UPPER KIRBY - LIVABLE CENTERS STUDY

FINAL REPORT

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EXECUTIVE SUMMARY

A. THE VISION

The goal of the Livable Centers Study is to identify improvements that create neighborhoods that are compact and mixed use, designed to be walkable and connected and accessible within the Upper Kirby District. The future MetroRail through Upper Kirby provides an important public investment in the neighborhood that can help to initiate this goal. The Study seeks to build off of this resource with focused public and private improvements that guide short and long-term growth. The overall vision for the neighborhood is to create a place with a strong local identity that is economically healthy, vibrant, connected, walkable, and green.

B. SUMMARY OF RECOMMENDATIONS

The Study recommends a number of key elements focused on overall neighborhood structure, connectivity and circulation, pedestrian and bicycle amenities, parks and open space, land use and urban form and design guidelines. These recommendations are summarized below:

- As redevelopment happens over time, create both auto and pedestrian connections that help facilitate neighborhood connectivity throughout the District.
- Develop improved sidewalks and streetscape amenities along key arterials including West Alabama Street, Richmond Avenue, Kirby Drive, Eastside Street and Greenbriar Street.
- Encourage additional safe pedestrian crossings of Richmond Avenue and Kirby Drive.
- Identify properties that could be utilized as greenspace including small neighborhood parks, pocket parks and community gardens.
- Celebrate Levy Park and create greater pedestrian access to this important existing open space.
- Encourage mixed-use redevelopment with a housing emphasis in the northeast district.
- Encourage mixed-use redevelopment with a employment emphasis along the Richmond Corridor.
- Encourage mixed-use redevelopment with a retail emphasis along the Kirby Corridor.
- Encourage mixed-use redevelopment with a employment emphasis in the southeast district.
- Promote the Gallery Subdistrict as both a neighborhood and regional amenity.
- Investigate shared parking districts throughout the neighborhood in conjunction with new development.
- Promote the Civic Center District as the "heart" of Upper Kirby with both public and private investment.

Encourage additional safe pedestrian crossings.

New development in the Livable Centers should be compact, mixed use and walkable.

C. NEXT STEPS - PRIORITY PROJECTS

The following steps should be taken by the Upper Kirby Management District, City and area stakeholders in the near (0-5 years) and medium (5-10 years) term in order to put the Study into action and ensure positive momentum and neighborhood change. These steps are prioritized based both on the planning team's expertise and on feedback gathered from the Upper Kirby community. Please see section IV Implementation Roadmap for detailed information on each of the steps.

1. Develop an overall parking strategy for the Upper Kirby District including reduced parking requirements for new developments and shared parking districts.
2. Focus on immediate station area improvements in conjunction with METRO including kiss and ride spaces and a transit plaza at the NE corner of Richmond and Lake.
3. Create a "Pedestrian Linkages and Wayfinding" Plan for the district, building directly off of the recommendations of the Livable Centers Study.
4. Implement streetscape improvements in conjunction with METRO along the Richmond Corridor.
5. Establish the Civic Center project as a key transit-oriented development and prioritize streetscape improvements in the Civic Center subdistrict.

Create a "Pedestrian Linkages and Wayfinding" Plan.

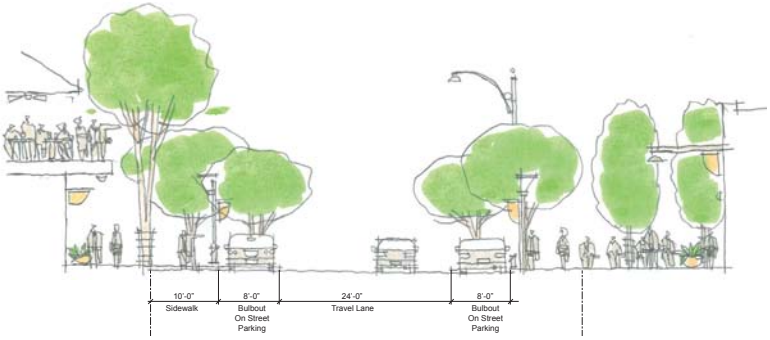


FIGURE 1 Proposed area improvements in conjunction with METRO to include kiss and ride spaces and transit plaza.

PROJECT OVERVIEW & EXISTING CONDITIONS

A. BACKGROUND

I. THE LIVABLE CENTERS PROGRAM

The Houston-Galveston Area Council's (H-GAC) Livable Centers program is part of a strategy designed to address expected regional growth of 3.5 million added people by 2035, combined with limited, already congested mobility infrastructure that is, for the most part, automobile dependent by improving access while reducing the need for mobility by Single-Occupant Vehicles (SOV). Harris County and other surrounding counties are classified as in severe nonattainment by the U.S. Environmental Protection Agency (EPA). This means the region is failing to meet emission requirements as old as 1997, the mobility infrastructure has not kept pace with current demand and, most likely, will not be able to accommodate future growth. Therefore, a new direction in improving transit access, enhancing quality of life, reducing emissions, and providing more efficient mobility alternatives is indicated. H-GAC Livable Centers program is designed, in part, to do so. H-GAC defines Livable Centers as safe, convenient, and attractive areas where people can live, work, and play with less reliance on their cars. The Goals of the Livable Centers Program seek to create neighborhoods that are:

- Compact and mixed use
- Designed to be walkable
- Connected and accessible

Livable Centers projects offer a number of benefits in terms of the community, mobility, environment, and economic development. These benefits are directly related to the following regional goals outlined in H-GAC's 2035 Regional Transportation Plan (RTP):

- Improve mobility and reduce congestion
- Improve access to jobs, homes, and services
- Increase transit options
- Coordinate transportation and land use plans
- Create a healthier environment

The Livable Centers Studies seek to improve mobility and reduce congestion in the region

New development in the Livable Centers should be compact, mixed use and walkable.

2. PROJECT OVERVIEW AND PROCESS

Upper Kirby is a very successful district, that has crafted successful plans and made a number of recent improvements. The neighborhood is very focused on a common vision and well-organized. Significant property development is expected in the near future and there is heavy traffic volume in this area.

The Livable Centers Study for the Upper Kirby study area builds upon and coordinates with existing planning efforts by the Upper Kirby Management District. The Livable Centers Study will essentially amend the current Upper Kirby Urban Design Master Plan into a Transit-Oriented Development (TOD) plan. The Study examines and provides strategies and projects to improve the pedestrian realm around the future Kirby light rail station as well as around the Upper Kirby District's proposed community outreach/civic center development.

Existing view along Eastside Street.

Existing view along Alabama Avenue.

3. LOCATION AND CONTEXT

The Upper Kirby District is located in the heart of Houston. Between the Galleria area and downtown, Upper Kirby District is immediately adjacent to Greenway Plaza, River Oaks, West University, and Montrose. The Upper Kirby District is identified with several agencies and organizations. Also known as the Harris County Improvement District #3, Upper Kirby is also Tax Increment Reinvestment Zone #19 (Upper Kirby Redevelopment Authority) and is a member of the Super Neighborhoods #23 and #87. Other entities that identify with the District are the Upper Kirby Foundation. Located in the central area of Houston between Downtown and Uptown along the US 59 corridor, Upper Kirby is one of Houston's most active and vital activity centers. It serves as a center of office, commercial, and residential activity.

The Upper Kirby District is surrounded by varying neighborhoods and office centers. These outside influences include high-end residential (River Oaks) to the north, high-end residential (West University) to the south, office (Greenway Plaza) to the west and a mix of residential, commercial, and ultimately the museum district/downtown to the east.

