vacant lots take up a large amount of space along the S. Lancaster Rd. corridor.
- The large parking lot located within the Dallas VA Medical Center is street-facing and creates a large setback causing a disconnect between pedestrians and the environment, and creates a safety concern as it increases possible conflicts between motorists and pedestrians and bicyclists. In addition, it fosters auto dependency as the landscape is dominated by the parking lot.
- While there is seating provided for passengers on the station platform, there is no street furniture located in the area around the station except for one uncovered bench near the bus stop inside the Dallas VA Medical Center grounds.

- Landscaping around the station is sparse, and only exists inside the Dallas VA Medical Center grounds.
- There are no existing pedestrian-scaled lighting, street buffers, or other public amenities to delineate pedestrian right-of-way and create an aesthetically pleasing environment.
- While there is an on-street bicycle route running east and west of the station, there are no facilities that run north and south to allow direct access to the station (Exhibit 4-20). The station area also lacks on-street bicycle lanes, shared lane markings, or other bicycle facilities connecting adjacent neighborhoods to the station.
- There are no existing bicycle amenities at or around the station.
- No public parking is offered for the station. While this may seem like an advantage, all modes of transportation should be supported at transit stations, including parking for motor vehicles, as mode share is a reasonable form of transportation.
- Right-of-way would need to be acquired to expand S. Lancaster Rd. to allow for on-street parking.

Exhibit 4-21

Exhibit 4-23

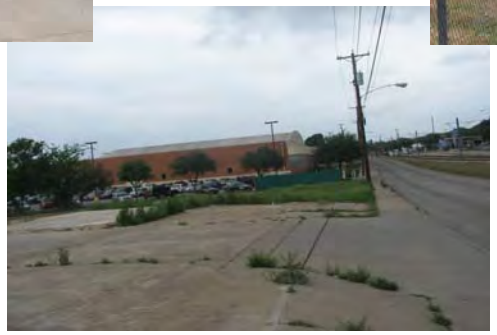


Exhibit 4-22

The VA Medical Center Station is unique because it serves as a connection to the Dallas VA Medical Center, but is lacking in other aspects that form a successful TOD including proper infrastructure, economic vitality, a mix of land uses, and increased densities. In order for this study area to develop into a thriving TOD, much attention should be paid to an accessible pedestrian network, with connections to the station from adjoining neighborhoods, economic revitalization, and scenic beautification.

Recommendations for bicycle and pedestrian facilities identified in the following section are based on the bicycle and pedestrian needs analysis. Recommendations should be confirmed with appropriate city departments and existing planning documents before implementation.

Bike and Pedestrian Recommendations

1. Removal of Greater Dallas Bike Plan route 120 on E. Ann Arbor Ave.
2. Addition of two on-street bike lanes per the 2011 Dallas Bike Plan:
    - A bike lane on Ann Arbor Ave. from Frio Dr. to Aztec Dr.; reduction from four 10-foot wide travel lanes to two 10-foot wide travel lanes, an 11-foot wide center turn lane, and two 4.5 foot bike lanes.
    - A bike lane on Veterans Dr. from Ann Arbor Ave. to E. Ledbetter Dr.; reduction from two 20-foot wide travel lanes to two 10-foot wide travel lanes, an 11-foot wide center turn lane, and two 4.5 foot bike lanes.
3. Traffic calming measures can be implemented on arterials, collectors, and neighborhood streets to slow traffic and improve bicycle and pedestrian safety and accessibility including, but not limited to, the following options (as warranted).
    - Narrow travel lanes in each direction (10 to 11 feet in width)
    - Installation of an 8-foot parallel parking lane on one or both sides of the street
    - Reduce speeds to 35 miles per hour or less (implementation of speed humps may be necessary)
    - Installation of center turn lanes or medians to shorten pedestrian crossing distances
    - Installation of bulb-outs at busy intersections to shorten pedestrian crossing distances

- Reduction in curb radii (4.6 m (15 feet) for residential streets and about 7.6 m (25 feet) for arterial streets with a substantial volume of turning buses and/or trucks) to slow right-turning vehicles

Each of these measures (on-street parking, narrowed travel lanes, medians, etc.) when implemented correctly has been proven to create a more pedestrian-friendly environment by reducing travel speeds and thus the occurrence of collisions. Additionally, these treatment options allow for safe accessibility to the transit station.

4. Shared use paths should connect to the station wherever feasible in an effort to increase pedestrian and bicycle accessibility. Amenities along shared use paths should be considered a priority in order to encourage activity and filter pedestrians and cyclists from surrounding neighborhoods to the station. Schools, parks, activity centers, and other major destinations should include shared use paths that offer direct connections to the station.
5. Sidewalks and ramps within the half-mile parameter of the station should be updated and/or implemented according to ADA standards as discussed in Appendix B. In addition, the following should be considered, particularly at heavy intersections:
    - crosswalks
    - signage
    - pedestrian traffic signals

    Additionally, expanded sidewalks (between 5 feet and 7 feet wide) with a buffer between the roadway and sidewalk should be implemented within a quarter-mile parameter of the station to encourage foot traffic and create a safer environment for pedestrians.
6. The at-grade crossing at the intersection of S. Lancaster Rd. and E. Ann Arbor Ave. is in need of the following improvements:
    - increased signage, specifically an LED flashing train warning sign
    - pedestrian gates
    - at-grade z-crossing
    - “Stop Here” pavement markings

7. Driveways that separate many of the existing buildings on S. Lancaster Rd. should be reconstructed for development, and parking should be diverted behind the buildings or on-street. In instances where this is not possible, the guidelines presented in Appendix B should be considered for alternative options. Additionally, new buildings or those being redeveloped or renovated should be oriented toward the street to allow for pedestrian access.
8. The street network surrounding the proposed TOD is in a good block form or grid pattern for the most part, but in areas where there are existing cul-de-sacs, large blocks, or dead ends, shared use paths should be created to allow neighboring communities pedestrian and bicycle access to the station.
9. Bicycle end-of-trip facilities should also be provided within the half-mile parameter of the station at desired destinations as discussed in Appendix B.
    - secure bicycle parking
    - bicycle racks
    - lockers
10. Priority should be given to updating bicycle and pedestrian facilities and amenities on roadways and public rights-of way within a half-mile parameter of the station location as illustrated in Exhibit 4-24 including implementation of the following as warranted:
    - street furnishings including pedestrian-scaled lighting, benches, kiosks, trash cans, planters, and landscaping
    - crosswalks and pedestrian traffic signals
    - on- and/or off-street bicycle facilities
11. Open space within the corridor should be preserved and made available to the public through parks, community gardens, or public plazas, in an effort to create a more welcoming environment. Open space can serve as a waiting or recreational area for patrons utilizing the transit station, as well as offer accessibility to the station. Pedestrian and bicycle amenities as discussed in Appendix B should be utilized.

Exhibit 4-24: VA Medical Center Station Area Bicycle and Pedestrian Facility Recommendations

Source: NCTCOG

Recommendations

Walkable Urban Mixed Use (WMU-12) medium intensity is recommended for the areas currently zoned as Community Retail and Multi-Family Residential. Additionally a shop front overlay should be added. The Residential Transition (RTN) district is recommended for areas that have established single-family residences in the residential (R-7.5(A)) district. Development allowed for WMU-12 are mixed-use shop front, general commercial, apartment, townhouse stacked, townhouse, civic building, and open space lots. This area should focus especially on commercial (especially eateries), retail and apartment development. Walkable commercial and retail destinations could capture revenue from hospital patrons and employees. Apartments could help accommodate hospital employee needs. An increase in compact development will also help reduce congestion in the area as less vehicle miles are traveled due to the availability of destinations within walking distances. For instance, a hospital employee may opt to walk to an eating establishment instead of getting in their vehicle to go to an eatery. The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended in the area (Exhibit 4-25.)

View a summary of the bicycle and pedestrian recommendations for all four stations in Chapter 7, Corridor Connections, Exhibit 7-1.

Exhibit 4-25: Use Chart for the VA Medical Center Station

		Mixed Use		General Commercial	Apartment	Townhouse Stacked		Townhouse	Civic Building	Open Space
		Ground Story	Upper Story	All Stories	All Stories	Ground Story	Upper Story	All Stories	All Stories	---
Residential	Single-family living		x			x	x	x		
	Multi-family living		x		x	x	x	x		
	Group living		x		x	x	x	x		
Civic	Community service: general	o	o	o		o			o	
	Community service: museum, library	x	x	x		x			x	
	Day care	x	x	x					x	
	Educational	x	x	x					x	
	Government service	x	x	x					x	
	Park or Open space									x
	Social service	o	o	o						
	Transit Station	x	x	x					x	
	Utilities									x
Place of Worship	Place of Worship	x	x	x					x	
Office	Medical	x	x	x						
	Office	x	x	x		x				
Retail	Restaurant or Bar	x								
	Retail Sales	x								
Service and Entertainment	Commercial amusement (inside)	o	o	o						
	Indoor recreation	x	x	x						
	Personal service	x	x	x						
	Animal care	x	x	x						
Commerce	Commercial parking	x	x	x						o
	Passenger terminal limited to a Helistop		o	o						
	Overnight lodging		x	x						

x = permitted; o = specific use permit; blank cell = not permitted

5. LEDBETTER STATION ASSESSMENT AND RECOMMENDATION

Data for the Ledbetter Station area includes demographics, zoning, land use, commercial and housing, and bike/pedestrian conditions. A summary of each topic is included in the chapter. Recommendations for improvements are included at the end of the station's section.

Demographics

The total population within one-quarter mile of the Ledbetter Station was 3,026 in 2010, an increase of 124 percent since 2000 (Exhibit 5-1). Over 87 percent of the population was African American in 2010; 6.93 percent was White. According to Exhibit 5-2, 10.93 percent of the population was Hispanic. The population around Ledbetter Station is expected to reach 4,618 by 2035, an increase of 52.61 percent (Exhibit 5-3). NCTCOG's 2035 Demographic Forecast was used to project the population at the TSZ level.

Exhibit 5-1: Ledbetter Station Area Total Population by Race

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
White Alone	60	4.44%	210	6.93%	250.00%
Black or African American alone	1,195	88.45%	2,660	87.90%	122.59%
American Indian and Alaska Native alone	7	0.52%	4	13%	-42.86%
Asian or Pacific Islander alone	0	0.00%	0	0.00%	0.00%
Other	75	5.55%	114	3.76%	52.00%
Multi-Racial	14	1.04%	38	1.25%	171.43%
Total	1,351	100.00%	3026	100.00%	123.98%

Source: Census 2010; Census 2000

Exhibit 5-2: Ledbetter Station Area Hispanic and Non-Hispanic Population

	Station Area Population				
Race	**2000 Population**	**2000 Percent**	**2010 Population**	**2010 Percent**	**Percent Change**
Hispanic or Latino	110	8.14%	332	10.93%	201.82%
Not Hispanic or Latino	1,241	91.86%	2,694	89.02%	117.08%
Total Population	1,351	100.00%	3,026	100.00%	123.98%

Source: Census 2010; Census 2000

Exhibit 5-3: Ledbetter Station Area Population 2035 Projection

	Station Area Population				
Station	**2000 Population**	**Percent Change**	**2010 Population**	**2035 Forecast**	**Percent Change**
Illinois Station	1,082	1.29%	1,096	1,138	3.83%
Ledbetter Station	1,351	123.98%	3,026	4,618	52.61%
Kiest Station	1,717	87.71%	3,223	3,112	-3.44%
VA Medical Center	1,959	12.25%	2,199	2,639	20.01%
Total	6,109	56.23%	9,544	11,507	20.57%

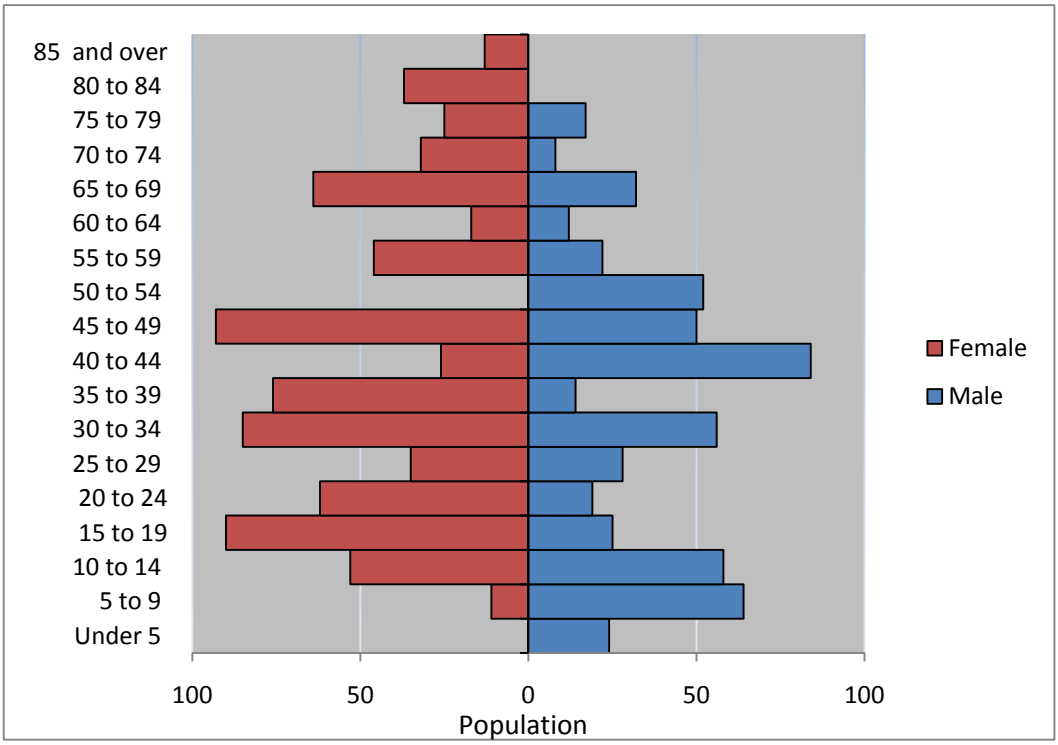
Source: Census 2010; Census 2000; NCTCOG 2035 Demographic Forecast

In order to evaluate more detailed information, the 2005-2009 American Community Survey was utilized. The age distribution in the Ledbetter Station area is widely disbursed with no definite trend. The largest age cohort was under 45 to 49 years with 11 percent of the station area population; the smallest percentage was below five years of age, accounting for less than two percent of the population (Exhibit 5-4). The majority of the population, 56 percent, fell between ages of 15 and 49.

The largest single percentage of males in the station area was between 40 and 44 years of age, making up 15 percent of the male population; no male residents 80 or older were reported. Males between 15 and 64 made up 64 percent of the total male population in the Ledbetter Station area.

The largest cohort of females in the station area, 12 percent, was between 45 and 49 years old in 2009. Females between 15 and 64 made up 69 percent of the population.

Exhibit 5-4: Ledbetter Center Station Age Pyramid

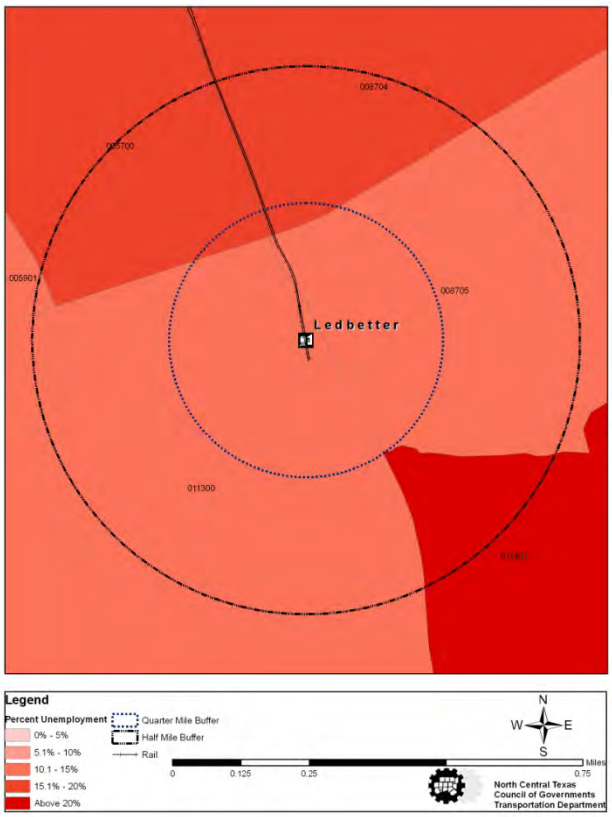


Source: 2005-2009 American Community Survey

Unemployment data was gathered from the 2005-2009 American Community Survey at the census tract level. The American Community Survey indicates that just over 16 percent of the workforce in the station area was unemployed in 2009. The census tracts are highlighted on Exhibit 5-5 and the details for each tract are listed on Exhibit 5-6. According to NCTCOG's Research and Information Services (RIS) Department, major employers, those with 80 or more employees, within the census block data include:

- VA North Texas Health Care System with 3,938 employees
- Harry Stone Montessori Academy with 375 employees
- Quiltcraft Industries Inc. with 141 employees
- Southhaven Nursing Center with 176 employees

Exhibit 5-5: Ledbetter Station Area 2009 Unemployment Rate



Source: 2005-2009 American Community Survey

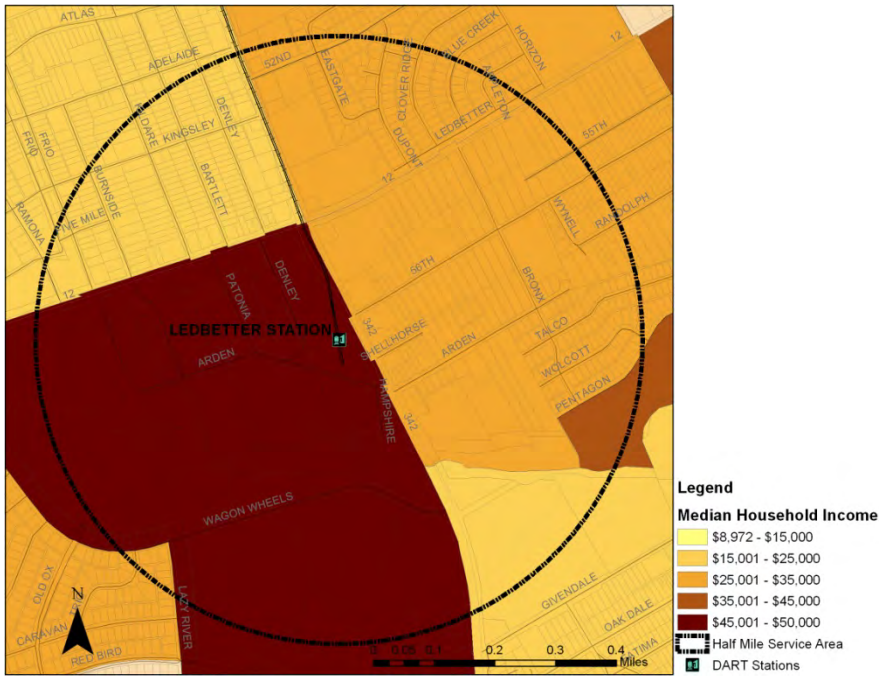
Exhibit 5-6: Ledbetter Station Area 2009 Unemployment Rate

Census Tract	Population 16 Years and Over in Labor Force	Population 16 Years and Over in Labor Force, Unemployed	Percent Unemployment
57	1,652	292	17.68%
87.04	1,355	264	19.48%
87.05	868	109	12.56%
113	2,167	317	14.63%
Total	6,042	982	16.25%

Source: 2005-2009 American Community Survey

The income level in the Ledbetter station area is relatively diverse. The median household income falls between $20,000 and $50,000 per year (Exhibit 5-7). The median household income of households in the western portion of the study area is $47,250. Households in the eastern portion have a median household income of $25,577 per year.

Exhibit 5-7: Ledbetter Station Area 2009 Median Household Income



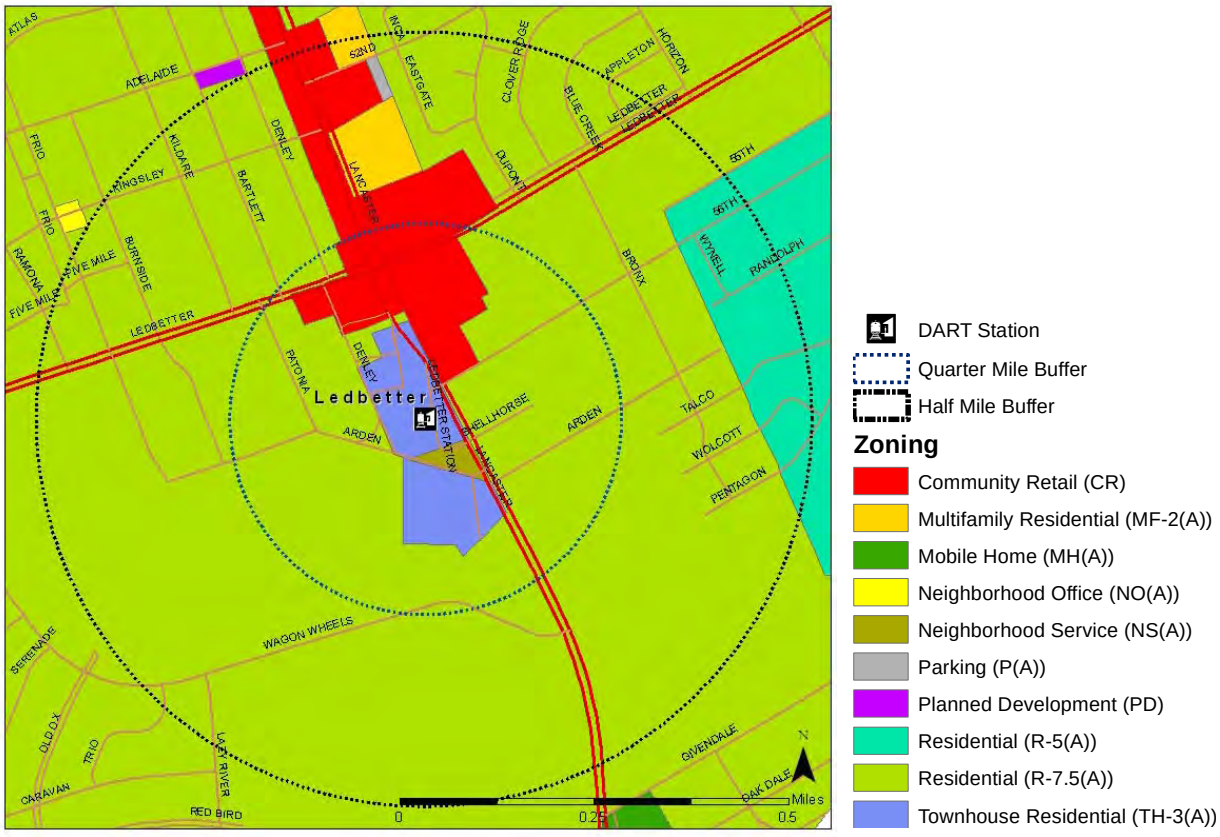
Source: American Community Survey, 2009

Current Zoning and Land Use

The Ledbetter Station's one-quarter mile buffer is zoned predominately for single family residential, townhouse residential, community retail, and neighborhood service. Within the one-half mile buffer, other zoning includes multi-family residential, mobile homes, and parking. No mixed-use and very minimal high density zoning exists in the area. Refer to Exhibit 5-8 for an image of the zoning around the Ledbetter Station. The area does have lush greenery and trees. More than half of the area is in a 100-year flood zone. Exhibit 5-9 shows the flood zone in relation to the Ledbetter Station. A good portion of the land in the flood zone has not been developed. While high density zoning is encouraged around a transit station, preserving open space for the enjoyment of recreation should be considered for the area.