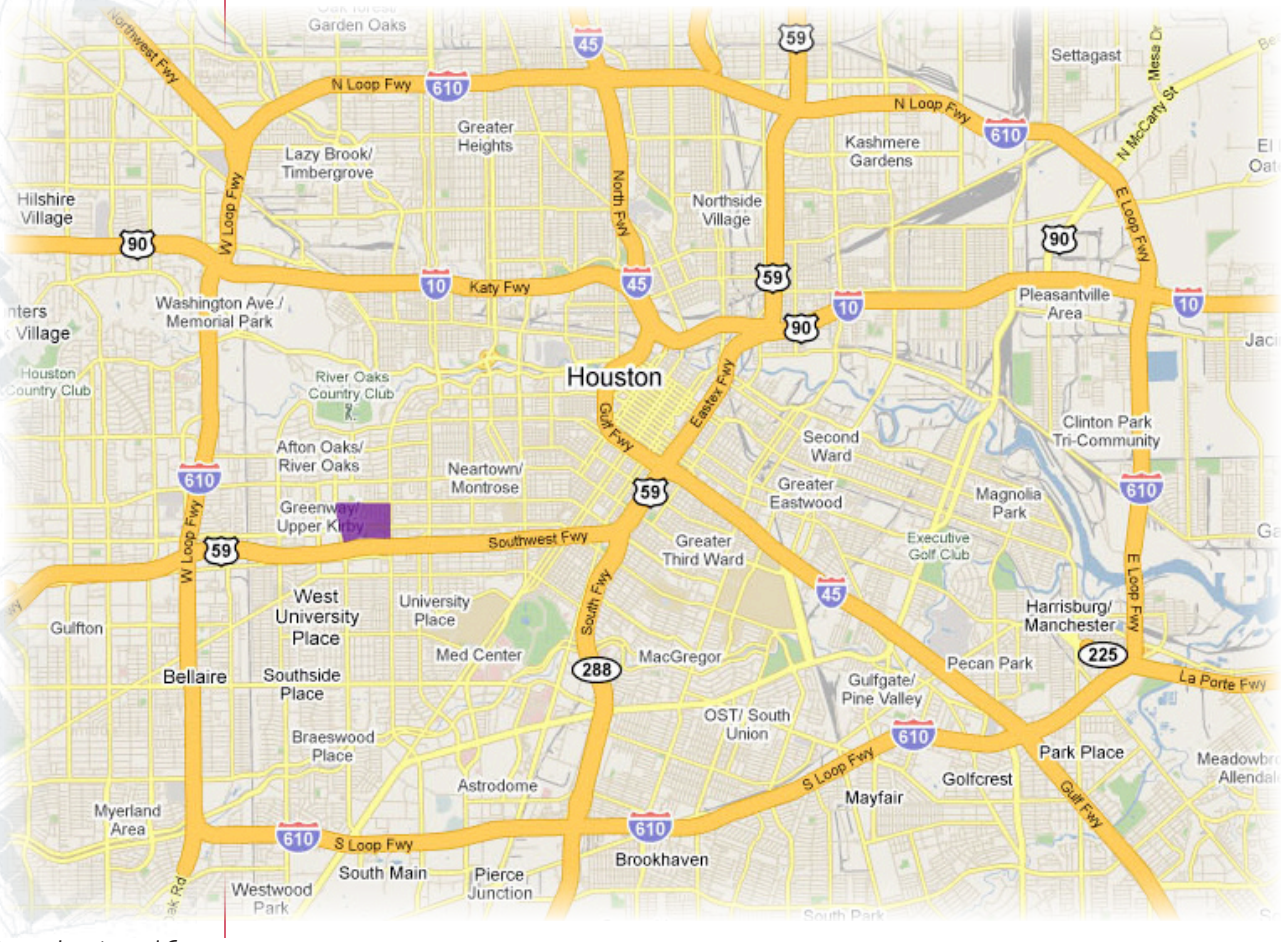


Figure 2 Location and Context
Location Map The Upper Kirby Neighborhood is located southwest of Downtown Houston, just north of Interstate 59

4. UPPER KIRBY - A LOOK BACK

In order to create a vision for the future, it is important to take a look back and examine how our neighborhoods were formed and developed. The aerial photo below shows the beginnings of the Upper Kirby District in 1957. At this time, Upper Kirby was at the western city limits of Houston and Interstate 59 was not yet developed. What this snapshot shows is that the much of the street network was in place fifty years ago, and has not really been expanded up in the years since. Residential development was first to arrive in the Upper Kirby District, particularly in the neighborhoods on the eastern side of the Study District surrounding Greenbriar Street along with the existing David Crockett single family area north of the Gallery District. South of Richmond Avenue, the multi-family housing west of Levy Park had been established as well as single-family housing near Wakeforest Avenue that has since been redeveloped into multi-family.

Upper Kirby in 1957 shows a fairly urban, walkable pattern of development and interconnected blocks. The dead end cul-de-sacs in the northwest corner of the district hint at the suburban development pattern to come. In 1957 most of the commercial properties along Alabama Street, Kirby Drive, and Richmond Avenue had yet to be developed. Future years would see these areas created with fairly intensive commercial development oriented around the automobile. Fifty years later, the goal is to focus on these areas as opportunity sites for walkable, transit-oriented development.

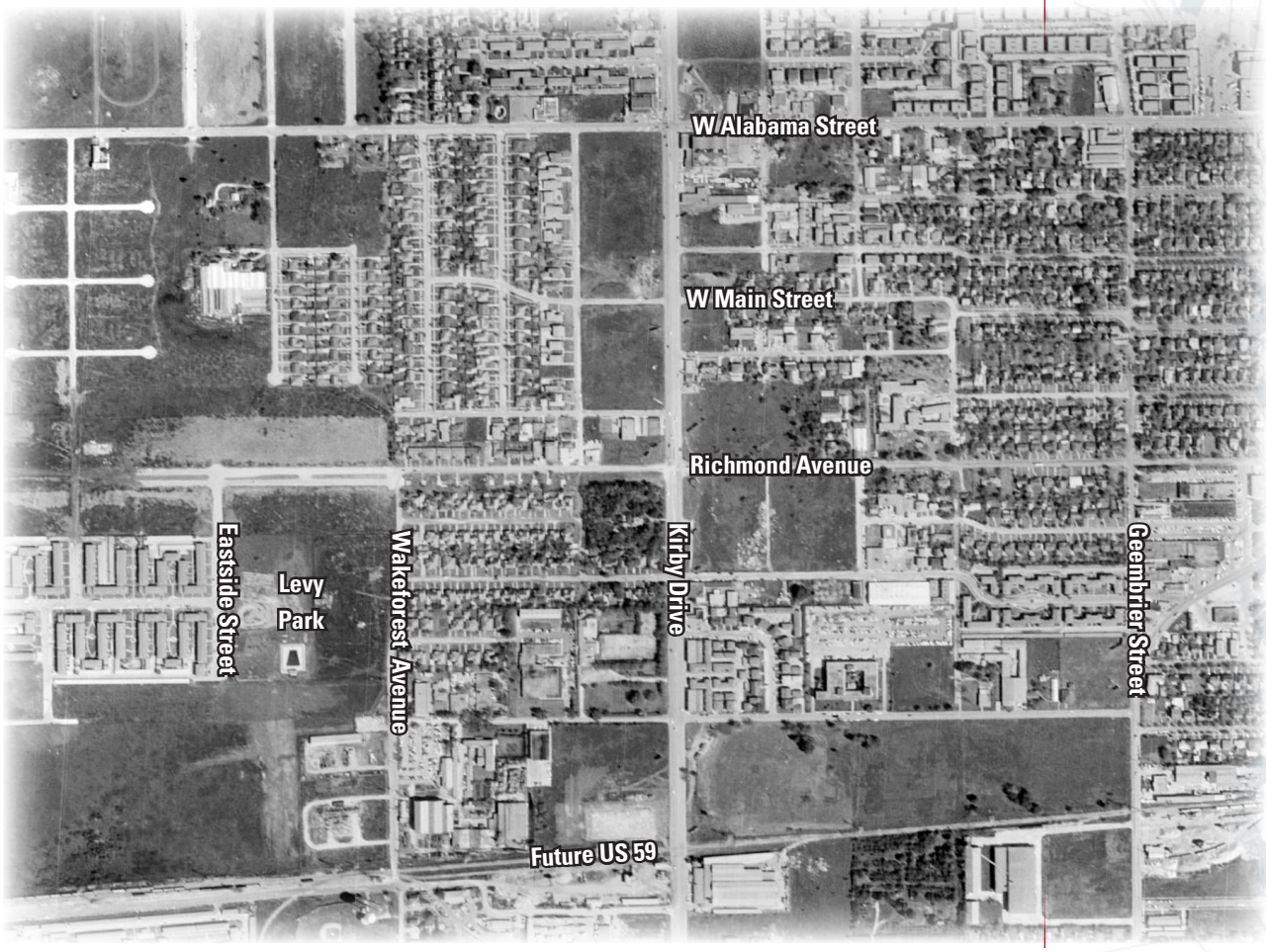


Figure 3 *The Upper Kirby District in 1957, before construction of Interstate 59*

5. WHAT IS TOD AND SMART GROWTH

Transit-oriented developments (TODs) are compact, mixed-use developments situated at and around transit stops. TODs focus a mix of land uses, such as residential, office, retail, civic uses and entertainment within easy walking and biking distance from a transit station (generally 1/4 mile to 1/2 mile, 5-10 minutes walking). This mix of uses, combined with thoughtfully designed community spaces, plazas and parks, form a vibrant village-like neighborhood where people can live, work and play. Transit-oriented developments provide an opportunity to encourage transit ridership, while discouraging sprawl, improving air quality and helping to foster a sense of community for Houston residents. Studies conducted by the Urban Land Institute indicate that, in general, properties located within a quarter of a mile radius of a light rail station increase up to 25% in value more than other properties.

> *"Smart growth recognizes connections between development and quality of life. It leverages new growth to improve the community. The features that distinguish smart growth in a community vary from place to place. New smart growth is more [inter-connected] town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities. Successful communities do tend to have one thing in common–a vision of where they want to go and of what things they value in their community–and their plans for development reflect these values."*
>
> - Smart Growth Network

The Livable Centers Studies seek to improve mobility and reduce congestion in the region

New development in the Livable Centers should be compact, mixed use and walkable.

B. ONGOING AND PREVIOUS STUDIES

I. METRO SOLUTIONS TRANSIT PROJECT

In development since 2001, METRO Solutions is a comprehensive transit system plan to help solve the Greater Houston region's traffic congestion and air quality problems. The plan was crafted with extensive input from the public, METRO's regional transportation partners and mobility experts nationwide. The plan was adopted by the METRO Board of Directors in July 2003 and approved by voters in November 2003. The plan calls for major multimodal transit improvements across the region and extends through 2014 the General Mobility Program.

UNIVERSITY CORRIDOR

The University Corridor extends approximately 11.3 miles traveling from the Hillcroft Transit Center on the west end to the Eastwood Transit Center on the east end. Nineteen stations will be strategically located to ensure optimal ridership and efficiency of operations. The stations occurring between the end point transit centers will be: Gulfton, Bellaire, Newcastle, Weslayan, Cummins, Edloe, Kirby, Shepherd, Menil, Montrose, Wheeler, Almeda, Hutchins, TSU, Tierwester, Scott and Cullen.

Significant higher educational destinations along the alignment include the University of Houston Main Campus, Texas Southern University and St. Thomas University. The added connectivity to the Main Street line will also provide access to Rice University, the University of Houston Downtown, and Houston Community College.

Business and cultural destinations include Greenway Plaza, the Menil, and many other businesses that operate adjacent to the alignment. And again, the inter connectivity advantage creates farther reaching options that include the Uptown/Galleria area, U of H / Southeast area, Downtown Houston, the Museum District and the Medical Center.

A transit station is proposed in the center of the Study Area at Kirby Drive and Richmond Avenue. Two other stations are proposed in close proximity at Richmond and Shepherd Drive and Richmond and Edloe Street.

The introduction of rail transit to this neighborhood provides a major new amenity for both current and future residents, workers and visitors.

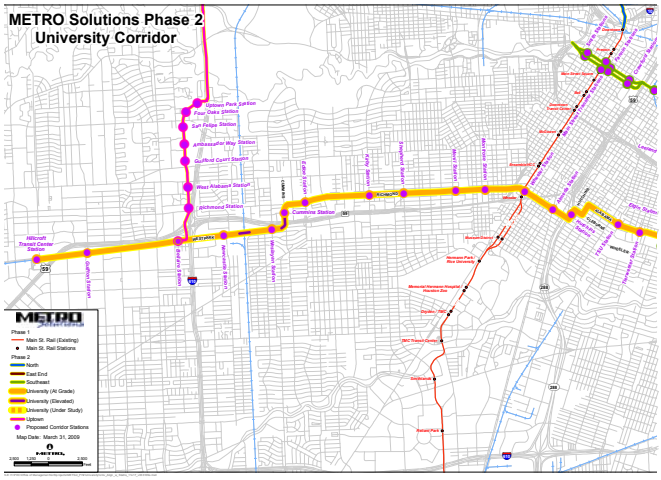


Figure 4 Metro Solutions - Phase 2 University Corridor.
The University Corridor of the METROrail system will help connect Upper Kirby to the greater Houston region

The University Corridor of the METROrail system will provide a major new amenity for Upper Kirby.

2. HOUSTON URBAN CORRIDOR PLANNING

In June 2006, the City of Houston embarked on a major initiative, Urban Corridor Planning. This initiative will change how the City regulates development and designs its streets and other infrastructure in order to create a high quality urban environment in areas along METRO's light rail corridors: Main Street, Uptown, East End, North, Southeast and University. The Corridor Ordinance regulates new development along transit corridor streets (TCS) and intersecting streets (Type "A") by providing standards and guidelines for sidewalks, landscape, entries and building design.

Figure 5 The Corridor Ordiance sets standards and guidelines along the University transit corridors

3. URBAN DESIGN MASTER PLAN

The Upper Kirby Urban Design Master Plan emphasizes the planning and design of the built environment while promoting reinvestment and development. This plan will accomplish these goals by establishing guidelines that will:

- Promote a user friendly pedestrian environment within the District
- Enhance Upper Kirby's visual image and identity
- Create identifiable entries into the Upper Kirby District
- Create a framework for civic improvements to occur throughout the District

The improvements identified by the Upper Kirby District Urban Design Master Plan reaffirm the intent of the public sector through investment to create the quality urban design amenities that will encourage and accelerate private commercial development. The Urban Design Master Plan is the source for much of the Existing Conditions information in this Needs Assessment.

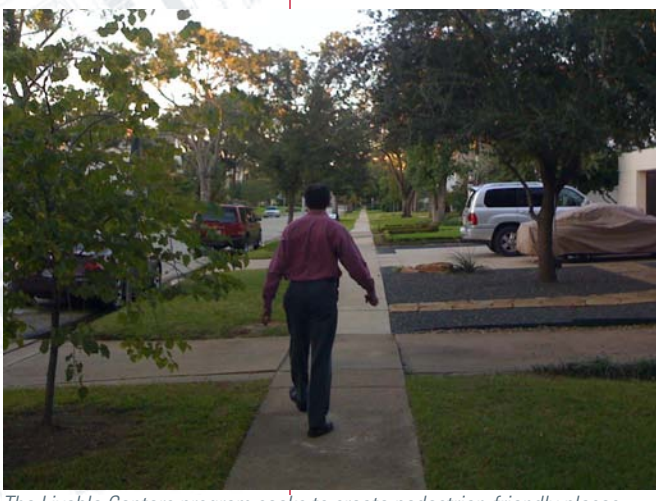
Figure 6 *Upper Kirby Urban Design Master Plan - Structure Plan*

4. MOBILITY IMPROVEMENT PLAN

With the existing high transit usage, increasing density, and increasing pedestrian orientation in the district, UKMD was interested in developing a pedestrian-transit accessibility program for the entire area. To enhance the quality of the pedestrian environment and to accommodate the extensive new growth, UKMD launched this mobility improvement plan to determine the most-needed improvements and their cost, funding, and timing.

One of the goals of the Mobility Improvement Plan is to enhance the usage of METRO transit services to reduce congestion, reduce delay, lower air pollution, and reduce parking need. The area encompassed by the Upper Kirby Management District (UKMD) already is served by an extensive transit network (refer to Chapter 3). However, many of the existing bus stops are not accessible. The analysis in this chapter examined the pedestrian environment in Upper Kirby to remedy existing deficiencies, improve pedestrian access, and accommodate extensive new growth.

A wide variety of streetscape conditions exist throughout the area. Some areas have no sidewalks at all. Some existing sidewalks are strewn with barriers and many of the heavily traveled thoroughfares pose daunting barriers to pedestrians crossing. Other areas are beautifully landscaped and filled with amenities, requiring little or no improvement.



The Livable Centers program seeks to create pedestrian-friendly places

Many streets in the neighborhood lack adequate pedestrian amenities

5. CIVIC CENTER MASTER PLAN

Located south of Richmond Avenue and east of Levy Park, the Civic Center Master Plan focuses on the redevelopment of a 4.16 acre site to be developed for community use. The proposed development with its adjacency to Levy Park will provide a well balanced, multi-use venue in the Upper Kirby District, satisfying the expressed needs of the community. Program planning is still underway.

Civic Center birds-eye view from Richmond Avenue

The Civic Center Plan seeks to integrate with adjacent Levy Park

C. PLANNING AREA OVERVIEW

I. PLAN PRINCIPLES

The following Plan Principles build off of the goals and strategies of the Upper Kirby Urban Design Master Plan:

- Promote a user friendly pedestrian environment within the District
- Enhance Upper Kirby's visual image and identity
- Create identifiable entries into the Upper Kirby District
- Create a framework for civic improvements to occur throughout the District

The Study will seek to enhance Upper Kirby's visual image and identity

2. EXISTING LAND USE

The Upper Kirby District is comprised of many different land use types. These varying land use types affect how people work, live, travel and recreate within the Upper Kirby District. By documenting these land uses, we can understand patterns of development, circulation and connection needs, buffering requirements, neighborhood identities and characteristics, and so forth.