This image shows the overview of the Ledbetter Station and some existing development.

Exhibit 5-8: Zoning Within One-Half Mile of the Ledbetter Station



Source: City of Dallas

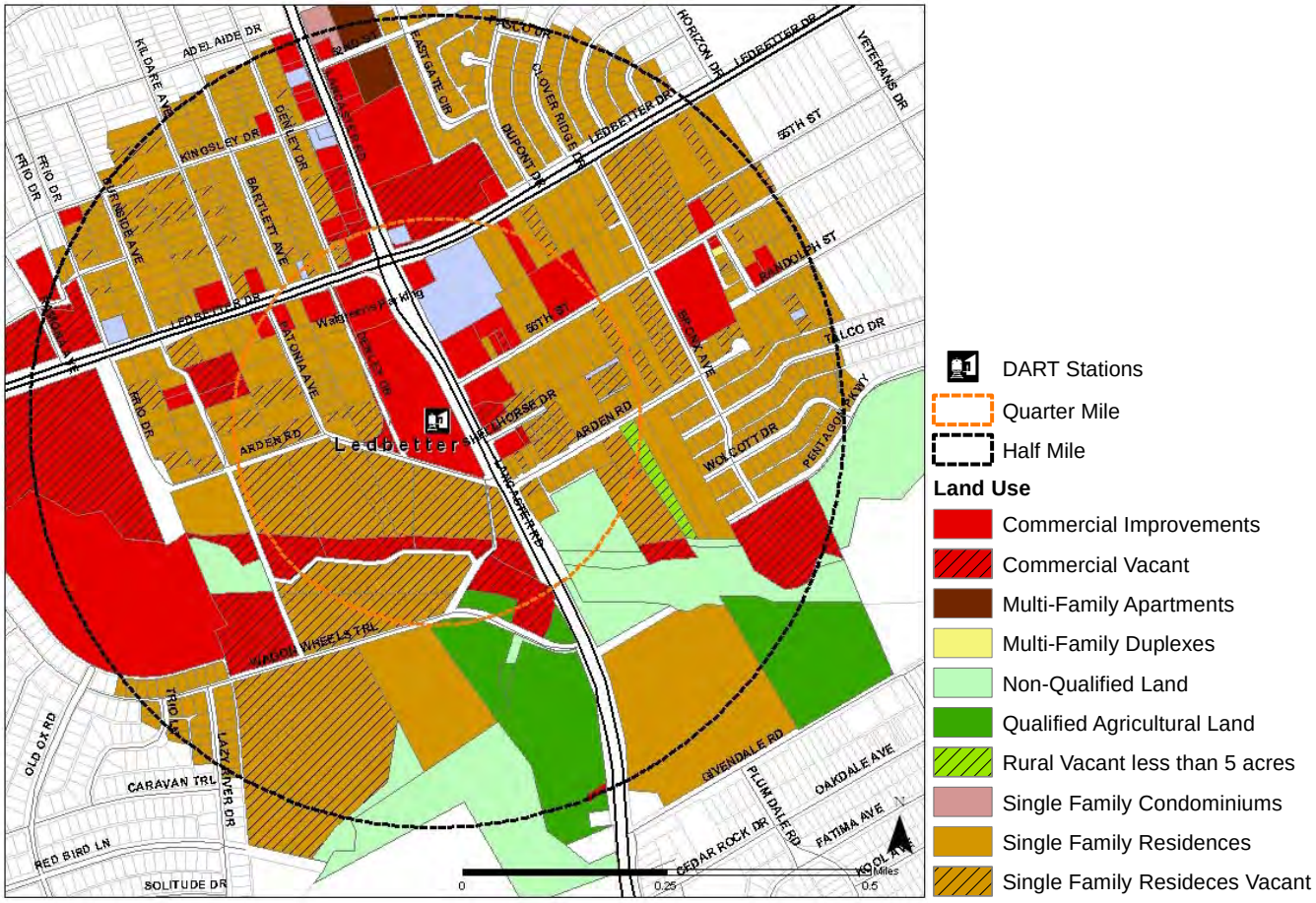
Exhibit 5-9: Ledbetter Station Area and Flood Zone

Source: NCTCOG

The land use around a one-quarter mile buffer from the Ledbetter Station has a bigger residential (single-family) portion than commercial. Exhibit 5-10 shows an overall view of the land use surrounding the Ledbetter Station. The area around this station has uses not found in the other stations such as non-qualified land, qualified agriculture land and rural vacant uses, most likely due to its proximity to the floodplain. There are a total of 144 parcels making up about 154 acres within the one-quarter mile buffer. Within one-quarter mile, single-family accounts for 104 parcels with about 76 acres or 50 percent; commercial has 33 parcels making up 50 acres or 32 percent; non-qualified land four parcels making up 21 acres or 14 percent; qualified agricultural land two parcels making up five acres or three percent; and rural vacant land, one parcel making up about two acres or one percent (Exhibit 5-11). There are a total of 768 parcels making up about 578 acres within the one-half mile buffer. Within a one-half mile radius, single-family accounts for 622 parcels making up about 255 acres or 44 percent; commercial 86 parcels

making up about 157 acres or 27 percent; and multi-family residential, three parcels making up about four acres or .70 percent (Exhibit 5-12).

Exhibit 5-10: Land Use Within One-Half Mile of the Ledbetter Station



Source: Dallas Central Appraisal District, 2009

Exhibit 5-11: Land Use Parcels Within One-Quarter Mile of the Ledbetter Station

Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	16		27.15		
Commercial - Vacant	17	33	22.90	50.05	32.40%
Non-Qualified Land	4	4	20.90	20.90	13.53%
Qualified Agricultural Land	2	2	5.03	5.03	3.26%
Rural Vacant - Less than 5 Acres	1	1	2.01	2.01	1.30%
Single-Family Residences	64		30.59		
Single-Family Residences - Vacant	40	104	45.90	76.49	49.51%
Grand Total	144	144	154	154.48	100.00%

Source: Dallas Central Appraisal District, 2009

Exhibit 5-12: Land Use Parcels Within One-Half Mile of the Ledbetter Station

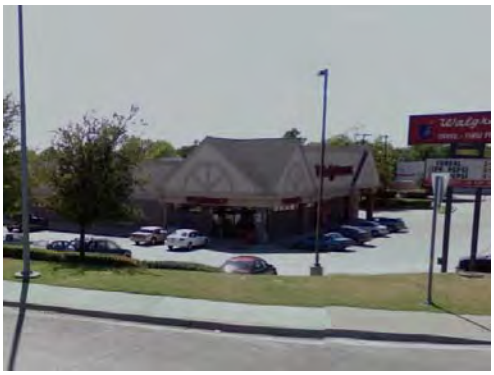
Land Use Category	No. of Parcels	Total No. of Parcels	Acres	Total Acres	Percent of Total Acres
Commercial Improvements	49		79.17		
Commercial - Vacant	37	86	77.74	156.91	27.16%
Multi-Family Residences - Apartments	2		3.94		
Multi-Family Residences - Duplexes	1	3	0.09	4.03	0.70%
Non-Qualified Land	11	11	75.31	75.31	13.03%
Qualified Agricultural Land	7	7	48.96	48.96	8.47%
Rural Vacant - Less than 5 Acres	1	1	2.01	2.01	0.35%
Single-Family Residences - Condominium	38	38	35.06	35.06	6.07%
Single-Family Residences	530		163.71		
Single-Family Residences - Vacant	92	622	91.79	255.50	44.22%
Grand Total	768	768	578	577.78	100.00%

Source: Dallas Central Appraisal District, 2009

Commercial/Retail Assessment

Commercial land use accounts for about 27 percent of the acres within a half-mile radius of the Ledbetter Station (Exhibit 5-12). There are a handful of businesses along the rail line within a one-quarter mile buffer. Businesses include a Jack in the Box, Walgreens, metroPCS, Texaco gas station, O'Reilly's Auto Parts, and a Minyard grocery store. These provide valuable services to the area. However, the building form of the existing developments are geared towards automobile travel such as the Jack in the Box that provides drive-through service and the large setback of the Walgreens, and do not take advantage of the proximity to rail. Additionally, buildings were developed as single-story stand-alone developments and entrances are buffered with parking making it uninviting for pedestrian activity to occur. The total value, which includes land value and improvement value, for commercial properties ranged from $1,060 to $651,940.

Jack in the Box located at 5025 S. Lancaster Rd. The eatery offers a drive-through service. The building is surrounded by parking.

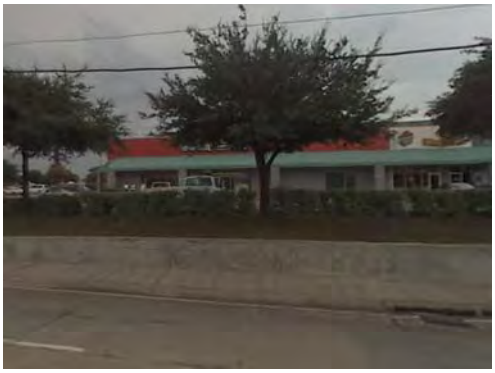


Walgreens located at 5101 S. Lancaster Rd. The building and landscape are in good condition. However, the entrance of the building is surrounded by parking making it difficult to walk to from the sidewalk.

metroPCS located at 2103 Ledbetter Dr. The site is underutilized. The business is in a stand-alone building and surrounded by parking.

5002 S. Lancaster Rd. Vacant site.

Texaco located at 2104 Ledbetter Dr. The current service includes a gasoline station.



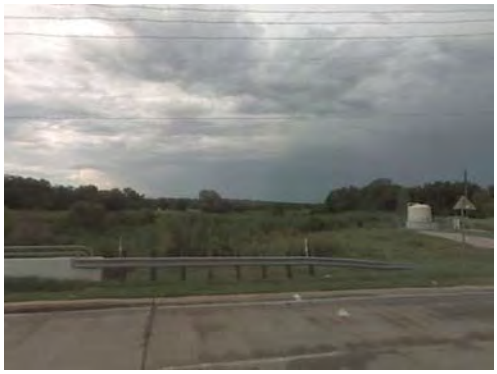
2130 Ledbetter Dr. The property contains a supermarket and commercial strip that is wrapped with parking. The entrances are not easily accessed by the sidewalk.

Texas Barber College/Fresenius Medical Care located at 5148 S. Lancaster Rd. The building and landscaping are well maintained. The building entrance is separated by parking from the sidewalk.

2107 Shellhorse Dr. Vacant site.

Sweet Fellowship Church located at 2106 Shellhorse Dr. The building and landscaping are in good condition. No sidewalks provided for entrance to the church.

5400 S. Lancaster Rd. Vacant site.



5307 S. Lancaster Rd. Vacant site.

Overall, the Ledbetter station area offers less commercial and retail services than most other stations in the Lancaster Corridor. Compatible services located near the station include a supermarket, pharmacy store, and the Texas Barber College. There is no compact development and the area does not provide for an inviting walkable environment.

Appendix C provides data from the 2009 Dallas Central Appraisal District. These parcels are a sample of the commercial businesses that are located along the rail line and within the one-quarter mile buffer of the station.

Housing Assessment

As previously mentioned, much of the Ledbetter Station area is in the floodplain. In fact, 13.30 percent of the housing units reviewed were in the floodplain. Despite its proximity to the flood plain, the Ledbetter station area has the highest percentage of housing units constructed after 1960 among the Lancaster corridor station areas at 14.18 percent (Exhibit 5-13). The majority of the housing units around Ledbetter Station, 86 percent, were constructed in 1960 or earlier.

Exhibit 5-13: Lancaster Corridor Station Area Housing Unit Construction Year

Year Constructed	Illinois	Kiest	VA Medical Center*	Ledbetter*
Unknown	3	2	7	4
Pre 1920	26	4	20	1
1920-1940	670	342	203	94
1941-1960	437	976	588	391
1961-1980	30	29	72	65
1981-2000	15	15	5	5
2001-2008	39	29	30	11
Total	1220	1397	925	571

* Parcels in this station area overlaps with another station area

Source: Dallas Central Appraisal District, 2009

The greatest period of housing development in the station area, according to 2009 Dallas Central Appraisal District records, was between 1941 and 1960. Housing units constructed during this time period account for 68.47 percent of the total housing in the study area. Despite this percentage, 82 percent of the housing units are occupied. This is a decrease from 2000, when the occupancy rate was 95.66 percent (Exhibit 5-14). The percentage of owner occupied units, however, increased to 91 percent.

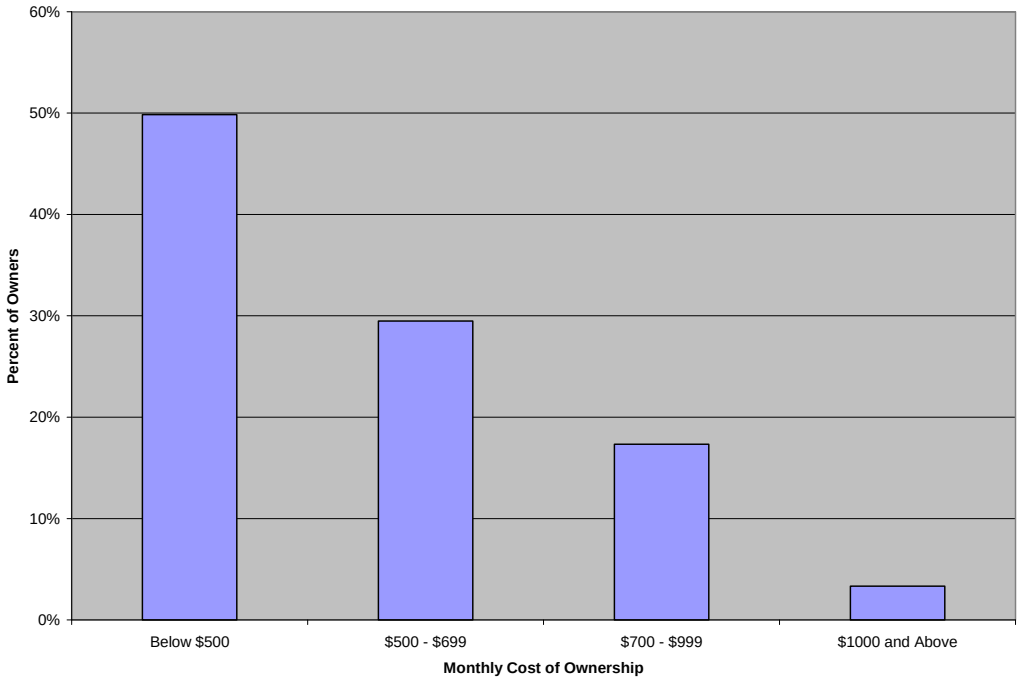
Exhibit 5-14: 2000 - 2009 Lancaster Corridor Housing Tenure

Station	2000 Percent Occupied	2000 Percent Owner Occupied	2009 Percent Occupied	2009 Owner Occupied
Illinois	90.19%	64.72%	87.65%	58.84%
Kiest	93.85%	73.28%	82.44%	58.99%
VA Medical Center	90.22%	60.37%	74.19%	63.65%
Ledbetter	95.66%	74.60%	81.88%	91.19%
Total	92.69%	69.09%	69.99%	92.64%

Source: 2005-2009 American Community Survey; Census 2000

The monthly cost of ownership for residents in the Ledbetter Station area ranged from below $100 to $1,250 in 2000 (Exhibit 5-15). In fact, 49.85 percent of the residents paid less than $500 a month. However, the Ledbetter Station area had the highest percentage of owner occupied households paying between $500 and $999; 29.48 percent paid between $500 and $699; and 17.33 percent paid between $700 and $999. By 2009, the average monthly cost of ownership increased to between $1,000 and $1,500 a month from the 2000 rates. However, 66 percent of the owner occupied housing units are on the west side of the station, where residents can afford to spend $1,181 per month on rent. Residents east of the station can only afford to pay $639 per month.

Exhibit 5-15: Ledbetter Station Area Monthly Cost of Ownership for Owner Occupied Housing

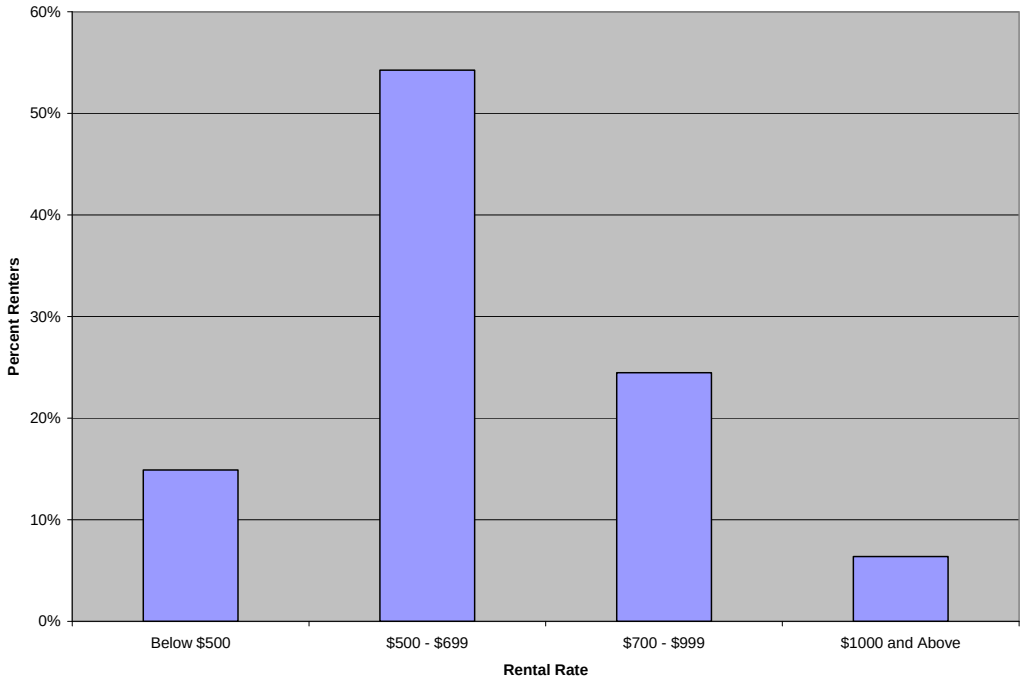


Source: 2005-2009 American Community Survey

Although the majority of the renters in the Ledbetter Station area paid over $500 a month for rent, 2000 rental rates in the Station Area were affordable (Exhibit 5-16). Residents living east of the track, which accounted for 95.53 percent of the renter occupied housing units, could afford to pay $707. Interestingly, 69 percent of the renter occupied households in the station area paid $699 or less per month.

According to the 2005-2009 American Community Survey, there were only 43 rental units within one-quarter mile of the station; too few to publish.

Exhibit 5-16: Ledbetter Station Area Rental Rates



Source: 2005-2009 American Community Survey

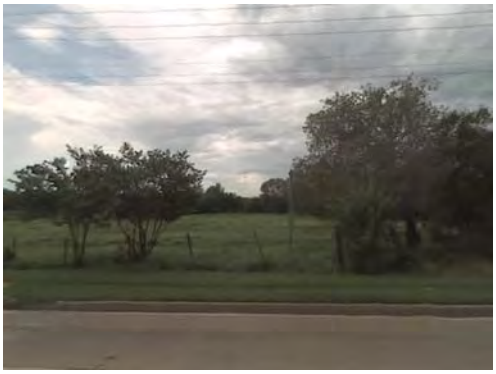
Images and information of the existing housing or parcels labeled residential along the rail line and within a quarter-mile of the station are shown on the following pages.

Single-family located at 2103 Arden Rd. This residence is in need of repairs as indicated by the wooden boards over several sections of the house.

5304 S. Lancaster Rd. Vacant site.

5308 S. Lancaster Rd. This single-family house has a well-maintained building and landscaping appearance.

5320 S. Lancaster Rd. This single-family house has a well-maintained building and landscaping appearance.



5307 S. Lancaster Rd. Vacant site.

Appendix C provides data from the 2009 Dallas Central Appraisal District. These residential units are located along the rail line and within the one-quarter mile buffer of the station.

A TOD assessment should identify opportunities and constraints to non-motorized modes of transportation as these modes promote accessibility to the station and surrounding developments while allowing for densities that support a TOD by potentially reducing parking needs. The following section outlines the bicycle and pedestrian conditions at and surrounding the Ledbetter Station.

Bicycle/Pedestrian Conditions

A bicycle and pedestrian needs assessment is a critical component of any viable TOD site. The following provides a discussion of opportunities and constraints for bicyclists and pedestrians at the Ledbetter Station location.

The Ledbetter Station has significant opportunities for bicycle and pedestrian accessibility and connectivity. These characteristics are discussed in further detail below.

Opportunities:

- Sidewalks exist on the west side of S. Lancaster Rd. surrounding the station.
- Sidewalks allow adjacent neighborhoods access to the station via 56th St., E. Ledbetter Dr., and S. Denley Dr.
- Undeveloped land surrounds the station bearing traces of Dallas' rural past which serves as an attraction for pedestrians and bicyclists. Surrounding parks and greenbelts located within the one-half mile radius zone of Ledbetter Station include Ricketts Branch Park, Glendale Park, and Arden Terrace Park. In addition, the Five Mile Creek Greenbelt, Singing Hills Park (not shown on map), Runyon Creek Greenbelt, and College Park will all be connected to the station area in the future by funded and planned trails.
- A pocket park exists in the area just east of the station and includes three small pedestrian plazas. Abstract designs on paving throughout the platform, walkways, an interactive bell tower, landscaping, and a small amphitheater help to visually unite the station (Exhibit 5-17).
- An at-grade crossing exists to the north of the station, and allows pedestrians, bicyclists, and persons with mobility impairments access to the station (Exhibit 5-18).
- Crosswalks and pedestrian traffic signals exist at major intersections including S. Lancaster Rd. and Shellhorse Rd. (Exhibit 5-19).

- Multimodal coordination exists as the station has a direct connection to DART bus routes 405, 415, 444, 466, 515, 553 (M-S), and 554. Buses have a designated bus drive through directly next to the station allowing for quick transfers and easy accessibility by pedestrians.
- The 2011 Dallas Bike Plan includes an on-street bicycle facility in the form of a bike lane on Veterans Dr. extending from Ann Arbor Ave. to E. Ledbetter Dr.
- The existing Glendale Park Trail, which is included in the Dallas Trail Network Plan and the Regional Veloweb, lies to the southwest of the station in Glendale Park. The trail includes a pedestrian bridge across the Five Mile Creek that connects the northern and southern portions of the trail. A planned extension to the Glendale Park Trail, which connects to the northern portion of the existing trail, and runs parallel to E. Ledbetter Dr., will connect the Glendale Park Trail to the existing Five Mile Creek Greenbelt Trail. This trail runs through the existing Five Mile Creek Greenbelt, and offers a connection to the Cedar Crest Trail (not shown on map) and the Greater Dallas Bike Plan route 120 in the north (not shown on map).
- The Glendale Park Trail also has a northeastern connection to the three-mile funded portion of the Five Mile Creek Greenbelt Trail, which is also included in the Dallas Trail Network Plan and the Regional Veloweb. This portion of the Five Mile Creek Greenbelt Trail will connect Glendale Park to Arden Terrace Park and College Park (not shown in map). The remaining 5.8 mile planned portion of the Five Mile Creek Greenbelt Trail will pass under Interstate 45 and end at the Great Trinity Forest Trail in the Joppa Preserve (not shown in map). This trail will offer a connection to the station from adjacent neighborhoods to the east, as well as Paul Quinn College (not shown in map).
- The planned Runyon Creek Trail, included in the Dallas Trail Network Plan and the Regional Veloweb, will connect the southeastern portion of the Glendale Park Trail to Ricketts Branch Park, Singing Hills Park (not shown in map), Runyon Creek Park, and end at Houston School Rd (not shown in map). The trail will also intersect Greater Dallas Bike Plan routes 49 and 110 (not shown in map). This trail will offer alternative route options to neighborhoods southwest of the station.

- Bicycle amenities are located at the station including one bike rack and two bike lockers (Exhibit 5-20).
- DART allows clean bicycles on-board all rail lines (provided they are not posing a safety threat), and has installed bicycle carrier racks on its entire fleet of buses, further enhancing a seamless multimodal connection.
- Public amenities including sheltered seating, restrooms, trash receptacles, telephones, ticket vending machines, and station monitors are present at the station creating a more pleasant experience for passengers.
- Ramps and lifts are provided for bicyclists and passengers with mobility-impairments, and provide safe access onto the train and station platform.
- Ample parking is provided and offers a direct connection to the west of the station.

Exhibit 5-17

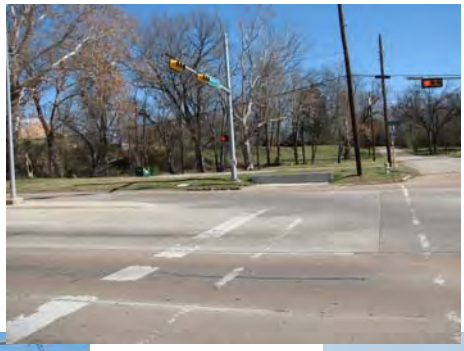


Exhibit 5-19

Exhibit 5-18

Exhibit 5-20

Though the Ledbetter station area has many existing opportunities, it also has several limitations that should be addressed to realize the full potential of this TOD site.

Constraints:

- There are limited sidewalk connections to adjacent neighborhoods with critical links missing on the east side of S. Lancaster Rd., Shellhorse Rd., Arden Rd., and E. Ledbetter Dr. (Exhibit 5-21).
- Surrounding neighborhoods lack an interconnected sidewalk network which limits accessibility to the station.
- Sidewalks discontinue on the east side of S. Lancaster Rd. across from the station, and to the south of it, causing unsafe conditions for pedestrians (Exhibit 5-22).
- Many existing sidewalks are deteriorating, obstructed, lack curb ramps, and do not conform to *Americans with Disabilities Act* (ADA) requirements, such as those located on E. Ledbetter Dr.
- S. Lancaster Rd. measures three lanes in each direction and includes a raised median to divide the road where it fronts Ledbetter Station. It contains no mid-block crossings and only has pedestrian crosswalks at two intersections: E. Ledbetter Dr. and the north intersection of Shellhorse Rd. This creates dangerous crossing situations for pedestrians who try to access the station from the east side of S. Lancaster Rd., as the distance between the two crosswalks is longer than the station itself and exceeds 1,250 feet (Exhibit 5-23).
- While there is an at-grade crossing located to the north of the station, there are no other safety measures for pedestrians, bicyclists, and persons with cognitive or mobility impairments in place at this crossing, such as automatic pedestrian gates, tactile warnings, or flashing train warning signs.
- The slip lane, or right-turn channelization lane, located at the north entrance of the station which allows buses quick and direct access to the station, is not safe for pedestrian or bicyclists. This lane allows motor vehicles to proceed into the entrance without stopping, and, generally at a higher speed than if they had to make a 90-degree right turn, jeopardizing

the safety of pedestrians crossing at this intersection, or bicyclists who are traveling south along S. Lancaster Rd.

- Many businesses and retail surrounding the station lack curb appeal and have setbacks due to street-facing parking lots, causing a disconnect between pedestrians and the environment, and encouraging motor vehicle traffic (Exhibit 5-24).
- The majority of the businesses surrounding the station are auto-dependent, and include gas stations, fast food restaurants with drive-through service, small shopping centers, and large box retail (e.g. Jack-in-the-Box on the northwest corner of E. Ledbetter Dr. and S. Lancaster Rd., and the Texaco gas station located on the southeast corner of E. Ledbetter Dr. and S. Lancaster Rd).
- S. Lancaster Rd. is a wide, higher speed road which separates Ledbetter Station from retail shops east of the station, resulting in a lack of unity between the station and the surrounding environment.
- There is no existing pedestrian-scaled lighting or street buffers to delineate pedestrian right-of-way and create an aesthetically pleasing environment.
- While there are benches on the station platform, there is no street furniture located around the station.
- The parking lot to the west of the station encourages automobile traffic and does not foster a pedestrian-friendly environment.
- There are no existing on-street bicycle routes that offer direct access to the station. The station area also lacks on-street bicycle lanes, shared lane facilities, or other bicycle facilities connecting adjacent neighborhoods to the station.
- While there are existing, planned, and funded off-street trails surrounding the station, there are currently no on-street linkages planned or existing to allow bicyclists utilizing these trails access to the station (Exhibit 5-25).
- The only bicycle facility within the quarter-mile study zone of the station is the funded, yet not complete, Five Mile Creek Greenbelt Trail.

Exhibit 5-21

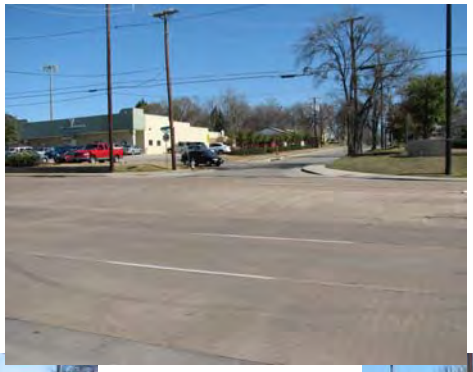
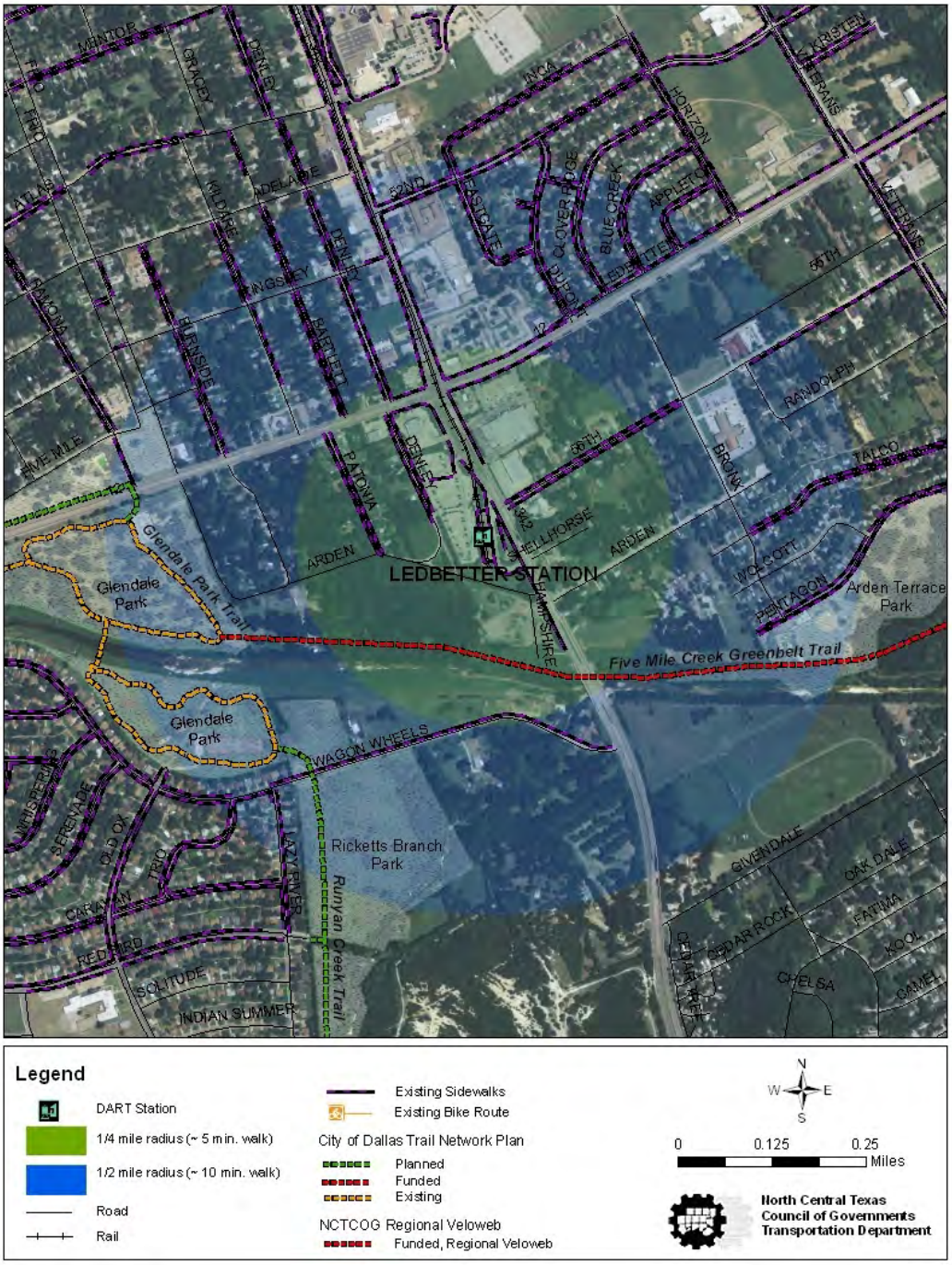


Exhibit 5-23

Exhibit 5-22

Exhibit 5-24

Exhibit 5-25: Ledbetter Station Area Bicycle and Pedestrian Facility Overview



Source: NCTCOG

Although the Ledbetter Station has several features in place to create a successful TOD, the existing infrastructure does not foster a pedestrian-friendly environment and lacks connectivity. Investments should be made in improving the existing infrastructure, increasing connectivity around the station, and creating a more pedestrian-friendly environment in order for this station to develop into a successful TOD.

Recommendations for bicycle and pedestrian facilities identified in the following section are based on the bicycle and pedestrian needs analysis. Recommendations should be confirmed with appropriate city departments and existing planning documents before implementation.

Bicycle and Pedestrian Recommendations

1. Addition of an on-street bike lane on Veterans Dr. from Ann Arbor Ave. to E. Ledbetter Dr.; reduction from two 20-foot wide travel lanes to two 10-foot wide travel lanes, an 11-foot wide center turn lane, and two 4.5 foot bike lanes, per the 2011 Dallas Bike Plan.
2. Traffic calming measures should be implemented on arterials, collectors, and neighborhood streets to slow traffic and improve bicycle and pedestrian safety and accessibility including, but not limited to, the following options (as warranted).
    - Narrow travel lanes in each direction (10 to 11 feet in width)
    - Installation of an 8 foot parallel parking lane on one or both sides of the street
    - Reduce speeds to 35 miles per hour or less (implementation of speed humps may be necessary)
    - Installation of center turn lanes or medians to shorten pedestrian crossing distances
    - Installation of bulb-outs at busy intersections to shorten pedestrian crossing distances
    - Reduction in curb radii (4.6 m (15 feet) for residential streets and about 7.6 m (25 feet) for arterial streets with a substantial volume of turning buses and/or trucks) to slow right-turning vehicles

    Each of these measures (on-street parking, narrowed travel lanes, medians, etc.) when implemented correctly has been proven to create a more pedestrian-friendly environment by

reducing travel speeds and thus the occurrence of collisions. Additionally, these treatment options allow for safe accessibility to the transit station.

3. The planned extension to the Glendale Park Trail, which connects to the northern portion of the existing trail and runs parallel to E. Ledbetter Dr., should be implemented to connect the Glendale Park Trail to the existing Five Mile Creek Greenbelt Trail.
4. Construction of the three-mile funded portion of the Five Mile Creek Greenbelt Trail, which is also included in the Dallas Trail Network Plan and the Regional Veloweb, should begin to connect Glendale Park to Arden Terrace Park and College Park. The remaining 5.8 mile planned portion of the Five Mile Creek Greenbelt Trail which passes under Interstate 45 and ends at the Great Trinity Forest Trail in the Joppa Preserve should also be implemented. This trail will create an important connection to the station from adjacent neighborhoods to the east, as well as Paul Quinn College.
5. The Runyon Creek Trail, included in the Dallas Trail Network Plan and the Regional Veloweb, should be implemented to connect the southeastern portion of the Glendale Park Trail to Ricketts Branch Park, Singing Hills Park, and Runyon Creek Park. The trail also has important connections to the Greater Dallas Bike Plan routes 49 and 110 and would offer alternative route options to neighborhoods southwest of the station.
6. Sidewalks and ramps within the half-mile parameter of the station should be updated and/or implemented according to ADA standards as discussed in Appendix B. In addition, the following should be considered particularly at heavy intersections:
    - crosswalks
    - signage
    - pedestrian traffic signals

    Additionally, expanded sidewalks (between 5 feet and 7 feet wide) with a buffer between the roadway and sidewalk should be implemented within a quarter-mile parameter of the station to encourage foot traffic and create a safer environment for pedestrians.
7. The at-grade crossing at the intersection of S. Lancaster Rd. and E. Ledbetter Dr. is in need of the following improvements:

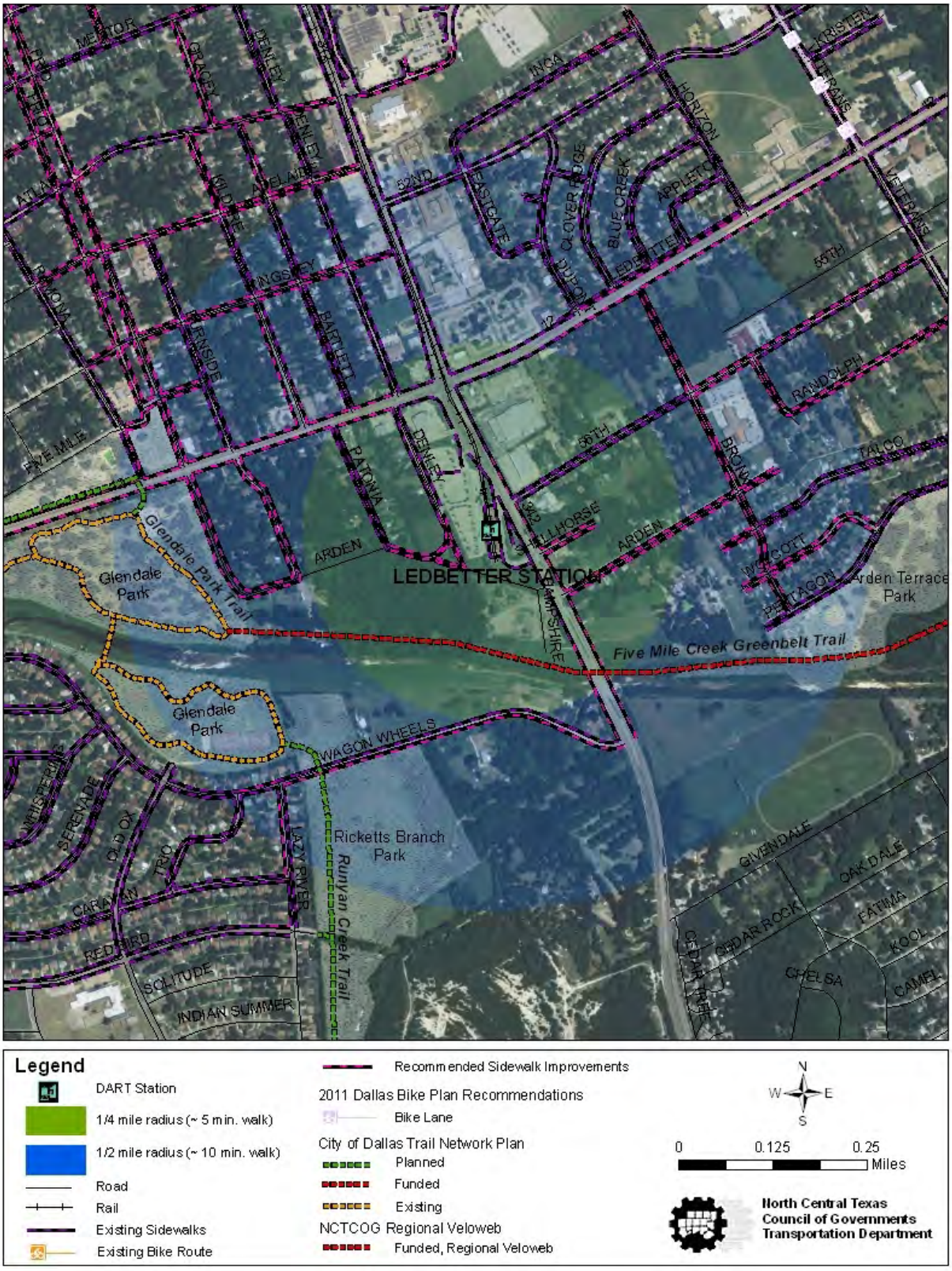
- increased signage, specifically an LED flashing train warning sign
- pedestrian gates
- at-grade z-crossing
- “Stop Here” pavement markings

8. A mid-block crossing at 56th St. to Ledbetter Station is needed to improve safety for pedestrians trying to access the station from the east. This should consist of, but not limited to, the following components:
    - a highly visible crosswalk
    - signage, specifically an LED flashing pedestrian warning sign
9. Driveways that separate many of the existing buildings on S. Lancaster Rd. should be reconstructed for development, and parking should be diverted behind the buildings or on-street. In instances where this is not possible, the guidelines presented in Appendix B should be considered for alternative options. Additionally, new buildings or those being redeveloped or renovated should be oriented toward the street to allow for pedestrian access.
10. The street network surrounding the proposed TOD is in a good block form or grid pattern for the most part, but in areas where there are existing cul-de-sacs, large blocks, or dead ends, shared use paths should be created to allow neighboring communities pedestrian and bicycle access to the station.
11. Bicycle end-of-trip facilities should also be provided within the half-mile parameter of the station at desired destinations as discussed in Appendix B.
    - secure bicycle parking
    - bicycle racks
    - lockers
12. Priority should be given to updating bicycle and pedestrian facilities and amenities on roadways and public rights-of-way within a half-mile parameter of the station location as illustrated in Exhibit 5-26 including implementation of the following as warranted:
    - street furnishings including pedestrian-scaled lighting, benches, kiosks, trash cans, planters, and landscaping

- crosswalks and pedestrian traffic signals
- on- and/or off-street bicycle facilities

13. Open space within the corridor should be preserved and made available to the public through parks, community gardens, or public plazas, in an effort to create a more welcoming environment. Open space can serve as a waiting or recreational area for patrons utilizing the transit station, as well as offer accessibility to the station. Pedestrian and bicycle amenities as discussed in Appendix B should be utilized.

Exhibit 5-26: Ledbetter Station Area Bicycle and Pedestrian Facility Recommendations



Source: NCTCOG

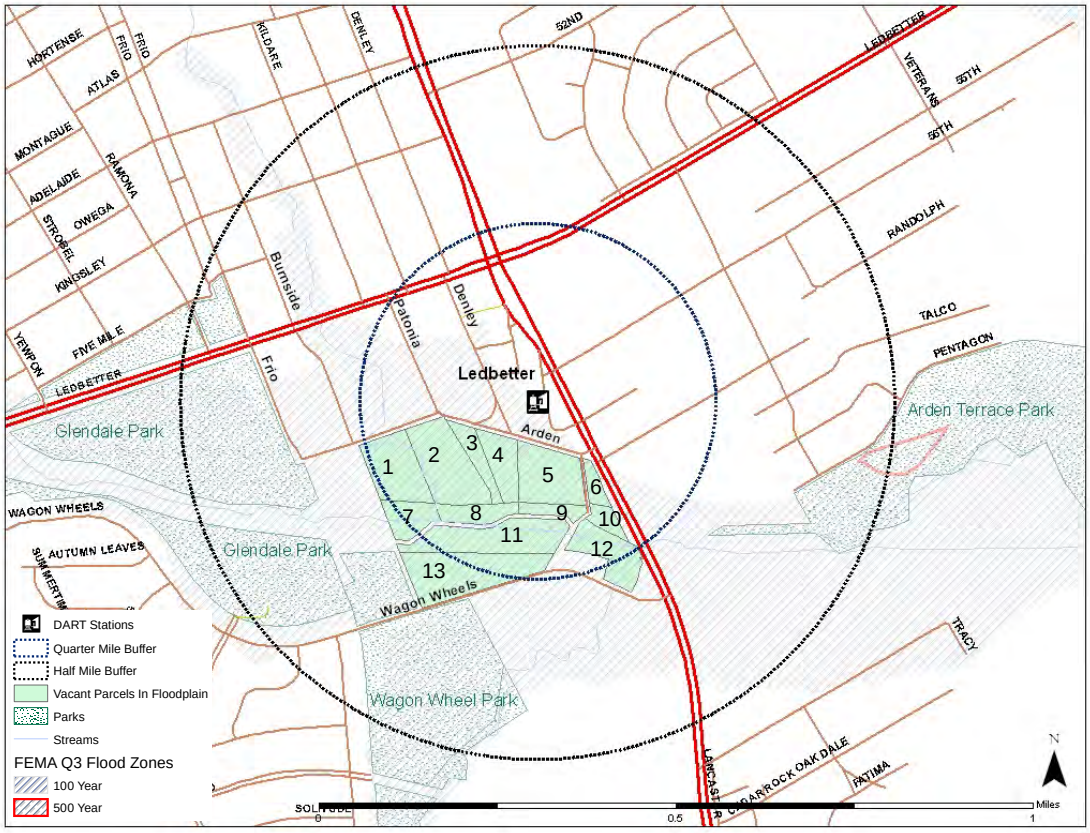
Recommendations

According to a forwardDallas! citizen survey, results showed that 51 percent of respondents say Dallas does not have enough open space and parks. The forwardDallas! Environment Element states that while 7,415 acres of floodplains have been developed, more than 10,000 acres of the city's floodplains are vacant and should be protected from development through acquisition, restoration, and dedication of open space. ForwardDallas! contains Policy 6.4.2 that calls for protecting open space and Policy 6.4.3 that calls for acquiring open space.

The Ledbetter Station area has the highest population increase relative to the other Lancaster Corridor stations. Ledbetter has about a 52 percent population increase around the one-quarter mile buffer from the station. Efforts can be made to direct a high increase in population from this station to others. Areas immediately (one-quarter mile buffer) surrounding the transit station are normally recommended to have compact development and increased density. However, this area is unique in that it has undeveloped floodplains which would connect to nearby parks and trails. Open space brings many values to the community and the region including but not limited to improved air and water quality, recreational purposes, and providing a habitat for wildlife. Open space within a walkable distance of a transit station allows access to a park without the means of utilizing a personal vehicle. Younger members of the community would have access to recreational areas without having to be driven to the park.

It is recommended that development within one-quarter mile of the station be limited. Exhibit 5-27 shows the vacant parcels in the floodplain that are within the one-quarter mile buffer of the station. Appendix C contains additional information on the vacant parcels. The City may consider preserving open space and developing trails leading to nearby parks: Glendale, Wagon Wheel, and Arden Terrace.

Exhibit 5-27: Vacant Parcels in Floodplain



Source: Dallas Central Appraisal District, 2009

The current Townhouse Residential (TH-3(A)) should be zoned to the Residential Transition (RTN) District to increase townhomes and manor houses, not including parcels 1-13 listed in Exhibit 5-30. New single-family housing development should be avoided at least within one-quarter mile buffer of the area. Townhomes and manor houses will provide for an opportunity to increase housing options in the area in addition to providing opportunities for a greater amount of people to live near the station and enjoy the proposed open space. The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended in the area (Exhibit 5-28).