The majority of the District is a conglomerate of land uses offering a more mixed use feel to the area. The Richmond corridor is primarily Office west of Kirby and Commercial/Residential east of Kirby. Kirby Drive is primarily Retail/Commercial along its entire stretch. The area located just northwest of the study area is largely Public Institutional. This "Educational Zone" is home to Lamar High School and St. John's School. Typical Freeway Commercial/Office exists along US 59. The Residential neighborhoods of David Crockett and Alabama Place comprise the majority of Single Family within the District boundaries.

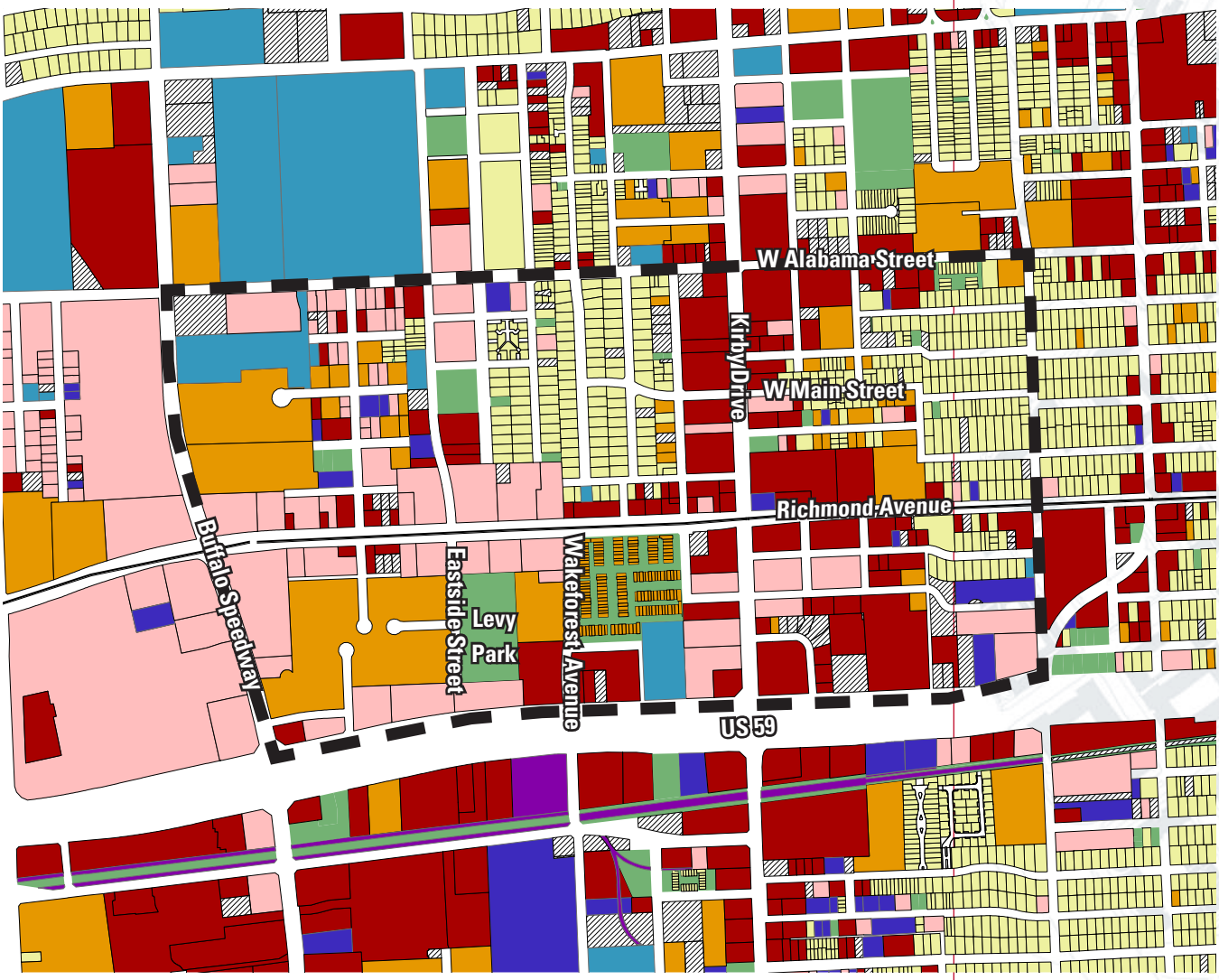


Figure 7 *Existing Land Use Map (source: Harris County Appraisal District)*

3. COMMERCIAL CORRIDOR

The commercial corridors of Upper Kirby function as the main shopping and transportation routes through the community. They are also where the METROrail expansion is planned and the largest amount of change is likely to occur.

KIRBY DRIVE

The Kirby Retail/Office corridor is a high speed and high traffic corridor with low pedestrian activity. Kirby is currently the "main street" of the planning area, with a number of retail, office, and service uses. A streetscape improvement project recently implemented, which included the installation of 5-foot sidewalks, pedestrian lighting and furniture, a raised median in place of a continuous left-turn lane and ADA compliant ramps and push buttons to aid in pedestrian mobility. Even with these positive changes, the overall pedestrian experience along Kirby Drive is still fairly poor due to less than optimal sidewalk widths and a large number of curb-cuts and auto-oriented businesses set back from the street with surface parking. However, a trend toward pedestrian scale development projects such as the Gables West Avenue project at the Kirby/ Westheimer intersection indicate the auto-oriented business footprint is not long for Kirby Drive. By limiting curb cuts, extending the pedestrian zone, calming traffic, and providing clear and easily understood wayfinding, Kirby Drive could be realized as a pedestrian boulevard as opposed to the current high speed vehicular dominated space that it is.

WEST ALABAMA

West Alabama is a diverse corridor providing connections from multi family and single family residential areas to schools, retail and business nodes. West Alabama hosts the only designated bike lane within the Upper Kirby District. This corridor is not considered pedestrian friendly. Small sidewalks and fast traffic conditions impede pedestrian flow. The large intersections of West Alabama with major corridors such as Kirby and Buffalo Speedway further hinder pedestrian flow and create barriers rather than facilitators into the District.

Upper Kirby contains a large number of service, office and retail uses

RICHMOND AVENUE

The Richmond Avenue currently portrays a parkway character which includes tree planted medians and large building setbacks. This corridor fails to provide a continuous pedestrian link and lacks many pedestrian scaled amenities that would encourage activity or flow. The large center median will be replaced by a light rail line in the near future.

BUFFALO SPEEDWAY

Buffalo speedway is a high-volume traffic coordinator at the edge of the planning area. The speedway serves as a major arterial connecting Greenway Plaza to surrounding neighborhoods and Interstate 59.

US 59

The district is currently divided by US 59, a major southwest freeway that extends from Victoria to Marshall Texas, and is also a major route from the north and south suburbs to downtown Houston. This major divider has created not only a visual obstruction, but also a physical separation between the northern and southern portions of the district. Inadequate lighting and segmented sidewalks under and around the freeway overpasses deter pedestrians from traveling these dark and menacing routes. These current conditions also add to the separation of identity between the northern and southern areas of the district. Linking these two areas and by doing so establishing the Upper Kirby identity south of US 59 must be a priority. Development along the US 59 corridor resembles most freeway development further obscuring any visual cues that one has entered the Upper Kirby District.

Richmond Drive currently has a parkway character which may be affected with the arrival of light rail

4. DISTRICTS

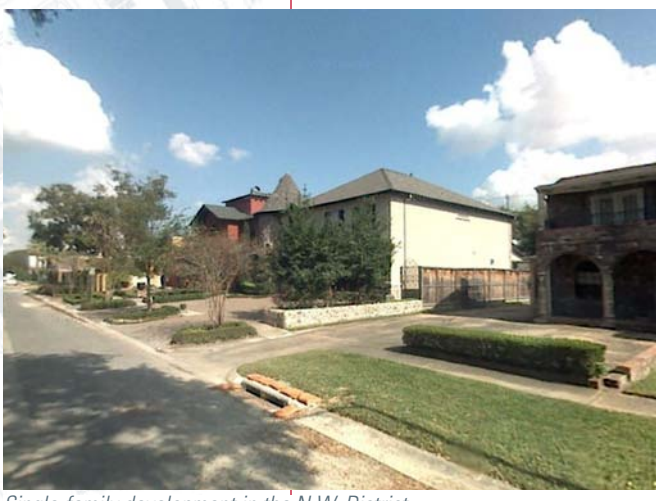
For the purpose of this Study, we have organized the Plan area into a series of Districts, Sub Districts and Corridors. Each of these areas have unique characteristics, uses and development intensities.