Exhibit 5-28: Use Chart for the Ledbetter Station RTN District

		Townhouse	Single-Family House	Manor House	Civic Building	Open Space
Residential	Single-family living	x		x		
	Multi-family living	x		x		
	Group living	x		x		
Civic	Community service: general				x	
	Community service: museum, library				x	
	Day care				x	
	Educational				x	
	Government service				x	
	Park or Open space					x
	Transit Station				x	
	Utilities					x
Place of Worship	Place of Worship				x	

x = permitted; o = specific use permit; blank cell = not permitted

The current Community Retail zoned areas should be rezoned to low Walkable Urban Mixed Use (WMU-3, WMU-5) district, the exception being parcels 1-13 that should be kept as park/open space. Development of new single-story buildings should be avoided at least within one-quarter mile buffer around the station. Most uses are able to be incorporated into multi-story mixed-use buildings which will allow for density increase. The Use Chart found in the Form District Ordinance was modified to show those uses that are highly recommended in the area (Exhibit 5-29).

View a summary of the bicycle and pedestrian recommendations for all four stations in Chapter 7, Corridor Connections, Exhibit 7-1.

Exhibit 5-29: Use Chart for the Ledbetter Station WMU-3, WMU-5 District

		Mixed Use		Single Story Shop front	General Commercial	Apartment	Townhouse Stacked		Townhouse	Manor House	Civic Building	Open Space
		Ground Story	Upper Story	Ground Story	All Stories	All Stories	Ground Story	Upper Story	All Stories	All Stories	All Stories	--
Residential	Single-family living		x				x	x	x	x		
	Multi-family living		x			x	x	x	x	x		
	Group living		x			x	x	x	x	x		
Civic	Community service: general	o	o		o		o				o	
	Community service: museum, library	x	x		x		x				x	
	Day care	x	x		x						x	
	Educational	x	x		x						x	
	Government service	x	x	o	x						x	
	Park or Open space											x
	Social service	o	o	o	o							
	Transit Station	x	x	x	x						x	
	Utilities											x
Place of Worship	Place of Worship	x	x		x						x	
Office	Medical	x	x		x							
	Office	x	x		x		x					
Retail	Restaurant or Bar	x										
	Retail Sales	x										
Service and Entertainment	Commercial amusement (inside)	o	o	o	o							
	Indoor recreation	x	x	o	x							
	Personal service	x	x		x							
	Animal care	x	x		x							
Commerce	Commercial parking	x	x	o	x							o
	Passenger terminal limited to a Helistop		o		o							
	Overnight lodging		x		x							

x = permitted; o = specific use permit; blank cell = not permitted

6. PARKING

Parking in and around transit stations has historically been an issue that can lead to economic development constraints. Density, building up rather than out, is a key strategy for clustering growth. The extra land area devoted to parking can cause a serious problem. If densities are increased, more land area must be devoted to parking, limiting development, and the distance between buildings increases, making the environment more hostile to pedestrians. However, if sufficient parking is not provided it can cause spillover parking problems. Parking around TOD's has typically taken the normal required parking space requirements which can vary by jurisdiction and do not follow one set national or state standard formula. With a fixed route transit system the dependence on utilizing an automobile can be minimized thus reducing the need for the conventional parking space requirements. Another issue to consider is parking placement. Typically park-and-ride lots are placed right next to the transit station for easy accessibility access for on and off boarding of the light rail. However, this can limit the development around the station and it is preferred that parking be placed behind development so that those businesses can utilize the foot traffic. Parking development for the station is lead by DART. As redevelopment takes place there may be some coordination that can occur between the City and DART to possibly establish shared use or other parking arrangements.

Under many current parking standards used within the region, it would be nearly impossible to achieve a pedestrian-scaled environment or transit supportive densities at station areas. The best solution for station area development is to lower parking ratios and put as much parking as possible on-street, in garages or, better yet, underground. Lowering parking ratios can be achieved by utilizing a shared parking factor. Both maximum parking allowances and minimum parking requirements for all commercial and employment development should be established within the station area. Minimum requirements help to avoid spillover parking in retail areas or nearby neighborhoods, maximums guard against overly generous parking supplies that discourage transit use. Short-term parking controls should be utilized in commercial core areas to discourage commuter parking near retail uses. On-street parking is critical to keeping the focus of a community on the street, rather than the interior of lots. On-street parking helps to create street activity, as well as buffer the pedestrian from vehicle traffic, and slow vehicle speeds. It

provides convenient access for guests or patrons, reinforcing the orientation of building entries to the street. On-street parking can be compatible with bicycle travel, provided that auto speeds are slow enough to allow bicyclists to travel safely in the street. While the goal is to reduce automobile traffic within the TOD, sufficient parking for those who must use this mode of travel should be provided. However, there are several techniques that can be implemented to deter those individuals who use the automobile needlessly. This can be in the form of reducing minimum parking requirements, reducing maximum parking allowances, requiring individuals to pay to park, requiring payment for an automobile to enter the TOD, or any combination of the aforementioned. Implementing these techniques will discourage individuals from using the automobile unnecessarily, and help promote alternative modes of transportation.

Parking management refers to the various strategies that can be implemented to provide the adequate amount of parking without compromising the land available for development. Parking can be a deterrent to transit ridership and pedestrian mobility around the transit station. Parking not only limits the land available for development, it also encourages the use of the automobile. A recent study, Guaranteed Parking – Guaranteed Driving,[vi] compared two neighborhoods in New York which showed that given the same transit options, the neighborhood that provided more off-street parking spots increased the likelihood that people would drive to work. To help with the parking supply balance refer to Exhibit 6-1 which provides a list of parking management strategies, typical parking requirement reduction at a destination, and the impact on vehicle traffic reduction.

Parking management strategies that reduce traffic can also lead to improvements in congestion and air quality and lessen accidents. The appropriate strategy will depend on various conditions such as the development type, density, land available, and transit ridership.

Exhibit 6-1: Summary of Parking Management Strategies

Strategy	Description	Typical Reduction	Traffic Reduction
Shared Parking	Parking spaces serve multiple users and destinations.	10-30%	
Parking Regulations	Regulations favor higher-value uses such as service vehicles, deliveries, customers, quick errands, and people with special needs.	10-30%	
More Accurate and Flexible Standards	Adjust parking standards to more accurately reflect demand in a particular situation.	10-30%	
Parking Maximums	Establish maximum parking standards.	10-30%	
Remote Parking	Provide off-site or urban fringe parking facilities.	10-30%	
Smart Growth	Encourage more compact, mixed, multi-modal development to allow more parking sharing and use of alternative modes.	10-30%	X
Walking and Cycling Improvements	Improve walking and cycling conditions to expand the range of destinations serviced by a parking facility.	5-15%	X
Increase Capacity of Existing Facilities	Increase parking supply by using otherwise wasted space, smaller stalls, car stackers and valet parking.	5-15%	X
Mobility Management	Encourage more efficient travel patterns, including changes in mode, timing, destination and vehicle trip frequency.	10-30%	X
Parking Pricing	Charge motorists directly and efficiently for using parking facilities.	10-30%	X
Improve Pricing Methods	Use better charging techniques to make pricing more convenient and cost effective.	Varies	X
Financial Incentives	Provide financial incentives to shift mode, such as cash out.	10-30%	X
Unbundle Parking	Rent or sell parking facilities separately from building space.	10-30%	X
Parking Tax Reform	Change tax policies to support parking management objectives.	5-15%	X
Bicycle Facilities	Provide bicycle storage and changing facilities.	5-15%	X
Improve User Information and Marketing	Provide convenient and accurate information on parking availability and price, using maps, signs, brochures and electronic communication.	5-15%	X
Improve Enforcement	Insure that parking regulation enforcement is efficient, considerate and fair.	Varies	
Transportation Management Associations	Establish member-controlled organizations that provide transport and parking management services in a particular area.	Varies	X
Overflow Parking Plans	Establish plans to manage occasional peak parking demands.	Varies	
Address Spillover Problems	Use management, enforcement and pricing to address spillover problems.	Varies	
Parking Facility Design and Operation	Improve parking facility design and operations to help solve problems and support parking management.	Varies	

Source: Parking Management *Strategies, Evaluation and Planning* by Todd Litman, *Victoria Transport Policy Institute*

Transit ridership at each of the stations is important when selecting the development type and parking spaces required. Exhibit 6-2 provides a summary of the daily transit ridership for 2009 and 2030.

Ridership for 2009 was taken from DART's observed data for February 4, 2009. Ridership for 2030 was calculated utilizing the Dallas-Fort Worth Regional Travel Model (DFWRTM).

Exhibit 6-2: Summary of Current and Projected Daily DART Boardings

	Daily Boardings					
	Northbound		Southbound			
Station Name	2009 Blue Line	2030 Blue Line	2009 Blue Line	2030 Southport Line	2009 Total Boardings	2030 Total Boardings
Morrell Station	256	277	191	234	447	511
Illinois	808	1445	373	1,225	1,181	2,670
Kiest Station	854	581	462	505	1,316	1,086*
V.A. Medical Center Station	625	441	142	392	767	833
Ledbetter	2,526	1274	0 last stop	1,000	2,526	2,274*
Camp Wisdom/SH342	Does not exist	334	Does not exist	295	Does not exist	629
Totals	5,069	4352	1,168	3,651	6,237	8,003

***** Projected ridership may be lower than current numbers due to calibration utilizing low observed data from the DFWRTM.

It is also important to look at how the current ridership is impacting the demand for parking at the current park-and-ride lots so that any parking supply demand created by new development around the station can be considered. Park-and-ride lots are available at the Illinois, Kiest, and Ledbetter stations. The VA Medical Center Station does not have a park-and-ride lot. Parking utilization information was gathered from DART. The Illinois Station averages about 45 parked cars during the weekday out of the 354 spaces available. The Ledbetter Station has an average of about 155 cars parked during the weekday out of the 315 spaces available. There are no current official parking counts being performed at the Kiest Station because the utilization is not particularly notable. Additionally, the parking at Kiest is shared with the Lancaster Shopping Center and it is difficult to segregate DART customer vehicles from those of employees and shoppers. However, it has been noted by DART that on average 10-15 cars are parked at the station on a regular basis. There are a total of 465 spaces in the Kiest station park-and-ride. Overall, the park-and-ride utilization at the three locations is indicating that there is a greater amount of parking supply than current demand warrants (Exhibit 6-3).

Exhibit 6-3: DART Daily Boardings and Park-and-Ride Utilization

Station Name	2009 Total Daily Boardings	Current Parking Spaces Used Daily (approx.)	Current Parking Spaces Available	Utilization Percentage
Illinois	1,181	45	345	13%
Kiest Station	1,316	10-15	465	2.15% - 3.23%
V.A. Medical Center Station	767	0	0	0%
Ledbetter	2,526	155	315	49.21%

Recommendations

Illinois Station

The Illinois TOD area is recommended to be zoned as a Residential Transition (RTN) district for areas that have established neighborhoods. The Form Districts code requires that the number of off-street parking spaces for the RTN district be provided by Division 51A-4.200 of the Dallas Development Code (Exhibit 6-4).

Exhibit 6-4: Division 51A-4.200: Off-Street Parking Spaces

	Use and Definition	Parking Required
SEC. 51A-4.209. RESIDENTIAL USES	Duplex Definition: Two dwelling units located on a lot.	Two spaces per dwelling unit.
	Group residential facility Definition: An interim or permanent residential facility that provides room and board to a group of persons who are not a "family".	0.25 spaces per bed, plus one space per 200 square feet of office area; a minimum of four spaces is required.
	Multi-family Definitions: Three or more dwelling units located on a lot.	One space for each 500 square feet of dwelling unit floor area within the building site.
	Residential Hotel Definition: A facility that receives more than 50 percent of its rental income from occupancies of 30 consecutive days or more and contains other amenities, refer to the Code.	0.5 spaces per guest room.
	Retirement housing Definition: A residential facility principally designed for persons 55 years of age or older. This use does not include "convalescent and nursing homes, hospice care, and related institutions" use.	0.7 spaces per dwelling unit or suite, plus one space per 300 square feet of floor area not in a dwelling unit or suite.
	Single family Definition: One dwelling unit located on a lot.	One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts.

SEC. 51A-4.210 RETAIL AND PERSONAL SERVICE USES	Animal shelter or clinic Definition: A facility for the diagnosis, treatment, hospitalization, or harboring of animals including, but not limited to dogs, cats, birds, and horses.	One space per 300 square feet of floor area.
	Alcoholic beverage establishments Definition: A bar, lounge or tavern, private club bar	One space per 100 square feet of floor area. Or one space per 500 square feet of floor area used for the manufacture of alcoholic beverages as an accessory use to the bar, lounge, or tavern use.
	Business school Definition: A facility offering instruction and training in a service or the arts such as secretarial, barber, commercial artist, computer software, and similar training.	One space per 25 square feet of classroom.
	Commercial amusement (inside) Definition: An amusement center, billiard hall, children's amusement center, class E dance hall, commercial amusement (inside), and dance hall.	Bingo parlor: one space per 50 square feet of floor area. Bowling alley: six spaces per lane. Children's amusement center: one space per 200 square feet of floor area. Dance hall: one space per 25 square feet of dance floor and one space per 100 square feet of floor area for the remainder of the use. Motor track: one space per 1000 square feet of restricted track area and one space per additional 200 square feet of floor area. Skating rink: one space per 200 square feet of floor area.
	Dry cleaning or laundry store Definition: A facility for the cleaning or laundering of garments, principally for individuals.	One space per 200 square feet of floor area.
	General merchandise or food store 3,500 square feet or less. Definition: A retail store with a floor area of 3,500 square feet or less for the sale of general merchandise or food.	One space per 200 square feet of floor area.
SEC. 51A-4.210 RETAIL AND PERSONAL SERVICE USES of the Dallas Development Code Use Regulations	Liquor store Definition: An establishment principally for the retail sale of alcoholic beverages for off-premise consumption, as defined in the Texas Alcoholic Beverage Code.	One space per 200 square feet of floor area.
	Nursery, garden shop, or plant sales A facility for the growing, display, or sale of plant stock, seeds, or other horticultural items.	One space per 500 square feet of floor area, plus one space per 2,000 square feet of outside sales and display area.
	Outside sales Definition: A site for the outside sale of general merchandise or food. This use includes, but is not limited to, outdoor flea markets.	One space per 200 square feet of sales area.
	Pawn shop Definition: A facility for loaning money on the security of personal property and the	One space per 200 square feet of floor area.

	sale of unclaimed property.	
	Personal service use Definition: A facility for the sale of personal services. Typical personal service uses include a barber/beauty shop, shoe repair, a tailor, an instructional arts studio, a photography studio, a laundry or cleaning pickup and receiving station, a handcrafted art work studio, safe deposit boxes, a travel bureau, and a custom printing or duplicating shop.	One space per 200 square feet of floor area.
	Restaurant without drive-in or drive-through service. Definition: An establishment principally for the sale and consumption of food on the premises. (This use does not include a restaurant with drive-in or drive-through service.)	As a main use: except as otherwise provided, one space per 100 square feet of floor area. As a limited or accessory use: except as otherwise provided, one space per 200 square feet of floor area. One space per 500 square feet of floor area used for the manufacture of alcoholic beverages as an accessory use to the restaurant without drive-in or drive-through service use.
	Temporary retail use Definition: A temporary facility for the retail sale of seasonal products, including food, Christmas trees, and live plants.	One space per 500 square feet of site area.
	Theater Definition: A facility for showing motion pictures or staging theatrical performances to an audience inside an enclosed structure.	One space per 28 square feet of seating area.
SEC. 51A-4.212 UTILITY AND PUBLIC SERVICE USES	Police or fire station Definition: A facility operated by the city as a police or fire station.	Police station: One space per 150 square feet of floor area. Fire station: Five spaces plus one additional space per bed.
	Post office Definition: A government facility for the transmission, sorting, and local distribution of mail.	One space per 200 square feet of floor area.

It is recommended that parking for the RTN district be changed from *required* to *maximum* at least within the one-quarter mile buffer of the station and preferably up to the one-half mile buffer of the station for the RTN district. The Form Districts ordinance allows for parking reductions in locations within one-half mile of a rail transit station. However, parking reductions are not permitted in the RTN district. It is strongly recommended that a parking study be conducted to include national TOD parking case studies and

assessing how additional development will impact the parking supply and demand performance for the area. It is also recommended that the City work with DART for the potential use of the existing park-and-ride spaces as shared parking for new developments.

Unbundling parking is also recommended to provide affordable housing rates in the area. This will allow for residents to pay separately for housing and parking. Not only could the cost be lower for housing, residents would only pay for the number of parking spaces they need. This can also act as an incentive for residents to not own a car and rely more on the current transit system.

Current commercial and retail zoning is recommended to be rezoned to the Walkable Urban Mixed Use (WMU) district with a low intensity (WMU-3, WMU-5). Exhibit 6-5 contains a modified list from the Form District ordinance of the parking required per use for WMU and Walkable Urban Residential (WR) Districts. The list was modified to reflect uses compatible with TOD. Non-compatible uses such as self-service storage were removed.

According to the Form District ordinance, the Rail Transit Station Access reduction can apply to the WMU-3, WMU-5 district. The following is a list of the possible reductions:

1. A parking reduction of two percent for properties located within 1,321 to 2,640 feet (.25 to .5 miles)
2. A parking reduction of 15 percent for properties located within 601 to 1,320 feet (.11 to .25 miles)
3. A parking reduction of 25 percent for properties located within 600 feet (.11 miles)

It is recommended that parking standards for the WMU district either follow the reductions listed above or change the parking guidelines from “number of spaces *required*” to “number of *maximum* spaces required.”

Exhibit 6-5: Required Parking in WMU and WR Districts

	Use Category	Number of Spaces Required
Residential	Household living	1.50 per single-family living unit 1.15 per one-bedroom or smaller multi-family living unit 1.65 per two-bedroom multi-family living unit 2.00 per three-bedroom or larger multi-family living unit 0.70 per retirement housing unit
	Group living	0.25 spaces per bed PLUS 1 per 200 sf office, min 4 spaces
Civic	Community service: general	1 per 200 sf
	Community service: museum, library	1 per 200 sf
	Day care	1 per 500 sf
	Educational	1.50 spaces per elementary classroom 3.50 spaces per junior high or middle classroom 9.50 spaces per senior high classroom 1 per 4 seats in any other classroom
	Government service	1 per 200 sf
	Park or Open space	none
	Social service	See Group Living
	Transit Station	n/a
	Utilities	Building official to apply similar use
Place of Worship	Place of Worship	1.00 per 4 fixed seats or per 18" length of bench OR 1 per 28.00 sf floor area without seating
Office	Medical	1 per 222 sf
	Office, except: Art studio, gallery Financial services, bank Call center	1 per 333 sf 1 per 500 sf 1 per 222 sf 1 per 167 sf
Retail	Restaurants, except: Bar, private club	1 per 100 sf 1 per 83 sf
	Retail Sales	1 per 250 sf
Service and Entertainment	Commercial amusement (inside) Dance hall	1 per 200 sf 1 per 25 sf
	Indoor recreation Health club or spa Movie theater Performing arts theater	1 per 150 sf 1 per 143 sf 0.27 per seat 0.40 per seat
	Personal service	1 per 250 sf
	Animal care	1 per 250 sf
Commerce	Overnight lodging	1.25 per room PLUS 1 per 200 sf of meeting room

sf = square feet

Kiest

The Kiest TOD area is recommended to have a WMU-8 district. Parking standards for the WMU-8 are not different than those listed in Exhibit 6-5. More compact development is allowed and Manor Houses are not allowed in WMU-8 in comparison to WMU-3, WMU-5. It should be emphasized that parking standards should take into account the availability of the light rail transit and therefore parking at least within the one-quarter mile buffer of the station should have language that includes *maximum* space allotted as opposed to *required* space allotted.

VA Medical Center

The VA Medical Center TOD area is recommended to have a WMU-8 district. Parking standards for the WMU-8 are not different than those listed in Exhibit 6-5. The City should consider working with the major employers in the area to implement travel demand management strategies (i.e. vanpool, carpool, walk, bike, and telecommute) for their employee commutes. Additionally, the City could work with developers to encourage car-sharing programs in exchange for a reduction in required parking spaces for new developments. Reducing the parking requirements at sites can provide for additional utilization of the land around the station for development.

Ledbetter

The Ledbetter TOD area is recommended to have a RTN district and a WMU-3, WMU-5 district. Parking for the RTN district should be changed from *required* to *maximum* of two parking spaces per living unit at least within the one-quarter mile buffer of the station and preferably up to the one-half mile buffer of the station for the RTN district. Parking for the recommended open space recreational area could utilize the existing Ledbetter park-and-ride. Exhibit 6-5 contains a modified list from the Form District ordinance of the parking required per use for WMU-3, WMU-5 District. Additional parking reductions beyond those listed on Exhibit 6-5 should be considered for new developments in the WMU-3, WMU-5 district because the site is recommended to take advantage of the open space.

It is recommended that residential parking be unbundled from the rent/lease amount. Residents would be required to pay separately for housing and parking. This can cause housing rates to be more affordable

as residents will only pay for the number of parking spaces they need. This can also act as an incentive for residents to not own a car and rely more on the current transit system.

[vi] Weinberger Ph.D., R., Seaman, M., Johnson MCP, C., Kaehny, J. (2008). Guaranteed Parking – Guaranteed Driving: Comparing Jackson Heights, Queens and Park Slope, Brooklyn shows that a guaranteed parking spot at home leads to more driving to work. Transportation Alternatives.

7. CORRIDOR CONNECTIONS

Each station's TOD area has the potential to provide a benefit to their individual community and to the corridor as a whole. The Illinois TOD area can increase the housing options from single-family residential to townhomes and manor houses, a development type with two to five attached dwelling units consolidated in a single structure,[vii] which will allow for people living within walking distance of a rail station. It is encouraged that the Crest Shopping Center, which is located between the Illinois and Kiest stations, be redeveloped into a higher density mixed-use center through the TOD TIF District Plan. The Kiest TOD area can increase the commercial and retail options in addition to providing multi-family housing options. The VA Medical Center TOD area can increase both commercial and residential development it has to offer for people who currently work at one of the existing major employers and at the same time make it more inviting for additional employers to locate to the area. The Ledbetter TOD area contains open space that could be better used as a recreational destination.

If the complete Vision were realized, residents living within walking distance of one of the Lancaster Corridor transit stations should be able to enjoy an array of services from housing, employment, shopping, and recreation with very little or no use of a vehicle required. The Illinois TOD area would serve as the housing hub. The Kiest TOD area would provide commercial and retail services. The VA Medical Center TOD area could provide more housing and employment activity. And the Ledbetter TOD area would provide for open space and recreation opportunities. The potential benefits that the Lancaster Corridor area has to offer could attract more people, housing and jobs to settle near the transit stops.

Exhibit 7-1 provides a summary of the bicycle and pedestrian recommendations for all four stations.

Exhibit 7-1: Summary of Bicycle and Pedestrian Recommendations

Recommendations	Illinois Station	Kiest Station	VA Medical Center Station	Ledbetter Station	Cost*
Lane and Path Treatments					
Shared Lane Marking	■	■	■	■	$15,000 per mile
Dedicated Bicycle Lane	■	■	■	■	$20,000 per mile
Dedicated Bicycle Route	■	■	■	■	$1,600+ per mile
12’ wide Off-street Multi-use Trail	■	■	Where on-street bicycle treatments are not feasible	■	$800,000 per mile (12’ path)
Intersection Treatments					
Mid-block Crossing	as warranted	as warranted	as warranted	as warranted	$4,000 to $30,000, depending on the design and site conditions
Crosswalks	■	■	■	■	$100 for a regular striped crosswalk, $300 for a zebra crosswalk
Pedestrian Traffic Signals	■	■	■	■	$20,000 to $140,000/intersection, depending on signal equipment
Pedestrian Scramble	intersections with 1,200 + pedestrian crossings/day	intersections with 1,200 + pedestrian crossings/day	intersections with 1,200 + pedestrian crossings/day	intersections with 1,200 + pedestrian crossings/day	There is no extra cost when pedestrian traffic signals are present
Driveway Improvements	■	■	■	■	Varies depending on the scope of work to be done
Signage Treatments					
Wayfinding Signage	■	■	■	■	$50 to $250/sign plus installation costs
Traffic Calming Treatments					
Roadway Narrowing (Lane widths reduced to 10 to 11 ft.)	on roads with high volumes of traffic	on roads with high volumes of traffic	on roads with high volumes of traffic	on roads with high volumes of traffic	$5,000 to $15,000/mile, depending on the number of old lanes to be removed
Reducing Number of Lanes	on roads with high volumes of traffic	on roads with high volumes of traffic	on roads with high volumes of traffic	on roads with high volumes of traffic	$5,000 to $35,000/mile, depending on the number of lane lines that need to be repainted

Recommendations	Illinois Station	Kiest Station	VA Medical Center Station	Ledbetter Station	Cost*
Traffic Calming Treatments					
Bulb-Out	only used where there is a parking lane	only used where there is a parking lane	only used where there is a parking lane	only used where there is a parking lane	$2,000 to $20,000/corner, depending on design and site conditions
Reduced Curb Radii	■	■	■	■	$5,000 to $30,000 per corner, depending on site conditions (e.g., drainage and utilities may need to be relocated)
On-Street Parking	■	■	■	■	$1,000 to $10,000/mile, depending on the number of lane lines that need to be repainted; optional features: $30 to $150/sign, $300/parking meter installation
Raised Median	as warranted	as warranted	as warranted	as warranted	$15,000 to $30,000/100 ft., depending on the design and site conditions
Pedestrian and Bicycle Amenities					
Open Space	■	■	■	■	$30,000 to several million dollars, depending on the design, site conditions, and materials used
Street Furniture	■	■	■	■	Varies depending on the extent of the treatment and the quality of the materials used
Landscaping	■	■	■	■	Varies depending on the type and the amount of planting material used
Widened Sidewalks (at least 7 ft. wide with 4 to 6 ft buffer)	■	■	■	■	$15/linear foot for curbing, $11/square foot for walkways (new construction); $100,000 or more/mile (retrofit)
ADA Approved Curb Ramps	■	■	■	■	ADA approved curb ramps: $800 to $1,500/curb ramp (new or retrofitted)
Pedestrian Scaled Lighting	■	■	■	■	Varies depending on fixture type and service agreement with local utility company
Bicycle Parking	■	■	■	■	$150 to $300 each (parks two bikes), including installation costs
Bicycle Lockers	■	■	■	■	$1,000 to $4,000 each (parks two bikes), including installation costs

***All costs listed are estimates according to the U.S. Department of Transportation Federal Highway Administration (FHWA).

[vii] City of Dallas, Chapter 51A Article XIII: Form Districts

8. CONCLUSION

According to NCTCOG's 2035 Demographic Forecast, the City of Dallas is projected to increase by about 40 percent from the 2010 population of 1,197,816 to 1,683,361. The Lancaster Corridor is projected to increase in population by about 21 percent from the 2010 population of 9,544 to 11,507. The Lancaster Corridor station areas of the DART Blue Line have not had the level of economic activity as other stations in the northern section of the Blue Line, although some great projects are underway such as the addition of multi-family housing in the VA Medical Center Station area. The City has a great opportunity to accommodate and attract expected growth to areas that surround the Lancaster Corridor. This will benefit the City in many ways: First, redevelopment of the Lancaster Corridor would improve the area's economy which would provide needed development and services to neighborhoods in South Dallas; Second, it would help prevent development from sprawling to areas away from the City center and; Third, it would take advantage of the existing infrastructure in place, especially the light rail system, to develop to a highest and best use.

Redevelopment in the Lancaster Corridor has its many benefits but not without its barriers too. The station areas have established neighborhoods which need to be considered before increasing density. Existing infrastructure (i.e. buildings, sidewalks, landscaping) is not in place to make for walkable areas. Current uses such as automotive shops and services are incompatible with light rail stations. Commercial and retail developments are not always cost effective to purchase and redevelop; however, there are various sites in the station areas that could take advantage of redevelopment. The area also suffers from an oversupply of parking and misplaced parking, all of which limits creating a walkable environment. Overall, the Lancaster Corridor does contain barriers to redevelopment which can be overcome if the right developers are chosen and partnerships are formed.

The Lancaster Corridor station areas have a lot of potential to becoming thriving TOD destinations. A mix of uses to accommodate the current and future demographics can be achieved and should be evaluated with a market analysis of the corridor. The process to redevelop the stations should start with public

communication. Literature cautions planners regarding TOD projects that cannot be fully realized or have terminated due to public opposition. Educating the general public in the specific station area is beneficial in several ways. First, the City could provide evidence for misperceived notions of the impacts of compact development. Second, current community members are the best source to get a true sense of the needed amenities whether that may be infrastructure or development needs for the neighborhoods. A partnership with the general public can help make the Lancaster Corridor station areas into successful transit-oriented developments.

APPENDIX A-1
NCTCOG TOD Audit
Illinois Station

1. Is the zoning for the area mixed use? What is the density?
   - Per City of Dallas Chart of Zoning Rules no residential uses allowed in nonresidential districts except for mixed use districts
   - Current zoning within one-half mile radius of station
     - Residential R-7.5 (A)
       - Density: 1 dwelling unit 7,500 sq. ft.
     - Townhouse Residential TH-3 (A)
       - Density: 12 dwelling unit acre
     - Multi-Family Residential MF-2(A)
       - Density: Min lot 1,000 sq. ft., 800 sq. ft. – E, 1,000 – 1 BR, 1,200 – 2 BR, +150 sq. ft. each add BR
     - Community Retail CR
       - Density: No maximum dwelling unit density
     - Commercial Service CS
       - Density: Not applicable
     - Neighborhood Office NO(A)
       - Density: No maximum dwelling unit density
     - Limited Office LO-1
       - Density: No maximum dwelling unit density
     - Planned Development (PD) 389
       - No mix use listed

2. Are the household population and total households (based on our forecast) at a sufficient density to support transit?
   - The base data for this assessment includes the following 2010 census blockgroups: 55.003 (181.80 total acres)
   - The 2035 Forecast includes the following TSZs: 8222 and 8220 (181.37 acres)
   - **In 2010,** the household population around Illinois Station was 1,096 within the 181.80 acres around the station. 1096/181.80 = **6.02 persons per acre**
   - **By 2035,** NCTCOG forecasts the population will be 1,138 within the 181.37 acres around the station. 1138/181.37 = **6.27 persons per acre**
   - **In 2010,** there were 398 total households within the 181.80 acres around the station (includes Blockgroup 55.003): 398/181.80 = **2.18 households per acre**
   - **By 2035,** NCTCOG forecasts there will be 405 total households in the 181.37 acres around the station. 405/181.37 = **2.23 persons per acre**
   - Reconnecting America, a national non-profit organization that works to integrate transportation systems and the communities they serve, documented a wide range of dwelling units per acre (dua) that are sufficient to support TOD. Some existing land use patterns that have incorporated commuter rail have a range of 6.76 dua in Charlotte, NC to 39.13 dua in Portland, OR
   - Density restrictions in residential zoned areas (7,500 sq. ft. per dwelling unit) allow only 5.8 dua (43,560 sq. ft./7,500 sq. ft.)

3. Does the zoning for the area allow auto-dependent uses by right?
   - The following auto-oriented developments are within one-quarter mile of the station:
     - Single-family residence
     - E. Illinois and Delany a small auto dealership
     - E. Illinois and S. Corinth McDonalds (drive-thru), 7 Eleven with a gas station, Muffler Shop
   - Community Retail CR
     - Personal Service and Office Uses - compatible with residential communities

- All other non-residential zoning stated: Development Impact Review (DIR) is required if estimated trips generated is greater than 6,000 trips per day and 500 trips per acre per day

4. Does the area have planned hike and bike trail connections, adequate sidewalks and other pedestrian amenities?
   The following trails are within one-quarter and one-half mile of the station:
   - Regional Veloweb: planned bike trail along the Texas Utilities Electric Company ROW, named Red Bird Way
   - Regional Veloweb: existing on-street bike trail known as Route 160. Trail runs horizontally throughout one-half mile of the station
   - Does the City of Dallas have an adequate sidewalk rule?
   - Sidewalk inventory http://www.dallascityhall.com/streets/links.html

5. Is there a variety of land uses in the immediate area, or is the area mixed use?
   2005 Land Use
   - Single-Family A1
   - Multi-Family B1
   - Duplex B2
   - Vacant – Residential C1
   - Vacant – Commercial C2
   - Commercial F1
   - Electric Companies J3
   - Vacant Residential Inventory O1

6. Is the planned street grid density at least 20 centerline miles over total square miles, or at least 10 miles of streets for an area of .5 square miles?
   - No, there are 5.48 centerline miles of street and an area of .19628 square miles.

7. Are area/height/bulk restrictions adequate?

DISTRICT	SETBACKS Front Side/Rear	Density	Height	Lot Coverage
Residential R-7.5 (A)	25' / 5'	1 Dwelling Unit (DU) 7,500 sq. ft.	30'	45%
Townhouse Residential TH-3 (A)	0' / 0'	12 DU Acre	36'	60%
Multi-family Residential MF-2(A)	15' / 15'	Min lot 1,000 sq. ft. 800 sq. ft. - E 1,000 - 1 BR 1,200 - 2 BR + 150 sq. ft. each add BR	36'	60%
Community Retail CR	15' / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office	54' 4 stories	60%
Commercial Service CS	15' 0' on minor / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office/lodging/ retail combined	45' 3 stories	80%
Neighborhood Office NO(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio (FAR)	30' 2 stories	50%
Limited Office LO-1	15' / 20' adjacent to residential OTHER: No Min.	1.0 FAR	70' 5 stories	80%

8. Is the surrounding area part of a TIF, PID, or BID?
   - Included in the TOD Tax Increment Financing (TIF) District. Approved by Dallas City Council on December 10, 2008
   - Area part of an Enterprise Zone
   - http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/enterprise_zone_map.pdf

9. How much land is zoned Multi-Family (MF)? Is there a shortage of MF in the area based on age/distribution/income?
   - Within one-quarter mile radius of station very little MF zoning, 8849.732457 sq. ft.
   - Within one-half mile radius of station 851855.862459 sq. ft. MF zoning
     - one-half mile radius of station = 0.79 sq. mi.
     - 851855.862459 sq. ft. = 0.03056 sq. mi.
     - 0.03056 sq. mi. / 0.79 sq. mi. * 100 is about 3.87 percent MF zoning within a one-half mile radius of the station

   Data was based on the zoning shapefile received from the City of Dallas.

10. What percent of land is available for development in the station area?
    Information gathered for the half-mile buffer around the Illinois Station from 2009 Dallas Central Appraisal District data.

Land Use Category	No. of Parcels	Acres	Percent of Total Acres
Commercial Improvements	93	180.11	33.23%
Commercial - Vacant	86	23.45	4.33%
Utilities	15	40.82	7.53%
Multi-Family Residences - Apartments	2	0.80	0.15%
Multi-Family Residences - Duplexes	40	8.06	1.49%
Rail Road Corridor	5	17.29	3.19%
Single-Family Residences	1179	226.96	41.88%
Single-Family Residences - Vacant	220	44.44	8.20%
Grand Total	1641	542	100.00%

Total commercial and single-family residences vacant acres 67.89 or 12.53 percent

11. What are the parking requirements in the zoning?
    Below is an example of parking requirements at the following zones:
    - Residential R-7.5 (A)
      - Multi-family: One space for each 500 square feet of dwelling unit floor area within the building site.
      - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Townhouse Residential TH-3 (A)
      - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Multi-family Residential MF-2(A)
      - Duplex: Two spaces per dwelling unit

- Group residential facility: 0.25 spaces per bed, plus one space per 200 square feet of office area; a minimum of four spaces is required
- Residential hotel: 0.5 spaces per guest room
- Retirement housing: 0.7 spaces per dwelling unit or suite, plus one space per 300 square feet of floor area not in a dwelling unit or suite
- Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts

- Community Retail CR
  - Required off-street parking: One space per 300 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
- Commercial Service CS
  - One space per 500 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    1. Church: One space for each four fixed seats in the sanctuary or auditorium. If fixed benches or pews are provided, each 18 inches of length of the fixed bench or pew constitutes one fixed seat for purposes of this paragraph. If portions of seating areas in the sanctuary or auditorium are not equipped with fixed seats, benches, or pews, the parking requirement for those portions is one space for each 28 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    2. College, University, or Seminary: One space per 25 square feet of classroom. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    3. Community Service Center: One space per 200 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    4. Convalescent and nursing homes, hospice care, and related institutions: 0.3 spaces per bed
    5. Convent or monastery: One space for each three residents; a minimum of two spaces is required
    6. Foster home: Two spaces
    7. Hospital: One space for each patient bed
    8. Library, art gallery, or museum: One space per 500 square feet of floor area
    9. Public or private school: One and one-half spaces for each kindergarten/elementary school classroom; Three and one-half spaces for each junior high/middle school classroom; and Nine and one-half spaces for each senior high school classroom
- Neighborhood Office NO(A)
  - Office Uses: One space per 333 square feet of floor area
- Limited Office LO-1
  - Office Uses: One space per 333 square feet of floor area
- http://www.dallascityhall.com/development_services/development_code.html
- http://www.amlegal.com/nxt/gateway.dll?f=id$id=The%20Dallas%20City%20Code%3Ar%3A6ce0$cid=texas$t=document-frame.htm$an=JD_51A-4.301$3.0#JD_51A-4.301

12. Is a public service facility planned to be sited near the transit facility to demonstrate strength of public investment in the area?
    - Within one-quarter mile radius
      - We Care Adult Day Center 3200 S. Lancaster Rd. (not public)

- Within one-half mile radius
    - Dallas Fire Station 23 1660 S. Corinth St.
    - Willie Mae Green 1823 Danube Dr. (not public)

13. What are the regulatory and permitting procedures for a TOD? Can the time it takes to get permits be reduced?
    - DART TOD Summit March 2, 2007 Theresa O'Donnell presentation:
        - MU-3 zoning regulations cannot guarantee that a mix of uses and a pedestrian environment will be built.
        - Currently mix use such as development that contains retail and a high density of residential units require Planned Development Overlay.
    - Transit-Oriented Development (TOD) Program: Minimum eligibility for consideration of city incentives through the Public/Private Partnership Program will require a cumulative investment of $300 million for new mixed-use, commercial, retail, and/or residential development in proximity of at least two DART light-rail transit (with one or both in Southern Dallas) stations. TOD projects are eligible for consideration for the full complement of necessary and appropriate incentives available through this program including, but not limited to, tax increment financing, tax abatement, grants and loans, infrastructure cost participation. Residential developments seeking incentives will be required to have 20 percent affordable housing set aside in Northern Dallas and mixed-income housing in Southern Dallas. Further, projects must meet the City's established Good Faith Effort guidelines for M/WBE participation.
    - http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/guidelines.pdf
    - Developers may apply for form-based zoning in station areas under Chapter 51A, Article XIII: Form Districts, of the Dallas Zoning Ordinance. http://www.forwarddallas.org/files/up/FormDistrictsOrdinance_Final.pdf

14. Does the city offer density bonuses?
    - SEC. 51A-4.125. MIXED USE DISTRICTS (MUP): When a development qualifies as an MUP, it earns a higher maximum dwelling unit density and floor area ratio (FAR) and, in some instances, a greater maximum structure height. Additional FAR bonuses are incrementally awarded to encourage the inclusion of "residential" as part of an MUP. The exact increments of increase vary depending on the actual use categories mixed and the district that the MUP is in. For more information regarding the exact increments of increase, consult the yard, lot, and space regulations in this section governing the particular district of interest.

Resources:
Dallas Development Guide
http://www.dallascityhall.com/development_services/development_code.html

Development Services
http://www.dallascityhall.com/development_services/zoning_maps.html

Chart Zoning
http://www.dallascityhall.com/pdf/planning/zonechart.pdf

Parking
http://www.dallascityhall.com/zoning/html/transportation_-_private_stree.html
Use Regulations for Off-Street Parking Requirements

DART – Economic Development & Planning
http://www.dart.org/about/economicdevelopment.asp

DART – TOD
http://www.dart.org/about/economicimpact.asp

APPENDIX A-2
NCTCOG TOD Audit
Kiest Station

1. Is the zoning for the area mixed use? What is the density?
   - Per City of Dallas Chart of Zoning Rules no residential uses allowed in nonresidential districts except for mixed use districts
   - Current zoning within one-half mile radius of station
     - Residential R-7.5 (A)
       - Density: 1 dwelling unit 7,500 sq. ft.
     - Townhouse Residential TH-3 (A)
       - Density: 12 dwelling unit acre
     - Multi-Family Residential MF-2(A)
       - Density: Min lot 1,000 sq. ft., 800 sq. ft. – E, 1,000 – 1 BR, 1,200 – 2 BR, +150 sq. ft. each add BR
     - Community Retail CR
       - Density: No maximum dwelling unit density
     - Commercial Service CS
       - Density: Not applicable
     - Neighborhood Office NO(A)
       - Density: No maximum dwelling unit density
     - Neighborhood Service NS(A)
       - Density: 0.5 FAR
     - Parking P(A)
     - Planned Development (PD) 426 and 235
       - No mix use listed

2. Are the household population and total households (based on our forecast) at a sufficient density to support transit?
   - The base data for this assessment includes the following 2010 census blockgroups: 57.002, 57.003, 88.023 (395.83 total acres)
   - The 2035 Forecast includes the following TSZs: 8326, 40272, 40274 (372.13 total acres)
   - **In 2010,** the household population was 3,223 within the 395.83 acres around Kiest station 3223/395.83 = **8.14 persons per acre**
   - **By 2035,** NCTCOG projects the household population for 372.13 acres around the station will be 3,112. 3112**/**372.13 = **8.36 persons per acre**
   - **In 2010,** there were 1,118 total households within the 395.83 acres around the station 1118/395.83 = **2.82 households per acre**
   - **By 2035,** NCTCOG projects there will be 1,107 total households in the 372.13 acres around the station (includes TSZ 8366, 8372, 8373, and 8375): 1107/372.13 = **2.97 households per acre**
   - Density restrictions in residential zoned areas (7,500 sq. ft. per dwelling unit) allow only 5.8 dua (43,560 sq. ft./7,500 sq. ft.)

3. Does the zoning for the area allow auto-dependent uses by right?
   - The following auto oriented developments are within one-quarter mile of the station:
     - Wendy's Restaurant – Drive thru only
     - Drive thru fast food eateries
     - Strip shopping centers
     - Drive thru pharmacy
     - Single-family housing
     - 7 Eleven
   - There are commercial services currently needed in the area such as dry cleaners, beauty shops, grocery markets, small restaurants, a shoe store, and a bank. These are all single use buildings that don't efficiently utilize the area near the station. Adding density would

allow for more services to be available to the community within a walking distance of the station.
- All other non-residential zoning stated: Development Impact Review (DIR) is required if the estimated trips generated is greater than 6,000 trips per day and 500 trips per acre per day

4. Does the area have planned hike and bike trail connections, adequate sidewalks and other pedestrian amenities?
   The following trails are within one-quarter and one-half mile of the station:
   - Regional Veloweb: existing on-street bike trail. Trail name Route 140 under the Greater Dallas Bike Plan

   Following trail within one-half mile of the station:
   - Regional Veloweb: existing on-street bike trail. Trail name Route 150 under the Greater Dallas Bike Plan
   - Regional Veloweb: planned bike trail along the Texas Utilities Electric Company ROW, named Red Bird Way
   - Does the City of Dallas have an adequate sidewalk rule?
   - Sidewalk inventory http://www.dallascityhall.com/streets/links.html

5. Is there a variety of land uses in the immediate area, or is the area mixed-use?
   2005 Land Use
   - Single-Family A1
   - Vacant – Residential C1
   - Vacant – Commercial C2
   - Commercial F1
   - Electric Companies J3
   - Duplex B2

6. Is the planned street grid density at least 20 centerline miles over total square miles, or at least 10 miles of streets for an area of .5 square miles?
   - No, there are 5.54 centerline miles of street and an area of .19628 square miles.

7. Are area/height/bulk restrictions adequate?

DISTRICT	SETBACKS Front Side/Rear	Density	Height	Lot Coverage
Residential R-7.5 (A)	25' / 5'	1 Dwelling Unit (DU) 7,500 sq. ft.	30'	45%
Townhouse Residential TH-3 (A)	0' / 0'	12 DU Acre	36'	60%
Multi-family Residential MF-2(A)	15' / 15'	Min lot 1,000 sq. ft. 800 sq. ft. - E 1,000 - 1 BR 1,200 - 2 BR + 150 sq. ft. each add BR	36'	60%
Community Retail CR	15' / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office	54' 4 stories	60%
Commercial Service CS	15' 0' on minor / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office/lodging/ retail combined	45' 3 stories	80%
Neighborhood Service NS(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio	30' 2 stories	40%
Neighborhood Office NO(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio	30' 2 stories	50%

8. Is the surrounding area part of a TIF, PID, or BID?
    - Included in the TOD Tax Increment Financing (TIF) District. Approved by Dallas City Council on December 10, 2008.
    - Area part of an Enterprise Zone http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/enterprise_zone_map.pdf

9. How much land is zoned Multi-Family (MF)? Is there a shortage of MF in the area based on age/distribution/income?
    - Within one-quarter mile radius of station no MF zoning
    - Within one-half mile radius of station (349415.48+155428.26) 504843.74 sq. ft. MF zoning
        - one-half mile radius of station = 0.79 sq. mi.
        - 504843.74 sq. ft. = 0.018109 sq. mi.
        - 0.018109 sq. mi. / 0.79 sq. mi. * 100 is about 2.29 percent MF zoning within a one-half mile radius of the station

10. What percent of land is available for development in the station area?
    Information gathered for a half-mile buffer around the Kiest Station from 2009 Dallas Central Appraisal District data.

Land Use Category	No. of Parcels	Acres	Percent of Total Acres
Commercial Improvements	95	88.12	20.79%
Commercial - Vacant	38	11.55	2.72%
Utilities	6	15.80	3.73%
Multi-Family Residences - Apartments	2	7.42	1.75%
Multi-Family Residences - Duplexes	51	8.99	2.12%
Single-Family Residences	1344	262.49	61.93%
Single-Family Residences - Vacant	161	29.42	6.94%
Unassigned	1	0.08	0.02%
Grand Total	1698	424	100.00%

Total commercial and single-family residences vacant acres 40.97 or 9.67 percent

11. What are the parking requirements in the zoning?
Below is an example of parking requirements at the following zones:
    - Residential R-7.5 (A)
        - Multi-family: One space for each 500 square feet of dwelling unit floor area within the building site
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Townhouse Residential TH-3 (A)
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Multi-Family Residential MF-2(A)
        - Duplex: Two spaces per dwelling unit
        - Group residential facility: 0.25 spaces per bed, plus one space per 200 square feet of office area; a minimum of four spaces is required
        - Residential hotel: 0.5 spaces per guest room
        - Retirement housing: 0.7 spaces per dwelling unit or suite, plus one space per 300 square feet of floor area not in a dwelling unit or suite
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Community Retail CR
        - Required off-street parking: One space per 300 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    - Commercial Service CS
        - One space per 500 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
            1. Church: One space for each four fixed seats in the sanctuary or auditorium. If fixed benches or pews are provided, each 18 inches of length of the fixed bench or pew constitutes one fixed seat for purposes of this paragraph. If portions of seating areas in the sanctuary or auditorium are not equipped with fixed seats, benches, or pews, the parking requirement for those portions is one space for each 28 square feet of floor area. If more than ten off-street parking spaces are required

for this use, handicapped parking must be provided pursuant to Section 51A-4.305

2. College, university, or seminary: One space per 25 square feet of classroom. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
3. Community service center: One space per 200 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
4. Convalescent and nursing homes, hospice care, and related institutions: 0.3 spaces per bed
5. Convent or monastery: One space for each three residents; a minimum of two spaces is required
6. Foster home: Two spaces
7. Hospital: One space for each patient bed
8. Library, art gallery, or museum: One space per 500 square feet of floor area
9. Public or private school: One and one-half spaces for each kindergarten/elementary school classroom; Three and one-half spaces for each junior high/middle school classroom; and Nine and one-half spaces for each senior high school classroom.