NORTHWEST DISTRICT

The Northwest District is located north of Richmond and west of Kirby Drive. The areas closest to Kirby Drive are primarily single-family in nature and are characterized by quiet, leafy streets. This area, known as the David Crocket neighborhood is an upscale single family residential area with large street trees and pedestrian scaled sidewalks. David Crocket lacks adequate connections to surrounding schools, public open space, and retail/ commercial areas. To the south of this area a small section of Colquitt Street has been designated as the Gallery Sub District. This area is a major cultural destination for Upper Kirby residents and visitors. The central portion of the Northwest District is identified as the Audley/Eastside Sub District. This Sub District contains a mix of uses and building forms and is an important connection between the schools north of Alabama Street and the Richmond/Kirby rail station.

NORTHEAST DISTRICT

The Northeast District contains the Alabama Place neighborhood, which is a single family residential area with existing street trees and pedestrian scaled sidewalks. This residential area is bordered by the Shepherd, Richmond and West Alabama corridors. Existing pedestrian connections to Alabama Place are disjointed. The pedestrian connections to other Districts lack the pedestrian lighting and gateway elements needed for transition and wayfinding. Several large multi-family developments have recently been built in this area, increasing overall density, improving the streetscape and providing potential transit riders.



Single-family development in the N.W. District

Multi-family development in the N.E. District

SOUTHWEST DISTRICT

The Southwest District centers on Levy Park and is primarily multi-family residential in nature. In the southern portion of the District, the Hotel Sub District has been identified. This Sub District is an important destination for visitors who may also provide high transit ridership at the new station. The pedestrian connection between the Hotel Sub District and Richmond Avenue is extremely important. The Civic Center Master Plan provides an important opportunity to strengthen this area as the heart of Upper Kirby. The western portion of the district is a high density neighborhood that may increase in desirability through its proximity to two transit stations along Richmond Drive.

SOUTHEAST DISTRICT

The Southeast District, located east of Kirby Drive and south of Richmond Drive has a high degree of development potential based on its location, future transit access and highway visibility. The existing businesses in the District are primarily office or service in nature with a small amount of residential development.

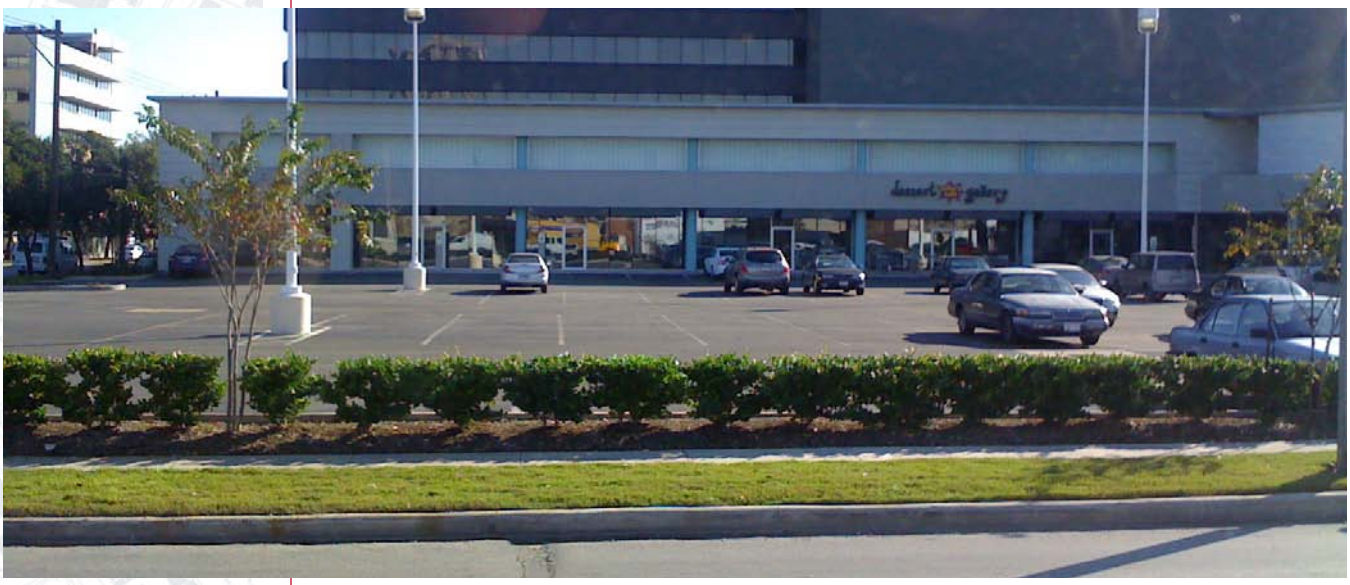
The Hotel Sub District from Interstate 59

Service and Office uses in the S.E. District

5. ISSUES AND OPPORTUNITIES

AUTO ORIENTED STREETSCAPES

The commercial corridors of Upper Kirby function as the main shopping and transportation routes through the community. They are also where the METROrail expansion is planned and the largest amount of change is likely to occur. In the past 50 years these corridors have been developed into an auto-oriented environment. Typically along these corridors buildings are set back from the street with surface parking lots in front. This orientation creates a pedestrian-unfriendly suburban character throughout the neighborhood. Signage is typically characterized by large pole-signs that are designed to be seen at high speeds. Pedestrian infrastructure is limited and in need of improvement and connections through parking lots from the sidewalk are often missing. Large curb-cuts create conflict between pedestrians and autos.



Auto-oriented streetscape on Richmond Avenue

Auto-oriented streetscape on Audley Street

PEDESTRIAN ORIENTED STREETSCAPES

The Upper Kirby neighborhood includes pockets of commercial, residential and mixed-use buildings that are pedestrian-scaled and adjacent to the sidewalk. The most significant clusters of these buildings are found along Kirby Drive south of Richmond Avenue and at new developments such along Revere Street. These areas help to create a walkable urban scale and should be preserved and enhanced where ever possible. Throughout the country, areas with consistent walkable urban form, especially near transit stations, have been revitalized with new uses, building renovations and private investment. Many of these areas in Upper Kirby have the potential to become vibrant neighborhood and regional centers of activity.

Pedestrian-oriented streetscape on Revere Street

Pedestrian-oriented streetscape on Kirby Drive

MAJOR DESTINATIONS

Major destinations in and around the Upper Kirby neighborhood include Lamar High School, a public secondary school, and St. John's School, an independent K-12 school. Existing retail and services along commercial corridors are also major destinations for workers and shoppers. These destinations are likely to draw a variety of transit riders and should be a focus of circulation improvements.

Connecting residents to transit and services is a major goal of the Livable Centers Program. The Districts/Connections Diagram shows important pedestrian connections to the Major destinations in the area. Streetscape improvements can help to create a safer, more attractive walking experience. Commercial corridors, especially within a 1/4 mile of transit stations, should be prioritized for improvements due to the highest anticipated volume of walkers and bikers.

GATEWAYS

Gateways represent the entrances into the Upper Kirby neighborhood, and are typically located on the edges of the district. The most important gateway into the study area is the intersection of Kirby and Interstate 59. Traveling under or off of Interstate 59 represents a clear physical entry point into the neighborhood. This entrance point serves as the regional gateway for the entire District. The entry experience at this point is unimpressive due to a lack of Upper Kirby identity elements, a visually uninteresting bridge structure, and a lack of pedestrian scaled elements at the intersection. The introduction of architectural elements and lighting can provide a distinct District presence on Interstate 59. Additionally, the incorporation of adequately scaled pedestrian elements under the Interstate will enhance the north/south entrance sequence. These same principles of design can be applied to other District gateways to help re-establish the District's edge and to reassure the visual identity of the area. Other minor distinct gateways occur at Richmond and Buffalo Speedway, Interstate 59 and Buffalo Speedway and Greenbriar and Interstate 59.

These gateway areas are typically the first thing a visitor sees when entering Upper Kirby and

Interstate 59 at Kirby Drive - Existing View

Gateway Concept at Interstate 59 - Upper Kirby Urban Design Master Plan

should be attractive and welcoming. With the completion of the light rail line, new gateways will occur at the station at Richmond and Kirby . This station will be the major point of entry for transit riders into the neighborhood.

BLOCK STRUCTURE

The Upper Kirby area has a disjointed block network, lacking adequate connections and block form in many areas. The eastern part of the neighborhood, closer to Greenbriar Street contains more of a typical, historic street pattern with blocks approximately 250' x 500'. Areas further west take on more of a suburban pattern with long streets without breaks, superblocks and cul de sacs. New development within the Upper Kirby neighborhood should fit within the existing block pattern while creating new streets and paths within large blocks to ensure a high degree of connectivity and walkability.

Figure 8 Existing Block Structure
Upper Kirby has a more regular block pattern in the eastern portions of the neighborhood

AREAS OF OPPORTUNITIES

"Areas of opportunities" are defined as vacant and underutilized properties that have potential for redevelopment. The areas that have the largest areas of opportunities include the Audley/ Eastside Subdistrict, the Kirby Commercial Corridor, the Richmond Commercial Corridor and the S.E. District. The Livable Centers Study will focus proposed changes and neighborhood improvements on these areas of opportunities. The parts of Districts that are not designated as areas of opportunities are primarily residential in nature. These areas are not likely to change in character though they may include substantial pedestrian improvements.