- Neighborhood Office NO(A)
  - Office Uses: One space per 333 square feet of floor area.
- http://www.dallascityhall.com/development_services/development_code.html
- http://www.amlegal.com/nxt/gateway.dll?f=id$id=The%20Dallas%20City%20Code%3Ar%3A6ce0$cid=texas$t=document-frame.htm$an=JD_51A-4.301$3.0#JD_51A-4.301

12. Is a public service facility planned to be sited near the transit facility to demonstrate strength of public investment in the area?
    - Within one-quarter mile radius
      - Kipp Truth Academy 3200 S. Lancaster Rd.
    - Within one-half mile radius
      - Lancaster Kiest Public Library 3039 S. Lancaster Rd.
      - South Oak Cliff Post Office 1502 E. Kiest Blvd.
      - Johnnie's Manor 1310 Oakley Ave.
      - St. James Manor 3119 Easter Ave.
      - Bryan, John Neely Elementary 2001 Deer Path Dr.

13. What are the regulatory and permitting procedures for a TOD? Can the time it takes to get permits be reduced?
    - DART TOD Summit March 2, 2007 Theresa O'Donnell presentation:
      - MU-3 zoning regulations cannot guarantee that a mix of uses and a pedestrian environment will be built.
      - Currently mix use such as development that contains retail and a high density of residential units require Planned Development Overlay.
    - Transit-Oriented Development (TOD) Program: Minimum eligibility for consideration of city incentives through the Public/Private Partnership Program will require a cumulative investment of $300 million for new mixed-use, commercial, retail, and/or residential development in proximity of at least two DART light-rail transit (with one or both in Southern Dallas) stations. TOD projects are eligible for consideration for the full complement of necessary and appropriate incentives available through this program including, but not limited to, tax increment financing, tax abatement, grants and loans, infrastructure cost participation. Residential developments seeking incentives will be required to have 20 percent affordable housing set aside in Northern Dallas and mixed-

income housing in Southern Dallas. Further, projects must meet the City's established

Good Faith Effort guidelines for M/WBE participation. http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/guidelines.pdf

- Developers may apply for form-based zoning in station areas under Chapter 51A, Article XIII: Form Districts, of the Dallas Zoning Ordinance. http://www.forwarddallas.org/files/up/FormDistrictsOrdinance_Final.pdf

14. Does the city offer density bonuses?
    - SEC. 51A-4.125. MIXED USE DISTRICTS (MUP): When a development qualifies as an MUP, it earns a higher maximum dwelling unit density and floor area ratio (FAR) and, in some instances, a greater maximum structure height. Additional FAR bonuses are incrementally awarded to encourage the inclusion of "residential" as part of an MUP. The exact increments of increase vary depending on the actual use categories mixed and the district that the MUP is in. For more information regarding the exact increments of increase, consult the yard, lot, and space regulations in this section governing the particular district of interest.

Resources:
Dallas Development Guide
http://www.dallascityhall.com/development_services/development_code.html

Dallas City Code
http://www.amlegal.com/nxt/gateway.dll/Texas/dallas/volumei/preface?f=templates$fn=default.htm$3.0$vid=amlegal:dallas_tx

Development Services
http://www.dallascityhall.com/development_services/zoning_maps.html

Chart Zoning
http://www.dallascityhall.com/pdf/planning/zonechart.pdf

Parking
http://www.dallascityhall.com/zoning/html/transportation_-_private_stree.html
Use Regulations for Off-Street Parking Requirements

DART – Economic Development & Planning
http://www.dart.org/about/economicdevelopment.asp

DART – TOD
http://www.dart.org/about/economicimpact.asp

APPENDIX A-3
NCTCOG TOD Audit
Veterans Affairs (VA) Medical Center Station

1. Is the zoning for the area mixed use? What is the density?
   - Per City of Dallas Chart of Zoning Rules no residential uses allowed in nonresidential districts except for mixed use districts
   - Current zoning within one-half mile radius of station
     - Residential R-7.5 (A)
       - Density: 1 dwelling unit 7,500 sq. ft.
     - Townhouse Residential TH-3 (A)
       - Density: 12 dwelling unit acre
     - Multi-Family Residential MF-2(A)
       - Density: Min lot 1,000 sq. ft., 800 sq. ft. – E, 1,000 – 1 BR, 1,200 – 2 BR, +150 sq. ft. each add BR
     - Community Retail CR
       - Density: No maximum dwelling unit density
     - Neighborhood Office NO(A)
       - Density: No maximum dwelling unit density
     - Neighborhood Service NS(A)
       - Density: No maximum dwelling unit density
     - Parking P(A)
     - Planned Development (PD) 516
       - No mix use listed

2. Are the household population and total households (based on our forecast) at a sufficient density to support transit?
   - The base data for this assessment includes the following 2010 census blockgroups: 57.001, 87.043 (478.14 total acres)
   - The 2035 Forecast includes the following TSZs: 40679, 8422, and 8423 (474.41 total acres)
   - **In 2010,** the household population for the 478.14 acres around VA Medical Center Station was 2,199. 2199/478.14 = **4.59 persons per acre**
   - **By 2035,** NCTCOG forecasts the household population for the 474.41 acres around the station will be 2,639. 2639/474.41 = **5.56 persons per acre**
   - **In 2010,** there were 932 total households within the 478.14 acres around the station 932/478.14 = **1.94 households per acre**
   - **By 2035,** NCTCOG forecasts there will be 939 total households in the 474.41 acres around the station. 939/474.41 = **1.97 households per acre**
   - Density restrictions in residential zoned areas (7,500 sq. ft. per dwelling unit) allow only 5.8 dua (43,560 sq. ft./7,500 sq. ft.)

3. Does the zoning for the area allow auto-dependent uses by right?
   - The following auto-oriented developments are within one-quarter mile of the station:
     - Lancaster Tire Service
     - Van Auto Repair
     - Chase Bank with drive thru
     - Smith's Auto & Body Repair

4. Does the area have planned hike and bike trail connections, adequate sidewalks and other pedestrian amenities?
   The following trails are within one-quarter and one-half mile of the station:
   - Regional Veloweb: existing on-street bike trail. Trail name Route 120 under the Greater Dallas Bike Plan
   - Does the City of Dallas have an adequate sidewalk rule?
   - Sidewalk inventory http://www.dallascityhall.com/streets/links.html

5. Is there a variety of land uses in the immediate area, or is the area mixed-use?
   2005 Land Use
   - Single-Family A1
   - Condominiums A5
   - Vacant – Residential C1
   - Vacant – Commercial C2
   - Commercial F1
   - Electric Companies J3
   - Duplex B2

6. Is the planned street grid density at least 20 centerline miles over total square miles, or at least 10 miles of streets for an area of .5 square miles?
   - No, there are 2.66 centerline miles of street and an area of .19628 square miles.

7. Are area/height/bulk restrictions adequate?

DISTRICT	SETBACKS Front Side/Rear	Density	Height	Lot Coverage
Residential R-7.5 (A)	25' / 5'	1 Dwelling Unit 7,500 sq. ft.	30'	45%
Townhouse Residential TH-3 (A)	0' / 0'	12 DU Acre	36'	60%
Multi-family Residential MF-2(A)	15' / 15'	Min lot 1,000 sq. ft. 800 sq. ft. - E 1,000 - 1 BR 1,200 - 2 BR + 150 sq. ft. each add BR	36'	60%
Community Retail CR	15' / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office	54' 4 stories	60%
Neighborhood Office NO(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio	30' 2 stories	50%
Neighborhood Service NS(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio	30' 2 stories	40%

8. Is the surrounding area part of a TIF, PID, or BID?
   - Included in the TOD Tax Increment Financing (TIF) District. Approved by Dallas City Council on December 10, 2008.
   - Area part of an Enterprise Zone http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/enterprise_zone_map.pdf

9. How much land is zoned Multi-Family (MF)? Is there a shortage of MF in the area based on age/distribution/income?
   - Within one-quarter mile radius of station almost no MF zoning
   - Within one-half mile radius of station (95912.94+287307.41) 383220.35 sq. ft. MF zoning
     - one-half mile radius of station = 0.79 sq. mi.

- 383220.35 sq. ft. = 0.013746 sq. mi.
- 0.013746 sq. mi. / 0.79 sq. mi. * 100 is about 1.74 percent MF zoning within a one-half mile radius of the station

10. What percent of land is available for development in the station area?
    Information gathered for a half-mile buffer around the VA Medical Center Station from the 2009 Dallas Central Appraisal District data.

Land Use Category	No. of Parcels	Acres	Percent of Total Acres
Commercial Improvements	89	158.36	32.58%
Commercial - Vacant	58	37.60	7.73%
Multi-Family Residences - Apartments	2	3.94	0.81%
Multi-Family Residences - Duplex	2	0.38	0.08%
Single-Family Condominiums	38	35.06	7.21%
Single-Family Residences	884	200.20	41.18%
Single-Family Residences - Vacant	168	50.58	10.40%
Grand Total	1241	486	100%

    Total commercial and single-family residences vacant acres 88.18 or 18.14 percent

11. What are the parking requirements in the zoning?
    Below is an example of parking requirements at the following zones:
    - Residential R-7.5 (A)
        - Multi-family: One space for each 500 square feet of dwelling unit floor area within the building site
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Townhouse Residential TH-3 (A)
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Multi-family Residential MF-2(A)
        - Duplex: Two spaces per dwelling unit
        - Group residential facility: 0.25 spaces per bed, plus one space per 200 square feet of office area; a minimum of four spaces is required
        - Residential hotel: 0.5 spaces per guest room
        - Retirement housing: 0.7 spaces per dwelling unit or suite, plus one space per 300 square feet of floor area not in a dwelling unit or suite
        - Single-Family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Community Retail CR
        - Required off-street parking: One space per 300 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
    - Neighborhood Office NO(A)
        - Office Uses: One space per 333 square feet of floor area
    - Neighborhood Service NS(A)
    - Parking P(A)
    - Planned Development (PD)
    - http://www.dallascityhall.com/development_services/development_code.html

- http://www.amlegal.com/nxt/gateway.dll?f=id$id=The%20Dallas%20City%20Code%3Ar%3A6ce0$cid=texas$t=document-frame.htm$an=JD_51A-4.301$3.0#JD_51A-4.301

12. Is a public service facility planned to be sited near the transit facility to demonstrate strength of public investment in the area?
    - Within one-quarter mile radius
        - Lisbon Cemetery
        - Air Quality Monitoring
        - Darrel, B.F. Elementary 4730 S. Lancaster Rd.
    - Within one-half mile radius
        - Lisbon Elementary 4203 S. Lancaster Rd.
        - Children First of Dallas 1638 Ann Arbor Ave.
        - Ann Arbor House 1712 E. Ann Arbor Ave. (not private)
        - Young, Whitney M. Elementary 4601 Veterans Dr.
        - US Army Reserve 4900 S. Lancaster Rd.

13. What are the regulatory and permitting procedures for a TOD? Can the time it takes to get permits be reduced?
    - DART TOD Summit March 2, 2007 Theresa O'Donnell presentation:
        - MU-3 zoning regulations cannot guarantee that a mix of uses and a pedestrian environment will be built.
        - Currently mix use such as development that contains retail and a high density of residential units require Planned Development Overlay.
    - Transit-Oriented Development (TOD) Program: Minimum eligibility for consideration of city incentives through the Public/Private Partnership Program will require a cumulative investment of $300 million for new mixed-use, commercial, retail, and/or residential development in proximity of at least two DART light-rail transit (with one or both in Southern Dallas) stations. TOD projects are eligible for consideration for the full complement of necessary and appropriate incentives available through this program including, but not limited to, tax increment financing, tax abatement, grants and loans, infrastructure cost participation. Residential developments seeking incentives will be required to have 20 percent affordable housing set aside in Northern Dallas and mixed-income housing in Southern Dallas. Further, projects must meet the City's established Good Faith Effort guidelines for M/WBE participation.
    - http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/guidelines.pdf
    - Developers may apply for form-based zoning in station areas under Chapter 51A, Article XIII: Form Districts, of the Dallas Zoning Ordinance. http://www.forwarddallas.org/files/up/FormDistrictsOrdinance_Final.pdf

14. Does the city offer density bonuses?
    - SEC. 51A-4.125. MIXED USE DISTRICTS (MUP): When a development qualifies as an MUP, it earns a higher maximum dwelling unit density and floor area ratio (FAR) and, in some instances, a greater maximum structure height. Additional FAR bonuses are incrementally awarded to encourage the inclusion of "residential" as part of an MUP. The exact increments of increase vary depending on the actual use categories mixed and the district that the MUP is in. For more information regarding the exact increments of increase, consult the yard, lot, and space regulations in this section governing the particular district of interest.

Resources:
Dallas Zoning
http://www.dallascityhall.com/zoning/html/zoning_information.html

Dallas Development Guide
http://www.dallascityhall.com/development_services/development_code.html

Dallas City Code
http://www.amlegal.com/nxt/gateway.dll/Texas/dallas/volumei/preface?f=templates$fn=default.htm$3.0$vid=amlegal:dallas_tx

Development Services
http://www.dallascityhall.com/development_services/zoning_maps.html

Chart Zoning
http://www.dallascityhall.com/pdf/planning/zonechart.pdf

Parking
http://www.dallascityhall.com/zoning/html/transportation_-_private_stree.html
Use Regulations for Off-Street Parking Requirements

DART – Economic Development & Planning
http://www.dart.org/about/economicdevelopment.asp

DART – TOD
http://www.dart.org/about/economicimpact.asp

APPENDIX A-4
NCTCOG TOD Audit
Ledbetter Station

1. Is the zoning for the area mixed-use? What is the density?
   - Per City of Dallas Chart of Zoning Rules no residential uses allowed in nonresidential districts except for mixed-use districts
   - Current zoning within one-half mile radius of station
     - Residential R-7.5 (A)
       - Density: 1 dwelling unit 7,500 sq. ft.
     - Residential R-5(A)
       - Density: 1 dwelling unit 5,000 sq. ft.
     - Townhouse Residential TH-3 (A)
       - Density: 12 dwelling unit acre
     - Multifamily Residential MF-2(A)
       - Density: Min lot 1,000 sq. ft., 800 sq. ft. – E, 1,000 – 1 BR, 1,200 – 2 BR, +150 sq. ft. each add BR
     - Mobile Home
       - Density: 1 DU/4,000 sq. ft.
     - Community Retail CR
       - Density: 0.75 overall 0.5 office
     - Neighborhood Service NS(A)
       - Density: 0.5 floor area ratio

2. Are the household population and total households (based on our forecast) at a sufficient density to support transit?
   - The base data for this assessment includes the following 2010 census blockgroups: 113.001 and 87.052 (1,742.71 total acres)
   - The 2035 Forecast includes the following TSZs: 8534, 40270, 8477, and 8478 (1,777.51 total acres).
   - **In 2010,** the household population for the 1,742.71 acres around Ledbetter Station was 3,026. 3026/1742.71 = **1.73 persons per acre**
   - **By 2035,** NCTCOG forecasts the household population for the 1,777.51 acres around the station will be 4,618. 4618/1777.51 = **2.59 persons per acre**
   - **In 2010,** there were 1,066 total households within the 1,742.71 acres around the station. 1066/1742.71 = **.61 households per acre**
   - **By 2035,** NCTCOG forecasts there will be 1,643 total households in the 1,777.51 acres around the station. 1643/1777.51 = **.92 households per acre.**
   - Density restrictions in residential zoned areas (7,500 sq. ft. per dwelling unit) allow only 5.8 dua (43,560 sq. ft./7,500 sq. ft.)

3. Does the zoning for the area allow auto-dependent uses by right?
   - The following auto-oriented development are located within one-quarter mile of the station:
     - Walgreens contains a drive thru pharmacy
     - Jack in the Box with drive thru window
     - Texaco gas station
     - O'Reilly Auto Parts

4. Does the area have planned hike and bike trail connections, adequate sidewalks and other pedestrian amenities?
   The following trails are within one-quarter and one-half mile of the station:
   - Regional Veloweb: planned. Source Greater Dallas Bike Plan

   Following trail within one-half mile of the station:
   - Regional Veloweb: existing off-street. Glendale Park, Greater Dallas Bike Plan

   Does the City of Dallas have an adequate sidewalk rule?

- Sidewalk inventory http://www.dallascityhall.com/streets/links.html

5. Is there a variety of land uses in the immediate area, or is the area mixed-use?
   2005 Land Use
   - Single-Family A1
   - Condominiums A5
   - Multi-Family B1
   - Vacant – Residential C1
   - Vacant – Commercial C2
   - Rural C3
   - Timberland D2
   - Commercial F1

6. Is the planned street grid density at least 20 centerline miles over total square miles, or at least 10 miles of streets for an area of .5 square miles?
   - No, there are 3.41 centerline miles of street and an area of .19628 square miles.

7. Are area/height/bulk restrictions adequate?

DISTRICT	SETBACKS Front Side/Rear	Density	Height	Lot Coverage
Residential R-7.5 (A)	25' / 5'	1 Dwelling Unit(DU) 7,500 sq. ft.	30'	45%
Residential R-5(A)	25' / 5'	1 DUt 5,000 sq. ft.	30'	45%
Townhouse Residential TH-3 (A)	0' / 0'	12 DU Acre	36'	60%
Mobile Home MH(A)	20' / 10'	1 DU/4,000 sq. ft.	24'	20%
Multi-Family Residential MF-2(A)	15' / 15'	Min lot 1,000 sq. ft. 800 sq. ft. - E 1,000 - 1 BR 1,200 - 2 BR + 150 sq. ft. each add BR	36'	60%
Community Retail CR	15' / 20' adjacent to residential OTHER: No Min.	0.75 overall 0.5 office	54' 4 stories	60%
Neighborhood Service NS(A)	15' / 20' adjacent to residential OTHER: No Min.	0.5 Floor Area Ratio	30' 2 stories	40%

8. Is the surrounding area part of a TIF, PID, or BID?
   - Close in approximation but not included in the TOD Tax Increment Financing (TIF) District.
   - Area part of an Enterprise Zone http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/enterprise_zone_map.pdf

9. How much land is zoned Multi-Family (MF)? Is there a shortage of MF in the area based on age/distribution/income?
    - Within one-quarter mile radius of station no MF zoning
    - Within one-half mile radius of station (106433.28+253485.82) 359919.10 sq. ft. MF zoning
        - one-half mile radius of station = 0.79 sq. mi.
        - 359919.10 sq. ft. = 0.01291 sq. mi.
        - 0.01291 sq. mi. / 0.79 sq. mi. * 100 is about 1.63 percent MF zoning within a one-half mile radius of the station

10. What percent of land is available for development in the station area?
    Information gathered for a half-mile buffer around the VA Medical Center Station from 2009 Dallas Central Appraisal District data.

Land Use Category	No. of Parcels	Acres	Percent of Total Acres
Commercial Improvements	49	79.17	13.70%
Commercial - Vacant	37	77.74	13.45%
Multi-Family Residences - Apartments	2	3.94	0.68%
Multi-Family Residences - Duplexes	1	0.09	0.02%
Non-Qualified Land	11	75.31	13.03%
Qualified Agricultural Land	7	48.96	8.47%
Rural Vacant - Less than 5 Acres	1	2.01	0.35%
Single-Family Residences - Condominium	38	35.06	6.07%
Single-Family Residences	530	163.71	28.33%
Single-Family Residences - Vacant	92	91.79	15.89%
Grand Total	768	578	100%

    Total commercial, rural, and single-family residences vacant acres 171.54 or 29.69 percent

11. What are the parking requirements in the zoning?
    Below is an example of parking requirements at the following zones:
    - Residential R-5(A)
        - Single-family: One space in R-7.5(A), R-5(A)
    - Residential R-7.5 (A)
        - Multi-family: One space for each 500 square feet of dwelling unit floor area within the building site.
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Townhouse Residential TH-3 (A)
        - Single-family: One space in R-7.5(A), R-5(A), and TH districts; two spaces in all other districts
    - Multi-family Residential MF-2(A)
        - Duplex: Two spaces per dwelling unit.
        - Group residential facility: 0.25 spaces per bed, plus one space per 200 square feet of office area; a minimum of four spaces is required
        - Residential hotel: 0.5 spaces per guest room
        - Retirement housing: 0.7 spaces per dwelling unit or suite, plus one space per 300 square feet of floor area not in a dwelling unit or suite

    - Single family: One space in R-7.5(A), R-5(A), and TH districts two spaces in all other districts
  - Community Retail CR
    - Required off-street parking: One space per 300 square feet of floor area. If more than ten off-street parking spaces are required for this use, handicapped parking must be provided pursuant to Section 51A-4.305
  - Neighborhood Service NS(A)
  - http://www.dallascityhall.com/development_services/development_code.html
  - http://www.amlegal.com/nxt/gateway.dll?f=id$id=The%20Dallas%20City%20Code%3Ar%3A6ce0$cid=texas$t=document-frame.htm$an=JD_51A-4.301$3.0#JD_51A-4.301

12. Is a public service facility planned to be sited near the transit facility to demonstrate strength of public investment in the area?
  - Within one-quarter mile radius
    - Dallas Fire Station 25 2112 56th St.
  - Within one-half mile radius
    - US Army Reserve 4900 S. Lancaster Rd.

13. What are the regulatory and permitting procedures for a TOD? Can the time it takes to get permits be reduced?
  - DART TOD Summit March 2, 2007 Theresa O'Donnell presentation:
    - MU-3 zoning regulations cannot guarantee that a mix of uses and a pedestrian environment will be built.
    - Currently mix use such as development that contains retail and a high density of residential units require Planned Development Overlay.
  - Transit-Oriented Development (TOD) Program: Minimum eligibility for consideration of city incentives through the Public/Private Partnership Program will require a cumulative investment of $300 million for new mixed-use, commercial, retail, and/or residential development in proximity of at least two DART light-rail transit (with one or both in Southern Dallas) stations. TOD projects are eligible for consideration for the full complement of necessary and appropriate incentives available through this program including, but not limited to, tax increment financing, tax abatement, grants and loans, infrastructure cost participation. Residential developments seeking incentives will be required to have 20 percent affordable housing set aside in Northern Dallas and mixed-income housing in Southern Dallas. Further, projects must meet the City's established Good Faith Effort guidelines for M/WBE participation. http://www.dallas-ecodev.org/images/corporate_expansion/corporate_main/taxes_and_incentives/guidelines.pdf
  - Developers may apply for form-based zoning in station areas under Chapter 51A, Article XIII: Form Districts, of the Dallas Zoning Ordinance. http://www.forwarddallas.org/files/up/FormDistrictsOrdinance_Final.pdf

14. Does the city offer density bonuses?
  - SEC. 51A-4.125. MIXED USE DISTRICTS (MUP): When a development qualifies as an MUP, it earns a higher maximum dwelling unit density and floor area ratio (FAR) and, in some instances, a greater maximum structure height. Additional FAR bonuses are incrementally awarded to encourage the inclusion of "residential" as part of an MUP. The exact increments of increase vary depending on the actual use categories mixed and the district that the MUP is in. For more information regarding the exact increments of increase, consult the yard, lot, and space regulations in this section governing the particular district of interest.