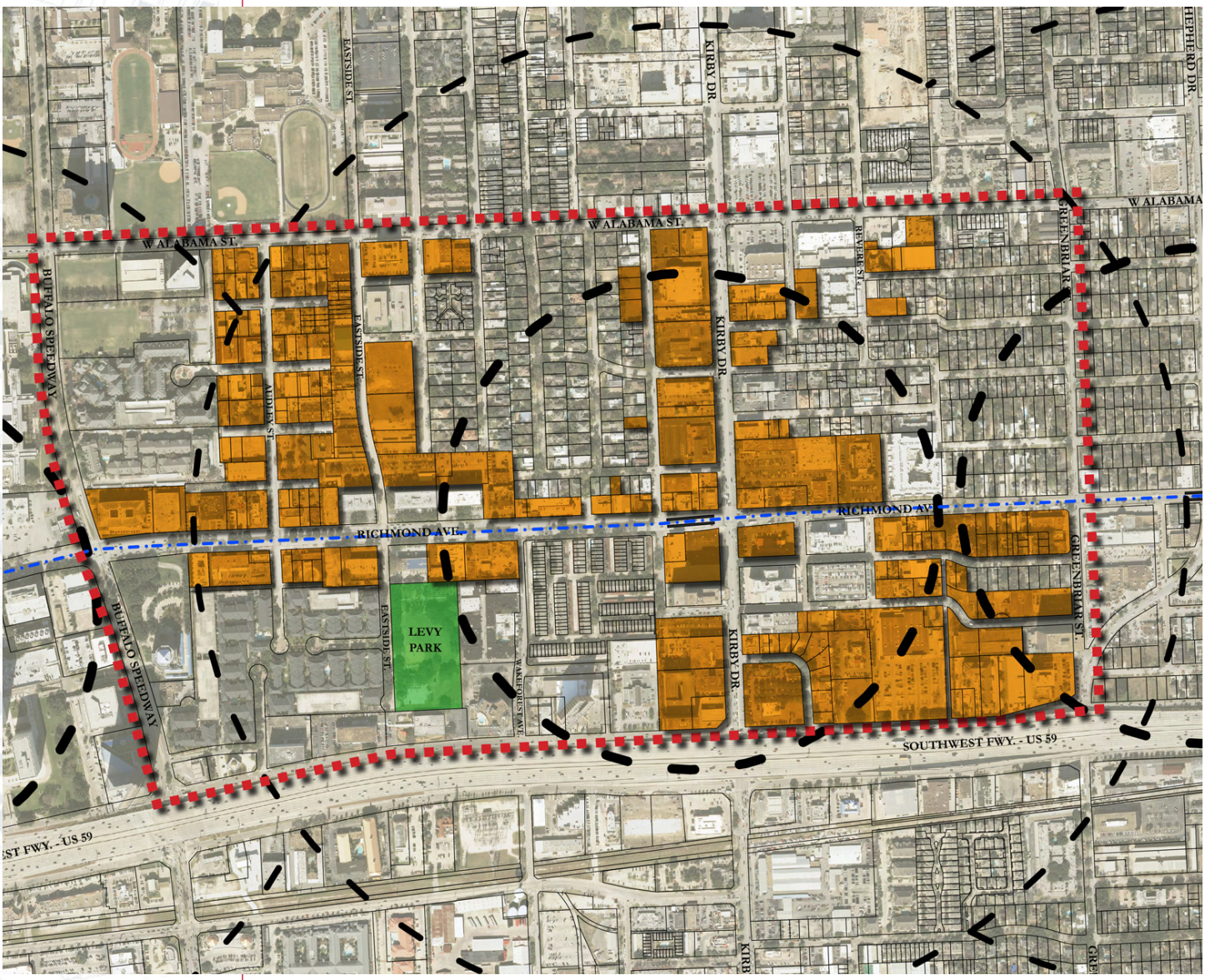


Figure 9 Areas of Opportunity

6. EXISTING OPEN SPACES

PARKS

The Upper Kirby YMCA Extension is located at 3015 Richmond Avenue. Upper Kirby is also home to Levy Park, which features a community garden, a softball field, and a dog park. The only other existing open space areas within the neighborhood are located in the N.W. District. These areas are primarily ballfields used by the local high schools in the area and are not open to the general public. Large portions of the N.W. District, the N.E. District and the S.E. District have a complete lack of open space. With the creation of more mixed-use and higher density residential developments in these areas, opportunities for new parks and public space will need to be identified.

Levy Park is the only substantial public open space in the Study Area

Community gardens, such as this one in Levy Park could be located throughout the Upper Kirby neighborhood.

D. TRANSPORTATION CONDITIONS

I. UPPER KIRBY GROWTH TRENDS

Population and employment in the study area are expected to experience slow annual growth from 2009 to 2035. Population is expected to grow 0 – 0.5%, except for the southeast quadrant of the study area (0.5 – 1.0%). In the near future (2009 – 2025), the population is expected to grow faster east of Kirby. In future years (2025 – 2035), population growth in the study area is expected to slow to under 0.5% annually. This is consistent with a largely built-out area where growth must be accommodated by redevelopment and densification. Employment is expected to grow faster than the area's population, with a growth rate of at least 0.5% and as high as 1.5%. Faster growth is expected in the first forecasted time period of 2009 – 2025.

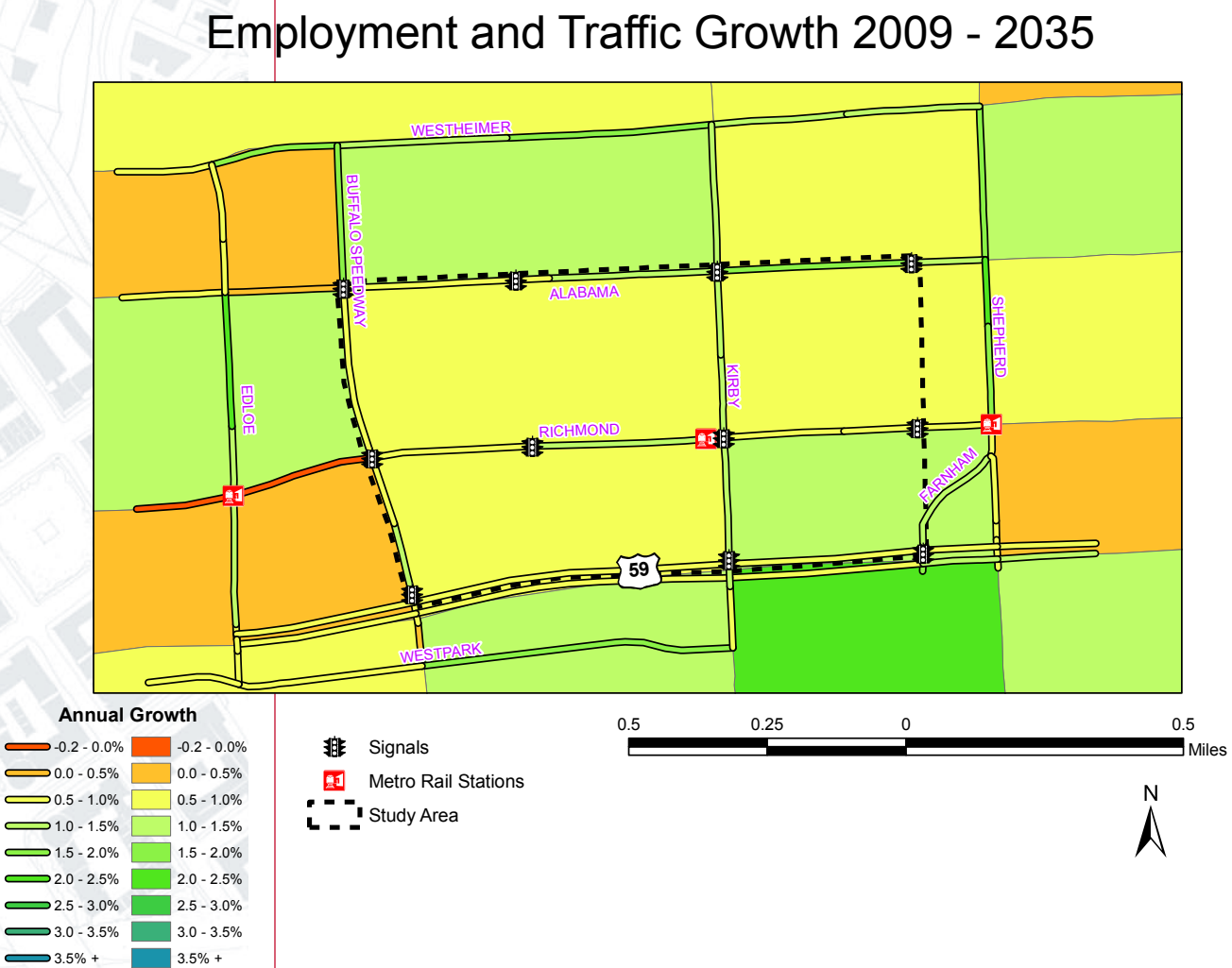


Figure 10 Employment and Traffic Growth 2009 - 2035
Source: H-GAC socioeconomic forecast

Traffic growth mirrors employment growth more than it does population, especially in the first forecasted time period of 2009 – 2025. Areas north of Alabama and south of US 59 are expected to more rapidly than the study area, which would account for traffic growth in the study area that exceeds gains in population and employment.