Resources:
Dallas Zoning
http://www.dallascityhall.com/zoning/html/zoning_information.html

Dallas Development Guide
http://www.dallascityhall.com/development_services/development_code.html

Dallas City Code
http://www.amlegal.com/nxt/gateway.dll/Texas/dallas/volumei/preface?f=templates$fn=default.htm$3.0$vid=amlegal:dallas_tx

Development Services
http://www.dallascityhall.com/development_services/zoning_maps.html

Chart Zoning
http://www.dallascityhall.com/pdf/planning/zonechart.pdf

Parking
http://www.dallascityhall.com/zoning/html/transportation_-_private_stree.html
Use Regulations for Off-Street Parking Requirements

DART – Economic Development & Planning
http://www.dart.org/about/economicdevelopment.asp

DART – TOD
http://www.dart.org/about/economicimpact.asp

APPENDIX B: BICYCLE AND PEDESTRIAN BEST PRACTICES AND DESIGN GUIDANCE

The following best practices are provided to assist engineers and designers in the development of bicycle and pedestrian facilities that meet all requirements set forth by the City of Dallas, the Texas Department of Transportation (TxDOT), and federal guidance, as applicable. The recommendations are based on the following nationally adopted design guideline documents: the *Manual on Uniform Traffic Control Devices* (MUTCD), 2009; the *Texas Manual on Uniform Traffic Control Devices* (Texas MUTCD) Part 9: Traffic Controls for Bicycle Facilities, 2006; the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, 1999, and the U.S. Access Board's *Americans with Disabilities Act Accessibility Guidelines* (ADAAG), 2004. Guidelines provided in this document are a supplement to these manuals. They are not design standards, and should not be used as such. Application of guidance provided in this document requires the use of engineering judgment when retrofitting the City of Dallas' roadways to provide bicycle and pedestrian facilities. Implementation of these guidelines will provide for safer accommodations for pedestrians, bicyclists, and individuals with disabilities, including those that have limited transportation options, and will encourage people to utilize alternative modes of transportation as opposed to the single occupant motor vehicle.

The MUTCD, 2009 Edition is a document issued by the Federal Highway Administration (FHWA) of the United States Department of Transportation (U.S. DOT) to specify the standards by which traffic signs, road surface markings, and signals are designed, installed, and utilized. These specifications include the shapes, colors, fonts, sizes, etc. used in road markings and signs. In the United States, all traffic control devices must generally conform to these standards. The Manual is used by state and local agencies as well as private construction firms to ensure that the traffic control devices they use conform to the national standard. While some state agencies have developed their own sets of standards, including their own MUTCDs (including TxDOT), these must substantially conform to the federal MUTCD, and must be approved by FHWA. The National Committee on Uniform Traffic Control Devices (NCUTCD) advises the FHWA on additions, revisions, and changes to the MUTCD.

The Texas MUTCD Part 9: Traffic Controls for Bicycle Facilities, 2006 is based on the national MUTCD. Part 9 provides guidance on bicycle facilities and is based, in part, on the 1999 AASHTO *Guide for the Development of Bicycle Facilities*. The Texas MUTCD has not been updated to reflect changes in the 2009 MUTCD. TxDOT has two years to update the Texas MUTCD when a new version of the MUTCD is published (likely in late 2011 or early 2012 in this instance), or they must adopt the national MUTCD and follow standards set forth in that document.

AASHTO is a nonprofit, nonpartisan association representing state highway and transportation departments. It publishes a variety of planning and design guides including the AASHTO *Guide for the Development of Bicycle Facilities,* 1999. This Guide provides planning and design guidance for on- and off-street bicycle facilities. It is not intended to set absolute standards, but rather to present sound guidelines that will be valuable in attaining good design sensitive to the needs of both bicyclists and other roadway users. The provisions in the Guide are consistent with, and similar to, normal roadway engineering practices. Signs, signals and pavement markings for bicycle facilities should be used in conjunction with the Texas MUTCD.

The U.S. ADAAG serves as the minimum baseline for the ADA standards. The guidance provided governs the construction and alteration of places of public accommodation, commercial facilities, and State and local government facilities. In its last update, the Board harmonized the ADA guidelines with the Architectural Barriers Act (ABA) guidelines for federal facilities and published them jointly.

Pedestrian Improvements: To encourage use of the transit system, pedestrian accessibility to the TOD is integral. There are many factors that should be addressed to ensure pedestrians can safely and efficiently access the TOD and transit station. These varying components are described in the following sections.

Sidewalks:[1] According to the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, separated sidewalks should have a minimum sidewalk width of seven feet with the width of the buffer strip between it and the street ranging from a minimum of four feet to a preferable six feet along arterial streets in non-commercial areas. Arterials where there is no buffer should offer curbside sidewalks 10 feet wide or greater. All streets within the pedestrian-oriented zone should have a minimum sidewalk width of 15 feet with an eight-foot buffer. The minimum usable width of these sidewalks should be at least seven feet to allow for wheelchair passage, etc. An additional 20-foot maximum supplemental zone should be considered on commercial streets where outside patios, sitting areas, or trellises might be located. Sidewalks should be included on both sides of the street. Curb ramps should be installed at each corner, one for each direction of travel, measuring four feet in width, and be located within the crosswalk in order to meet the Americans with Disabilities Act (ADA) Guidelines. Also the length of the ramp depends on curb height, with a maximum slope of 1:12. Tighter curb radii at intersections should also be considered in the range of five to 15 feet in order to shorten pedestrian crossing distances and force drivers to slow down to complete a turn. This also protects cyclists at intersections as it forces drivers to slow down and in turn makes them more aware of their surroundings (e.g., a bicycle going straight while the motorist is turning). Bulb-outs (also known as curb extensions) can also be constructed at intersections to prevent motor vehicles from parking at corners, narrow traffic lanes, and shorten pedestrian crossing distances and exposure (Exhibit B-1).

Exhibit B-1: Bulb-out
Source: NCTCOG

Crosswalks: Well-defined crosswalks are a key component to a walkable environment because they enhance pedestrian safety. Signage as well as crosswalks may be necessary for safety. In addition, bold patterns or textured crossings indicate to drivers that they need to proceed with caution. According to the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition, crosswalk markings should be

provided at locations controlled by traffic control signals or on approaches controlled by STOP signs; crosswalk lines should be installed where engineering judgment indicates they are needed to direct pedestrians to the proper crossing path(s); and across uncontrolled approaches provision of crosswalks based on engineering judgment and engineering studies which consider the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic, the posted speed limit, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.

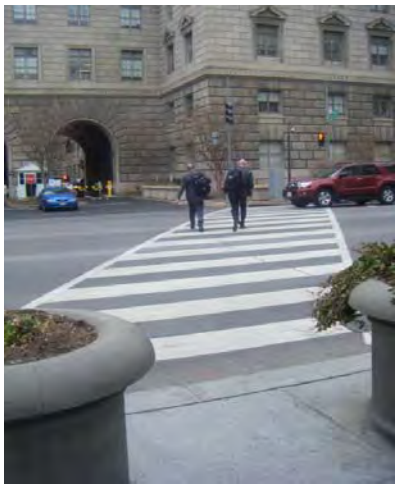


Exhibit B-2: Zebra stripes
Source: NCTCOG

Two types of pavement markings include parallel lines and perpendicular zebra stripes (Exhibit B-2). At a few locations, crosswalks are marked by special pavement materials. Special pavement materials for crosswalks should only be used in combination with traffic-calming devices; they need to be highly visible and not be a maintenance burden. By themselves, pavement markings are not enough. The motorist must be able to see the crosswalk. Drivers need to be able to see pedestrians who have entered the crosswalk or who are about to step off the curb. Side-mounted "Yield To Pedestrian" signs should be installed only at locations where visibility, traffic flow, or other circumstances create special safety problems. "Pedestrian Crossing" signs should be installed where the number of pedestrian crossings is high and motorists cannot easily see pedestrians.

Pedestrian Traffic Signals: Pedestrian signal indicators should be used at all traffic signals wherever warranted. According to the MUTCD 2009 Edition, countdown displays are now required for all new pedestrian signals. The pedestrian countdown signal tells the pedestrian how much time is left in the pedestrian clearance interval (Exhibit B-3). This signal has been proven effective in reducing the number of pedestrians who initiate a crossing too late in the cycle. The international pedestrian symbol signal is preferable and is recommended in the MUTCD 2009 Edition; the WALK and DON'T WALK messages are

allowable alternatives. Pedestrian signals should be clearly visible to pedestrians at all times when in the crosswalk or waiting on the far side of the street. Signals may be supplemented with audible messages to make crossing information accessible to all pedestrians, including those with visual impairments. A variety of traffic signal enhancements that can benefit pedestrians and bicyclists are available.

Exhibit B-3: Pedestrian countdown signal
Source: NCTCOG

Pedestrian pushbuttons may be installed at locations where pedestrians are expected intermittently. Quick response to the pushbutton or feedback to the pedestrian (e.g., indicator light comes on) should be programmed into the system. When used, pushbuttons should be well-signed and within reach and operable from a flat surface for pedestrians in wheelchairs and with visual disabilities. They should be conveniently placed in the area where pedestrians wait to cross. Pushbuttons should be designed according to the standards and guidelines in the MUTCD 2009 Edition, including the positioning of pushbuttons and legends on signs that clearly indicate which crosswalk signal is activated by which pushbutton. In addition, pushbuttons should be a minimum of two inches across in at least one direction. The force required to activate the buttons should not be greater than five pounds. In general, if pedestrians are present during a majority of the signal phases during the peak hour for a particular leg of an intersection, the pedestrian signal phase should be automatic (i.e. traffic signals should allow for pedestrian crossing automatically through synchronization of signals) and pedestrian pushbuttons should not be used. However, in areas with intermittent pedestrians, pushbuttons may be used to reduce delays to vehicular traffic. According to the MUTCD 2009 Edition, the recommended walking speed for calculating the pedestrian clearance time is 3.5 feet per second, except where extended pushbutton presses or passive pedestrian detection have been installed for slower pedestrians to request additional crossing time. In addition, the total of the walk phase and pedestrian clearance time should be long enough to allow a pedestrian to walk from the pedestrian detector to the opposite edge of the traveled way at a speed of 3.0 feet per second. The Lead Pedestrian Interval (LPI) helps reduce conflicts between

turning vehicles and pedestrians when turning vehicles encroach onto the crosswalk before pedestrians leave the curb. The LPI releases pedestrians (WALK phase) three to five seconds prior to the green light for vehicles. This measurement should be utilized when there is a double right or left turn movement, or in an intersection with high concentrations of turning traffic.

Pedestrian Amenities: Benches are an important sidewalk amenity, providing pedestrians on a long walk with an opportunity to sit and rest, wait for a bus, meet a friend, or read the paper. Benches should only be installed on streets that have adequate sidewalk widths, and they should not interfere with curb ramps, fire hydrants, parking meters, or emergency access ways. Benches should be installed in the sidewalk buffer zone, a minimum of two feet from the curb, or in the building zone as long as they do not obstruct the pedestrian path of travel. Good lighting for pedestrians makes many people feel safer at night. Streetlights should also be installed in the sidewalk buffer zone, a minimum of two feet from the curb to avoid damage from trucks that pass close to the curb. Streetlights at intersections must be placed so that pedestrians are visible to motorists. Pedestrian light fixtures should direct the light toward the sidewalk and should be between 10 and 12 feet in height to help foster a sense of security and comfort. Trees should be pruned regularly to ensure that branches do not block streetlights. Plant material can help create a more attractive streetscape, adding color to the environment, improving air quality, and creating a buffer between pedestrians and automobiles. Planters should be installed in the curb zone a minimum of two feet from the curb, in the building zone, or within the property line (Exhibit B-4).

Much like planters, trees can help create a more attractive streetscape, providing visual relief year round and shade from the Texas heat, improving air quality, and creating a buffer between pedestrians and automobiles. Trees should be pruned to ensure that their branches do not interfere with pedestrian and vehicular visibility and movement. On the sidewalk side, eight feet of clear space above the ground should

Exhibit B-4: Streetscape
Source: NCTCOG

be maintained; on the roadway side, 14 feet should be maintained with tree heights ranging from 30 to 50 feet. Trees should not be placed within 40 feet of an intersection or where they would interfere with people getting on and off buses. Other street furnishings to consider placing within the sidewalk buffer zone that add to a streetscape include kiosks, trash cans, newspaper boxes, and mailboxes.

Bicycle Improvements: As with pedestrian improvements, connectivity to transit should be a prime consideration in strategies for improving bike-transit commuting. Good sidewalk access and on-street bicycle facilities between destinations and transitway stations can encourage travelers to use transit, thereby reducing auto trips while supporting mixed-use TODs. Further support for combined bicycle and transit trips can include extensive signage, an interconnected street system, bicycle lanes, marked crosswalks, bicycle racks and lockers, and other facilities for pedestrians and bicyclists at transit stations and at other major destination centers throughout the city. To encourage a strong intermodal link, the policy for all transit modes, including light-rail transit and commuter rail, should be to allow bicycles on board. Recognizing that some bicycles may not be able to travel with the transit vehicle, bicycle racks and lockers should be located at transitway stations. In addition, to allow for commuters from farther origins to reach the transit station, collector buses should allow bikes on board or offer carrier racks on the front of the bus. Covered waiting areas and bicycle parking at bus stops and transit stations should also be considered. There are a variety of bicycle facilities that can be implemented to encourage the use of bike-transit commuting. These facilities and design considerations are discussed in the following sections.

Shared Use Path (Multi-use Trail): A Shared Use Path is a facility on an exclusive right-of-way and with minimal intersections with motor vehicles (Exhibit B-5). Shared Use Paths are sometimes referred to as trails; however, the term trail can refer to a variety of facilities that do not necessarily meet the design criteria for Shared Use Paths, so care should be taken when using these terms interchangeably. Users are restricted to non-motorized forms of transportation (with the exception of maintenance vehicles) and may include, but are not limited to, bicyclists, in-line skaters, wheelchair users, and pedestrians, including runners, people with baby strollers, people walking dogs, etc. Shared Use Paths should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road facilities. Shared Use Paths can serve a variety of purposes, from recreational facilities, to facilities along abandoned and active rail rights-of-way and utility corridors, to facilities that provide bicyclists access to areas that are otherwise served only by limited access highways closed to bicycles or that are limited by barriers.

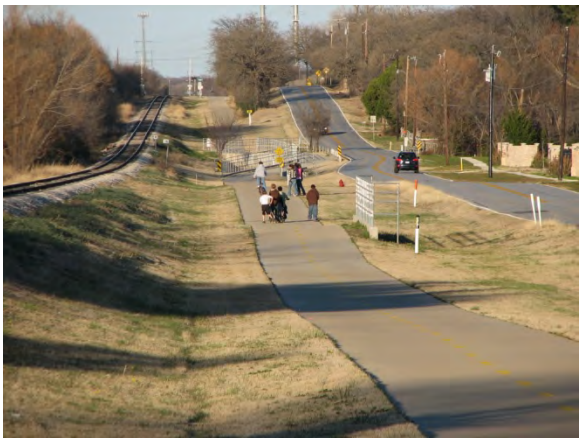


Exhibit B-5: Shared Use Path
Source: NCTCOG

Design Considerations: A recommended minimum width for two-directional travel on a Shared Use Path is 10 feet with a two-foot shoulder on either side. However, NCTCOG strongly encourages two-directional travel paths be implemented at a width of 12 feet. Under certain circumstances where high volumes of bicycles, joggers, skaters, and pedestrians are expected, a desired width is 14 feet with two-foot shoulders on either side. Additional clearance of one foot for signage is recommended.

Sidepath: A Sidepath is a Shared Use Path marked for bicycle (and sometimes pedestrian) use that is adjacent to a roadway, and are most appropriate in corridors where there are limited driveway crossings and intersections, or adjacent roadway speeds and volumes are higher (Exhibit B-6). This facility offers an option for those not comfortable riding on the road with traffic. However, careful facility design is needed to minimize conflicts between motorists and bicyclists at intersections. In addition, where Sidepaths are present, bicyclists should not be prohibited from the roadway.

Design Considerations: A recommended width for two-directional travel on a Sidepath is 10 feet with two-foot shoulders on either side. The minimum width of a one-directional Sidepath is six feet with two-foot shoulders on either side (in instances when Sidepaths are to be implemented on both sides of the roadway). Sidepaths should be separated from the roadway by a five-foot buffer. If this is not possible, a physical barrier not less than 42 inches high is recommended between the Sidepath and roadway to prevent path users from making unwanted movements between the path and the roadway. Additional clearance of one foot for signage is recommended.

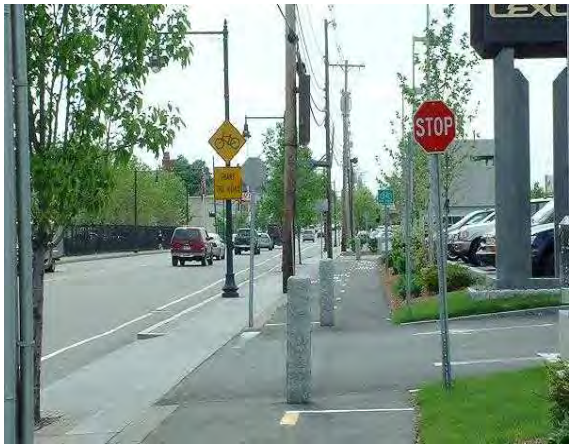


Exhibit B-6: Sidepath
Source: City of Watertown, MA

Bicycle Lane: Bicycle Lanes are portions of the roadway that have been designated for the preferential or exclusive use of bicyclists through striping, signage and other pavement markings (Exhibit B-7). On two-way streets, bike lanes should be provided on both sides of the road so that bicyclists can ride in the same direction as adjacent motor vehicle traffic.

Design Considerations: Bicycle Lanes should be at least four feet wide on roadways with open shoulders and five feet wide on roadways with curb and gutter or on-street parking. Pavement markings should appear at intervals not to exceed one-half mile. Five-foot wide bicycle lanes are typical, but wider lanes (e.g., six foot) are often used on roadways with high motor vehicle traffic volumes.

Exhibit B-7: Bicycle Lane
Source: City of Vancouver, WA

Buffered Bicycle Lane: The Buffered Bicycle Lane is a Bicycle Lane that is buffered by a two- to six-foot wide striped cross-hatched "shy zone" between the bicycle lane and the moving vehicle lane or the parking lane. This design makes movement safer for both bicyclists and vehicles. With the shy zone on the left of the bicyclist (Exhibit B-8), the buffered lane offers a more comfortable riding environment for bicycle riders who prefer not to ride adjacent to traffic; with the shy zone on the right of the bicyclist (Exhibit B-9), it puts the riders outside of the 'door zone' of parked cars. This system allows motorists to drive at a normal speed; they only need watch for cyclists when turning right at cross-streets or driveways and when crossing the Buffered Bicycle Lane to park.

Design Considerations: For use on streets with high bicycle volume and/or high motor vehicle volumes and speeds. Bicycle Lanes should be five feet wide with a two to six foot wide striped cross-hatched buffer, and bicycle pavement markings appearing more frequently than standard bicycle lanes (every 50 to 100 feet) to prevent vehicles from driving in the lane.

Exhibit B-8: Shy zone on left
Source: New York DOT

Exhibit B-9: Shy zone on right
Source: Arizona DOT

Cycle Track: The Cycle Track is an exclusive bicycle facility adjacent to, but separated from, the roadway by a physical barrier (Exhibit B-10). The facility is also separated from the sidewalk. The Cycle Track combines the user experience of a separated path with the on-street infrastructure of a Bicycle Lane. For use on arterial roadways with high motor vehicle speeds and volumes and roads with fewer cross-streets and longer blocks.

Design Considerations: Between six and eight feet wide, with a two-foot buffer on the vehicle side. Separation from the vehicle lane is channelized (elevated or at-grade), a mountable curb, or bollards/markings.

Exhibit B-10: Cycle Track
Source: New York DOT

Climbing Lane: Uphill Bicycle Lanes (also known as "Climbing Lanes"), separate vehicle and bicycle traffic and enable motorists to safely pass slower-speed bicyclists, thereby improving conditions for both travel modes. While descending bicyclists are often able to maintain vehicular travel speeds, bicyclists ascending hills tend to lose momentum, especially on longer street segments with continuous uphill grades. This speed reduction creates greater speed differentials between bicyclists and motorists, creating uncomfortable and potentially unsafe riding conditions. The

right-of-way or curb-to-curb width on some streets may only provide enough space to stripe a Bicycle Lane on one side. Under these conditions, Bicycle Lane striping could be added to the uphill side of the street, and Shared Lane Markings on the downhill side of the street (Exhibit B-11).

Exhibit B-11: Climbing Lane
Source: Portland DOT

Design Considerations: The uphill Bicycle Lane should be five to six feet wide. On the downhill side, the bicycle lane should be five to six feet wide if room permits; otherwise, a Shared Lane Marking should be installed according to the design guidelines outlined for Shared Lane Marking facilities.

Signed Bicycle Route: A Signed Bicycle Route is a shared roadway without any designated bicycle facilities, (i.e., no roadway striping or markings) (Exhibit B-12) Many non-arterial roadways with low traffic volumes and low speeds, such as neighborhood connectors, are ideal as a Signed Bicycle Route.

Design Considerations: Provide Bicycle Route Signs every one-third to one-half mile on straight segments of the route, depending on the locations of crossings with other Bicycle Routes, locations of primary arterial roadway crossings, sight distance, and the overall frequency of street crossings.

Exhibit B-12: Signed Bicycle Route
Source: Seattle, WA DOT

Shared Lane Marking: Shared Lane Markings (sometimes referred to as a "sharrow") are pavement symbols consisting of a bicycle with two chevron markings above the bicycle (Exhibit B-13). The Shared Lane Marking is utilized on roadways where bicyclists and motorists share the lane, of which the intent of the Shared Lane Marking is to improve bicyclist and bicyclist-motorist positioning. Traffic lanes are often too narrow to be shared side-by-side by bicyclists and passing motorists. Where parking is present, bicyclists wishing to stay out of the way of motorists often ride too close to parked cars and risk being struck by a suddenly-opened car door (being "doored").

Exhibit B-13: Shared Lane Marking
Source: San Francisco County Transportation Authority

Where no parking is present, bicyclists wishing to stay out of the way of motorists often ride too close to the roadway edge where they run the risks of being run off the road, being clipped by overtaking motorists who misjudge passing clearance, or of encountering drainage structures, poor pavement, debris, and other hazards.

Riding further to the left avoids these problems, and is legally permitted where needed for safety. However, this practice can run counter to motorist expectations. The Shared Lane Marking,

therefore, indicates the legal and appropriate bicyclist line of travel, and cues motorists to pass with sufficient clearance, as needed.

Design Considerations: The Shared Lane Marking should not be placed on roadways that have a speed limit above 35 mph. If used in a shared lane with on-street parallel parking, Shared Lane Markings should be placed so that the centers of the markings are at least 11 feet from the face of the curb or from the edge of the pavement where there is no curb. If used on a street without on-street parking that has an outside travel lane measuring less than 14 feet wide, the centers of the Shared Lane Markings should be at least four feet from the face of the curb or from the edge of the pavement where there is no curb. If used, the Shared Lane Marking should be placed immediately after an intersection and spaced at intervals not greater than 250 feet thereafter.

Paved Shoulder: Typically found in rural areas, shoulder bikeways are paved roadways with striped shoulders wide enough for bicycle travel (Exhibit B-14). In some cases, the opportunity to develop a standard Bicycle Lane on a desirable street may not be possible. However, it may be possible to stripe the shoulder in lieu of Bicycle Lanes by reducing the outside lane width to the AASHTO minimum. Where feasible, extra width should be provided with pavement resurfacing, but not exceed desirable bicycle lane widths.

Design Considerations: Striped shoulders should be four feet minimum without a curb; five feet minimum with a curb. Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway. Below four feet should not be designated or marked as a bicycle facility.