Population and Traffic Growth 2009 - 2035

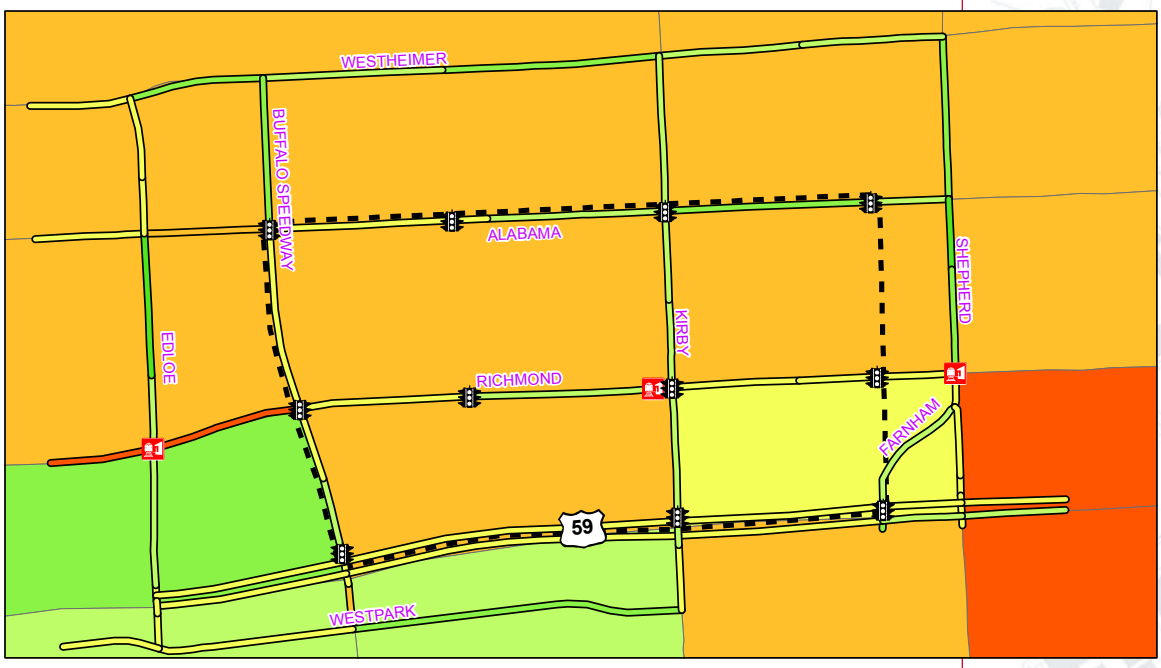


Figure 11 Population and Traffic Growth 2009 - 2035
Source: H-GAC regional traffic demand model

2. EXISTING TRANSIT SERVICE

The bus routes in Upper Kirby have not changed since they were inventoried in the 2003 District Master Plan. Local routes operate in a grid pattern as follows:

- #26 and #27: North-South on Shepherd/Greenbriar
- #18: North-South on Kirby (limited stops)
- #73: North-South on Buffalo Speedway (only south of Richmond)
- #78: East-West on West Alabama
- #25: East-West on Richmond

It is anticipated that the #25 will be eliminated or re-routed when the Richmond Avenue light rail begins operation. Also, there are numerous long-distance express bus routes which serve Greenway Plaza from suburban Park & Ride lots. These buses enter and leave US-59 via either Buffalo Speedway or Edloe and do not serve other parts of the Upper Kirby District.

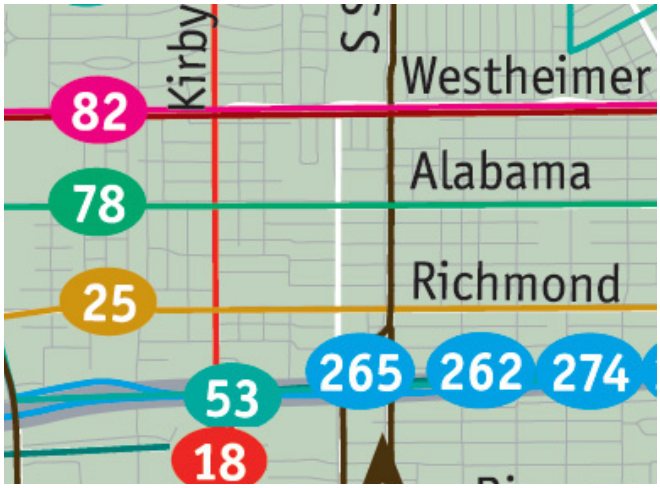


Figure 12 Existing Transit Service in Upper Kirby

3. SIDEWALK CONDITIONS

Sidewalks in all areas are deemed to be either in good condition, poor condition or non-existent; "good condition" means there are no noticeable problems with the sidewalk and "poor condition" means that the sidewalks were cracked, uneven, had tilted/upended concrete, or were mostly covered by surrounding landscaping. Sidewalks along Richmond Avenue where the light rail will be constructed are of low priority for improvements as part of this Livable Centers project, because those sidewalks are going to be replaced when the street is reconstructed to install rail.

The sidewalks near the Upper Kirby station are generally in good condition. The sidewalks along Kirby are in very good condition and the sidewalks on Richmond are in good condition. There are neighborhoods where the sidewalks are not well-maintained such as Lake Street near Alabama. These sidewalks are affected by surrounding landscape from tree roots upending the sidewalk and landscaping growing over the sidewalks. The sidewalks in the southwest quadrant of the intersection of Richmond and Lake are in good conditions but have several locations where trees growing near the sidewalks have roots upending the sidewalk, making travel difficult.

Sidewalks in the N.W. District range from excellent to non-existent

The lack of sidewalks in some areas creates major conflicts between pedestrians and autos