Exhibit B-14: Paved Shoulder
Source: Federal Highway Administration

Exhibit B-15 lists bicycle facility types and characteristics of each one.

Exhibit B-15: Bicycle Facility Types And Characteristics

Facility Type	Location	Design Considerations
Shared Use Path (Class I Bikeway)	Exclusive right-of-way	Shared Use Paths should be 10 to 14 feet depending on volume of users with 2-foot shoulders on either side. Supplemental on-road system.
Sidepath (Class I Bikeway)	Exclusive right-of-way	Sidepaths should be 10 feet min. for two-way travel with 2-foot shoulders on either side; 6 feet min. for one-way travel with 2-foot shoulders on either side. 5-foot buffer between path and roadway, or a physical barrier.
Bicycle Lane (Class II Bikeway)	On roadways: minor arterials, arterials	Bike Lanes should be at least 4 feet wide on roadways with open shoulders and at least 5 feet wide on roadways with curb and gutter or on-street parking. Pavement markings should appear every one-half mile.
Climbing Lane (Class II Bikeway)	On roadways with hills where adequate right-of-way for bike lanes on both sides of the roadway cannot be acquired	The uphill Bike Lane should be 5 to 6 feet wide. On the downhill side, the bike lane should be 5 to 6 feet wide if room permits, or Shared Lane Markings should be installed according to recommendations.
Buffered Bicycle Lane (Class II Bikeway)	On roadways with high motor vehicle volumes and/or speeds; on roadways with on-street parking that has a high turnover	Buffered bike Lanes should be 5 feet wide with a 2- to 6-foot wide striped cross-hatched buffer, and bicycle pavement markings should be placed every 50 to 100 feet.
Cycle Track (Class II Bikeway)	On roadways with high motor vehicle volumes and/or speeds	Cycle Tracks are between 6 to 8 feet wide, with a 2-foot buffer on the vehicle side. Separation from the vehicle lane is channelized (elevated or at-grade), a mountable curb, or bollards/ markings.
Signed Bicycle Route (Class III Bikeway)	On lower volume roadways that have lower speeds: neighborhood streets, collectors, etc.	Provide bike route signs every one-fourth mile and at intersections.
Shared Lane Marking (Class III Bikeway)	On lower volume roadways that do not have a speed limit over 35 mph: arterials, minor arterials, collectors, neighborhood streets, etc.	Shared Lane Markings on roadways with on-street parallel parking: should be placed 11 feet from edge of curb or edge of pavement. Without on-street parallel parking: 4 feet from curb or edge of pavement. Pavement markings immediately after an intersection and at least every 250 feet.
Paved Shoulder (Class III Bikeway)	On rural roadways, or on roadways where adequate right-of-way for on-street facilities cannot be acquired	Striped shoulders should be 4 feet min. without a curb; 5 feet min. with curb. Signage optional.

Additional Considerations: In addition to bicycle and pedestrian facilities, there are a number of components that should be taken into consideration when developing a successful TOD, including driveways, street network, building placement, and traffic-calming measures. Best practices for implementing these components successfully are covered in the remaining sections.

Driveways: Driveways should be clearly marked and designed to look like driveways, not intersections. Sidewalks should continue through the driveway and the driveway should be sloped to establish a clear right-of-way for pedestrians, and ultimately slowing down the motorist to allow for increased pedestrian safety. Driveways should be located away from intersections and consolidated or narrowed where possible to reduce the number of conflict points for pedestrians (Exhibit B-16).

Parking access on streets located within the pedestrian-oriented zone ideally should be restricted to on-street parking or via alleyways. For residential uses, minimum driveway width should be set at 10 feet with a maximum of 14 feet. For commercial uses, the minimum driveway width for two-way traffic should be 22 feet.

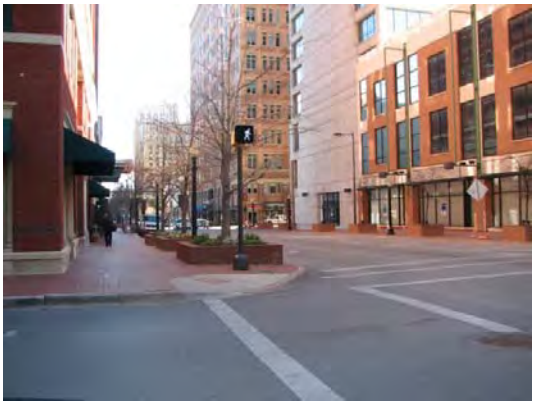


Exhibit B-16: Limited Driveways
Source: NCTCOG

Street Network: When redeveloping groups of parcels it is important to create good block form, often in a grid or other highly connected pattern which should offer multiple access points to the station and other uses within the development. Block distances should range from 300 to 500 feet in order to keep walking distances short and provide alternative route options for pedestrians. Frequent, interconnected streets increase the efficiency of transit and circulation, and offer more choices for pedestrians. Street links to trails within surrounding neighborhoods should be considered priority as they allow for an alternate accessibility route for adjacent communities. In addition, land use and zoning policies can also provide backing behind the development of a stronger non-motorized network. Safe and convenient access from a bicycle and pedestrian network to an entrance should be provided. Buildings should be as close to the transportation network as possible and provide safe entrances to the building which minimizes interaction between vehicles, pedestrians and bicyclists.

Building Placement and Features: Street-facing buildings with articulated façades should be oriented toward the pedestrian with minimal setbacks. Recurring windows and multiple entries should be prevalent with the minimum amount of ground-floor window space area equal to 40 percent of a building's length. Mixed-use and commercial buildings are desirable in the pedestrian-oriented zone.

For added definition and a sense of enclosure to the street, multi-story buildings should be present along with shelters such as arcades, awnings, trellises, and other overhangs to protect pedestrians from the effects of the region's changing seasons (Exhibit B-17).

Exhibit B-17: Mixed-use Development
Source: NCTCOG

Traffic-Calming Measures: Medians, bicycle lanes, narrow and reduced numbers of travel lanes, as well as on-street parking have all been proven effective means for creating a more pedestrian-friendly environment. The benefits for pedestrians include lower motor vehicle traffic speeds, more attentive motor vehicle operators, and shorter, more effective crossings. In general, on-street parking should be implemented on at least one side of the street at a width of eight feet, along with a six foot wide bicycle lane. Narrowing travel lanes to 10 or 11 feet will slow motor vehicle traffic speeds and create space for bicycle lanes, which also act as a buffer for pedestrians, and create a safer environment for cyclists. Medians can create pedestrian crossing islands at large intersections or in the event that a crossing needs to occur at an uncontrolled location. They can be signalized or non-signalized, but should at least include zebra striping across the

Exhibit B-18: Traffic Circle
Source: NCTCOG

entire length of the pedestrian crossing. In general, pedestrian crossing islands should only be constructed when pedestrian volumes are high and crossing poses a safety concern for pedestrians. Within neighborhoods, traffic-calming measures can be used to slow motor vehicle traffic with techniques such as speed humps and traffic circles (Exhibit B-18). These methods are also beneficial in breaking up long stretches of straight streets.

[1] *Americans with Disabilities Act Accessibility Guidelines* (ADAAG). Washington, D.C., Access Board, 2002.

Summary of Commercial Properties along the Rail Line and Within One-Quarter Mile from the Illinois Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
2111	Corinth St.	Dallas Area Rapid Transit	Commercial Improvements	1914	41,004	7.246	$609,380	$315,640	$925,020
1802	Denley Dr.	Moore, Sandra D	Commercial Improvements	1962	1,200	0.115	$34,600	$5,000	$39,600
1734	Denley Dr.	Trinity Heights Community	Commercial Improvements	1930	240	0.209	$37,640	$9,100	$46,740
1243	Illinois Ave.	Whitmarsh, B A Etel	Commercial Improvements	1972	66	0.273	$8,550	$17,810	$26,360
2301	Denley Dr.	Cyrus, Mitchell N.	Commercial Improvements	1980	2,874	0.268	$58,670	$17,520	$76,190
2302	Denley Dr.	Schneiderjan, Meta	Commercial Improvements	1957	1,620	0.269	$12,480	$17,570	$30,050
1410	Illinois Ave.	Southland Corp. 26151	Commercial Improvements	1985	2,560	0.515	$178,270	$33,620	$211,890
2308	Lancaster Rd.	Hicks, Mary Rose	Commercial Improvements	1945	1,518	0.037	$39,230	$2,400	$41,630
2310	Lancaster Rd.	Large, Carl R.	Commercial Improvements	1936	1,152	0.104	$13,970	$6,810	$20,780
2300	Corinth St.	L & M Muffler Shop Inc.	Commercial Improvements	1959	3,545	0.264	$25,700	$17,250	$42,950
1427	Illinois Ave.	Baenisch, James	Commercial Improvements	1981	1,794	0.377	$114,620	$24,630	$139,250
2232	Corinth St.	Sania Retail Inc	Commercial Improvements	1964	1,421	0.352	$49,110	$21,370	$70,480
1415	Illinois Ave.	McDonalds Corp	Commercial Improvement (originally labeled vacant)	1987	4659	1.056	$392,710	$69,000	$461,710
2321	Lancaster	Leark Inc	Commercial Improvement (originally labeled vacant)	1940	3580	.199	$89,500	$13,020	$89,500
Totals					67,233	13.078	$1,664,430	$570,740	$2,235,170

Source: Dallas Central Appraisal District, 2009

Summary of Housing Properties along the Rail Line and Within One-Quarter Mile of the Illinois Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
1406	Vermont Ave.	Mojica Benito and Guadalupe	Single Family Residences	1925	1,368	0.167	$5,770	$12,000	$17,770
1410	Vermont Ave.	Munazio, Emmanuel	Single Family Residences	1925	850	0.170	$12,360	$12,000	$24,360
2115	Denley Dr.	Lofton, Frank Jr.	Single Family Residences	1925	1,016	0.085	$23,870	$13,000	$36,870
2109	Denley Dr.	Lofton, Jimmy	Commercial Improvements	1942	1,258	0.088	$22,910	$3,850	$26,760
2209	Denley Dr.	Mitchell, Lucy	Single Family Residences	1945	1,706	0.287	$48,980	$13,000	$61,980
Totals:					6,198	.797	$113,890	$53,850	$167,740

Source: Dallas Central Appraisal District, 2009

Summary of Commercial Properties Along the Rail Line and Within One-quarter Mile from the Kiest Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
3050	Lancaster Rd.	Donaldson Properties LTD	Commercial Improvements	1960	205667	9.980	$735,820	$869,460	$1,605,280
1507	Kiest Blvd.	Wendy's International, Inc	Commercial Improvements	2004	1366	0.353	$397,030	$46,130	$443,160
3039	Lancaster Rd.	City of Dallas	Commercial Improvements	1966	2250	0.337	$157,500	$29,400	$186,900
3103	Lancaster Rd.	Hatley, Ashford D., Harrell, Reba Mae	Commercial Improvements	1952	1571	0.187	$18,070	$16,330	$34,400
3107	Lancaster Rd.	Counter, Mildred, MMB & Sons, Rubio, Yolanda	Commercial Improvements	1990	988	0.191	$27,170	$16,650	$43,820
3115	Lancaster Rd.	Edwards, Rudolph, A Plus Hair Gallery	Commercial Improvements	1952	1704	.195	$21,660	$17,010	$38,670
3115	Lancaster Rd.	Edwards, Rudolph, A	Commercial Improvements	1995	1378	.239	$112,700	$20,800	$133,500
3123	Lancaster Rd.	Prause, Herman J	Commercial Improvements	1976	1200	0.255	$16,010	$22,230	$38,240
3225	Lancaster Rd.	Fardel House LTD	Commercial Improvements - Vacant Lots	0	0	0.194	$0	$25,350	$25,350
3231	Lancaster Rd.	Fardel House LTD	Commercial Improvements	1969	2475	0.328	$164,000	$42,900	$206,900
3311	Lancaster Rd.	Hoppenstein Properties	Commercial Improvements	1959	7944	0.716	$335,370	$93,610	$428,980
3335	Lancaster Rd.	Novogroder Lancaster LLC	Commercial Improvements	1977	8800	0.743	$437,470	$97,130	$534,600
3403	Lancaster Rd.	Fields, Lela	Commercial Improvements	1961	3250	0.302	$152,500	$39,450	$191,950
3411	Lancaster Rd.	Irving, Bernard & Betty	Commercial Improvements	1949	2322	0.149	$86,190	$19,470	$105,660
3417	Lancaster Rd.	Dallas D&K Corp	Commercial Improvements	1983	2718	0.545	$88,820	$71,180	$160,000
3501	Lancaster Rd.	Nationsbank NA	Commercial Improvements - Vacant Lots	0	0	0.248	$0	$32,460	$32,460
House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
3523	Lancaster Rd.	Bank of America Texas NA	Commercial Improvements - Vacant Lots	1995	3903	0.794	$335,850	$71,350	$407,200

3605	Lancaster Rd.	Fried Chicken LLC, S&B Food SVS LLC	Commercial Improvements	1977	780	0.301	$115,460	$26,270	$141,730
3611	Lancaster Rd.	Flewellen, Karon R	Commercial Improvements	1969	1500	0.271	$61,320	$35,450	$96,770
1739	Marfa Ave.	Flewellen, Mary Lee	Commercial Improvements	1955	1174	0.153	$2,500	$13,300	$15,800
3202	Lancaster Rd.	Donaldson Properties LTD	Commercial Improvements - Vacant Lots	0	0	0.207	$0	$27,010	$27,010
3200	Lancaster Rd.	Donaldson Properties LTD, Fred Loya Ins., Rina Investments LLC, Jordan Rick	Commercial Improvements	2006	4269	13.420	$1,157,790	$1,169,180	$2,326,970
3304	Lancaster Rd.	Dallas Area Rapid Transit	Commercial Improvements	1996	100	2.900	$9,780	$378,920	$388,700
3520	Lancaster Rd.	Park, Jae Ho	Commercial Improvements	1950	4160	0.388	$206,850	$50,740	$257,590
3508	Lancaster Rd.	Park Abraham Chun & Cho	Commercial Improvements	1951	2800	0.559	$186,240	$73,040	$259,280
3602	Lancaster Rd.	Southland Corp	Commercial Improvements	1987	2482	0.512	$334,930	$66,960	$401,890
3620	Lancaster Rd.	Solarin Saheed Lawal	Commercial Improvements - Vacant Lots	0	0	0.129	$0	$22,480	$22,480
				Totals:	265521	34.8	$5,169,760	$3,412,070	$8,581,830

Source: Dallas Central Appraisal District, 2009

Summary of Commercial Properties along the Rail Line and Within One-quarter Mile of the VA Medical Center Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
4302	Lancaster Rd	Kim, James	Commercial Improvements	1998	3,000	0.332	$357,150	$57,850	$415,000
4500	Lancaster Rd	US Veterans Hospital, Siemens Medical Solns, Water & Power Tech.	Commercial Improvements	1995	100	87	$45,620	$870,000	$915,620
1909	Ann Arbor Ave.	Ridenour, Robert	Commercial Improvements	1918	1,776	0.222	$81,400	$29,070	$110,470
4244	Lancaster Rd.	Ridenour, Robert	Commercial Improvements - Vacant	0	0	0.104	$0	$14,550	$14,550
4303	Lancaster Rd.	Park, Peter	Commercial Improvements	1957	1,144	0.246	$15,710	$42,840	$58,550
4343	Lancaster Rd.	Cit Wide Community Dev Corp	Commercial Improvements	0	0	0.782	$0	$204,440	$204,440
4411	Lancaster Rd.	Cit Wide Community Dev Corp	Commercial Improvements	0	0	0.410	$0	$107,160	$107,160
4415	Lancaster Ave.	Cit Wide Community Dev Corp	Commercial Improvements	1953	1,279	0.157	$29,070	$41,120	$70,190
4417	Lancaster Ave.	Cit Wide Community Dev Corp	Commercial Improvements	1955	4,376	0.176	$48,520	$22,950	$71,470
4419	Lancaster Ave.	Cit Wide Community Dev Corp	Commercial Improvements	1952	1,440	0.176	$27,450	$22,950	$50,400
4501	Lancaster Rd.	Sapphire Road Dev LLC	Commercial Improvements	1961	440	0.193	$2,970	$25,210	$28,180
4507	Lancaster Ave.	Sapphire Road Dev LLC	Commercial Improvements	1956	1,800	0.194	$13,040	$25,350	$38,390
4515	Lancaster Ave.	NEO ARC Developments	Commercial Improvements - Vacant	0	0	0.581	$0	$75,900	$75,900
House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value

4523	Lancaster Rd.	NEO ARC Developments	Commercial Improvements - Vacant	0	0	0.194	$0	$25,350	$25,350
4527	Lancaster Rd.	NEO ARC Developments	Commercial Improvements - Vacant	0	0	0.194	$0	$25,350	$25,350
4531	Lancaster Ave.	McCullough Verna C Corp	Commercial Improvements - Vacant	0	0	0.196	$0	$25,620	$25,620
4615	Lancaster Rd.	Sapphire Road Dev LLC	Commercial Improvements - Vacant	0	0	0.194	$0	$23,230	$23,230
4619	Lancaster Rd.	Sapphire Road Dev LLC	Commercial Improvements - Vacant	0	0	0.194	$0	$23,230	$23,230
4623	Lancaster Ave.	Sapphire Road Dev LLC	Commercial Improvements	1960	2,472	0.194	$50,500	$25,350	$75,850
4631	Lancaster Ave.	Reynolds, Johnnie C	Commercial Improvements	1966	840	0.483	$19,990	$63,090	$83,080
4703	Lancaster Rd.	Sapphire Road Dev LLC	Commercial Improvements	1964	422	0.177	$1,000	$23,110	$24,110
4709	Lancaster Rd.	Levine Reality	Commercial Improvements	1959	9,300	0.388	$156,030	$50,690	$206,720
4735	Lancaster Rd.	Soh Kum, Sook	Commercial Improvements	1950	13,720	0.749	$112,120	$97,880	$210,000
4811	Lancaster Rd.	Rodrigue, Renaud	Commercial Improvements	1989	1,500	0.608	$15,000	$53,000	$68,000
				Totals:	43,609	94.32	$975,570	$1,998,240	$2,973,810

Source: Dallas Central Appraisal District, 2009

Summary of Commercial Properties along the Rail Line and Within One-Quarter Mile of the Ledbetter Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
5025	Lancaster Rd.	Shaw Yu	Commercial Improvements	2003	1792	0.552	$459,650	$192,290	$651,940
2103	Ledbetter Dr.	Martin L. Stephen	Commercial Improvements	1984	2560	0.310	$168,450	$108,030	$276,480
5002	Lancaster Rd.	Debusk Foundation	Commercial Improvements - Vacant	0	0	6.757	$0	$294,330	$294,330
5174	Lancaster Rd.	City of Dallas	Commercial Improvements - Vacant	0	0	0.556	$0	$48,480	$48,480
2107	Shellhorse Dr.	Sweet Fellowship Church	Commercial Improvements - Vacant	0	0	0.119	$0	$10,400	$10,400
5400	Lancaster Rd.	City of Dallas	Commercial Improvements - Vacant	0	0	3.284	$0	$3,280	$3,280
5307	Lancaster Rd.	City of Dallas	Commercial Improvements - Vacant	0	0	1.059	$0	$1,060	$1,060
5307	Lancaster Rd.	Jimmy Ray Anderson	Single-Family Residences - Vacant	0	0	0.915	$0	$8,400	$8,400
Totals:					4352	13.552	$628,100	$666,270	$1,294,370

Source: Dallas Central Appraisal District, 2009

Sample of Housing Properties along the Rail Line and Within One-Quarter Mile of the Ledbetter Station

House Number	Street	Owner Name	Land Use	Year Built	Square Feet	Acres	Improvement Value	Land Value	Total Value
2103	Arden Rd.	Robert Roberson	Single-Family Residences	1941	884	.126	$4,420	$6,750	$11,170
5308	Lancaster Rd.	Francisco Aldaba	Single-Family Residences	2005	1281	.293	$80,360	$11,250	$91,610
5320	Lancaster Rd.	Secretary of Veteran Affairs	Single-Family Residences	2006	1805	.285	$10,4070	$11,250	$115,320
5304	Lancaster Rd.	Glenn Garrett	Single-Family Residences - Vacant	0	0	0.236	-	$11,250	$11,250
5307	Lancaster Rd.	Jimmy Ray Anderson	Single-Family Residences - Vacant	0	0	0.915	-	$8,400	$8,400
				Totals:		1.151		$19,650	$19,650

Vacant Parcels in Floodplain near Ledbetter Station

Parcel #	House No.	Street	Owner Name	Current Zoning	Current Land Use	Acres	Improvement Value	Land Value	Total Value	Legal Description
1	1800	Arden	Genaro Silva	Single Family (R-7.5(A))	Single Family Residential - Vacant	4.281	$0	$6,000	$6,000	Glendale Acres, BLK W/4374 LOT 3.1
2	1850	Arden	Vancel Fridrich	Single Family (R-7.5(A))	Single Family Residential - Vacant	4.404	$0	$3,000	$3,000	Glendale Acres, BLK W/4374 E PT LOT 3 ACS 4.4037
3	1926	Arden	Vancel Fridrich	Single Family (R-7.5(A))	Single Family Residential - Vacant	2.124	$0	$3,000	$3,000	Glendale Acres, BLK W/4374 W 1/2 LOT 2 ACS 2.1235
4	1942	Arden	Vancel Fridrich	Single Family (R-7.5(A))	Commercial - Vacant	2.567	$0	$3,000	$3,000	Glendale Acres, BLK W/4374 LT 2 ACS 2.5666
5	2031	Hampshire	Jimmie Ray Anderson	Townhouses (TH-3(A))	Single Family Residential - Vacant	4.410	$0	$12,000	$12,000	Glendale Acres, BLK W/4374 PT LOT 1 ACS 4.4102
6	5307	Lancaster	Jimmie Ray Anderson	Townhouses (TH-3(A))	Single Family Residential - Vacant	0.915	$0	$8,400	$8,400	Glendale Acres, BLK Z/4377 PT LOT 1 ACS 0.9149
7	5210	Burnside	City of Dallas	Single Family (R-7.5(A))	Commercial - Vacant	1.998	$0	$2,000	$2,000	Glendale Acres, BLK W/4374 LT 3.2 ACS 1.9982
8	1942	Arden	City of Dallas	Single Family (R-7.5(A))	Commercial - Vacant	1.863	$0	$1,860	$1,860	Glendale Acres, BLK W/4374 LT 3.3 ACS 1.8634
9	5307	Lancaster	City of Dallas	Townhouses (TH-3(A))	Commercial - Vacant	1.170	$0	$1,170	$1,170	Glendale Acres, BLK W/4374 LT 1.1 ACS 1.1708
10	5307	Lancaster	City of Dallas	Single Family (R-7.5(A))	Commercial - Vacant	1.059	$0	$1,060	$1,060	Glendale Acres, BLK Z/4377 LT 1.1 ACS 1.0594
11	1947	Hampshire	City of Dallas	Single Family (R-7.5(A))	Single Family Residential - Vacant	5.922	$0	$2,820	$2,820	Glendale Acres, BLK Y/4376 LT 1.1 ACS 5.922
12	5400	Lancaster	City of Dallas	Single Family (R-7.5(A))	Commercial - Vacant	3.284	$0	$3,280	$3,280	Glendale Acres, BLK Z/4377 LT 2.3 & PT LT 3
13	1943	Hampshire	Tomas Aleman	Single Family (R-7.5(A))	Single Family Residential - Vacant	6.602	$0	$3,180	$3,180	Glendale Acres, BLK Y/4376 PT LTS 1-5 ACS 6.602
					Totals:	40.599	$0	$48,970	$50,770	

Source: Dallas Central Appraisal District, 2009