Sidewalk Conditions: Kirby Station

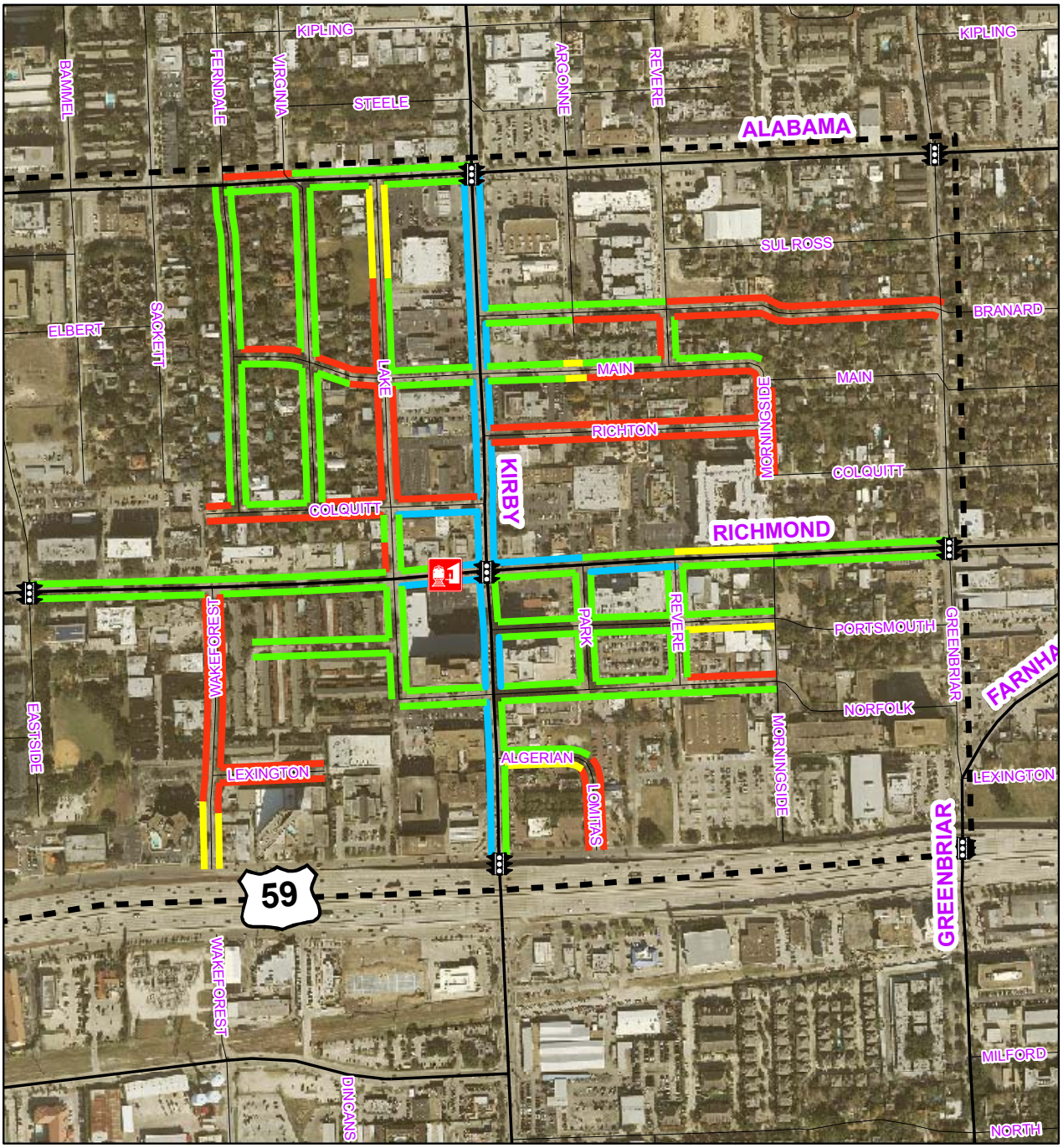


Figure 13 Sidewalk Conditions: Kirby Station
Source: LAN field observations

4. SIGNAL INVENTORY

With the exception of two signals on US 59 that lack pedestrian call buttons, all the traffic signals surveyed in the Upper Kirby study area have all the recommended pedestrian elements, including crosswalk striping, pedestrian call buttons, "walk/don't walk" signal heads with countdown timers, and ADA-compliant curb ramps.. The signals at US 59 and Kirby and US 59 at Buffalo Speedway have heavy vehicle turning movements and the pedestrian phases are programmed into the timing. The only real issue at the signals is that the majority of curb ramps meet only the older, outdated ADA standard. The ramps provide contrasting color but their detectable pavement edge is indicated with grooves rather than the truncated domes called for in the current standard.

Traffic Signals - Upper Kirby							
Street1	**Street2**	**Crosswalks?**	**Ped Buttons?**	**Ped Heads?**	**Countdowns?**	**Ramps?**	**ADA-OK?**
Alabama	**Greenbriar**	Yes	Yes	Yes	Yes	Yes	**No**
Alabama	**Kirby**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
Alabama	**Eastside**	Yes	Yes	Yes	Yes	Yes	**No**
Alabama	**Buffalo Spdwy**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
Richmond	**Greenbriar**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
Richmond	**Kirby**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
Richmond	**Eastside**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
Richmond	**Buffalo Spdwy**	Yes	Yes	Yes	Yes	Yes	**No**
US-59	**Greenbriar**	Yes	**No**	Yes	Yes	Yes	**No**
US-59	**Kirby**	Yes	Yes	Yes	Yes	Yes	**Old Standard**
US-59	**Buffalo Spdwy**	Yes	**No**	Yes	Yes	Yes	**No**

Figure 14 Traffic Signals Inventory
Source: LAN field observations

E. ECONOMIC CONDITIONS

1. TOD MARKET OVERVIEW

A variety of studies illustrate that the introduction of transit can have a significant impact on property values and development activity – however this impact varies widely among station areas, and can be difficult to predict. Three main factors influence the potential for new development and neighborhood change near new transit stations:

- Market demand: Transit alone is rarely enough to "make" a market for development where it does not otherwise exist. Places that are already experiencing development activity or other kinds of investments are more likely to experience market impacts from new transit. Similarly, in urban locations, the introduction of transit does not typically fundamentally alter the kinds of land uses in the station area. Neighborhoods that are primarily residential in character do not typically become employment centers, nor do employment centers change to become primarily residential neighborhoods. Neighborhoods such as Upper Kirby have an advantage in that they are already a center for both residential and office employment, which means that they can leverage transit to enhance demand for a range of uses.
- The nature of development opportunity sites: In growing regions such as Houston, larger infill development sites in central locations can be very desirable development opportunities. Larger sites (at least two to three acres) allow developers to achieve "economies of scale", and are typically more profitable and financially feasible for developers to undertake than smaller infill projects. Additional costs associated with infill development such as removal of existing buildings, environmental remediation, or infrastructure upgrades also have an impact on real estate development potential.
- Accessibility and transit connections: Fundamentally, the value of new transit is the improved access it provides to other places within the transit system. When transit connects a residential area to a major retail, employment, or entertainment cluster, these amenities can influence market activity in the linked housing market. In cases where a major activity center such as the CBD is only a few stops down a transit line, the impact of the connection on the housing market can be strong. However, the more distant the two areas are from each other and the greater the time-savings associated with driving as opposed to transit, the less influence the transit connection will have.

In evaluating the likely impact of transit on existing neighborhoods, it is also important to consider the influence of transit on the travel patterns of existing residents and workers. For employment centers, the type, mix, and growth rate of jobs can play a key role. Workers in certain jobs, including those in professional, technical, or financial services or in insurance, universities, government, or quasi-public agencies, tend to make use of transit at a much higher rate than those who work other industries. The degree to which the employment opportunities found in these activities centers match the skill-base of existing neighborhood residents, the more existing residents will be able to make use of the transit investment to expand their employment access; to the degree that there is a mismatch between these jobs and the skills needed, the neighborhood may be vulnerable to a change in its demographic character.

This report does not address the market for retail uses because they are not typically driven by the presence of transit. However it is important to note that retail and entertainment uses are an important part of a complete TOD community, and demand for retail uses will increase along

with additional office and residential development.

The following sections outline the market conditions in Upper Kirby and describe the likely impact of new transit.

OVERVIEW OF THE MARKET FOR RESIDENTIAL TOD

Nationally, there has been a growing interest among households in living in more transit-oriented and walkable communities, which has been evidenced by the tens of thousands of new condominiums and apartments built near rail systems throughout the United States over the last ten years. While in 2000, only 6 million households lived near transit, the Center for Transit-Oriented Development (CTOD) forecasts that over 15 million households nationally will have an interest in living near transit by 2030, based on recent trends. Figure 15 shows that, while this demand is primarily among single person households, nonfamily households, and married couples without children, one-fifth of demand is among households with children. The diversity of this TOD demand across numerous household types, age groups, and income levels suggests that there is no one-size-fits-all solution to building near transit. Transit oriented development needs to occur with different densities, mix of land uses, and affordability levels in order to accommodate the full range of households interested in living near transit.

The presence of a rail station may draw households that would not otherwise consider living in the Upper Kirby, provided the station area can offer the amenities of an urban lifestyle, including the potential to walk to shopping, services, and entertainment uses.

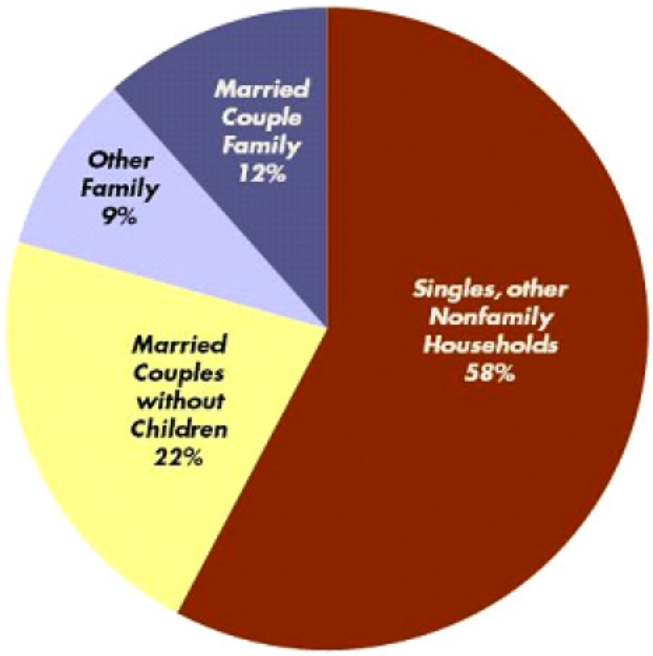


Figure 15 Distribution of National Demand for TOD by Household Type, 2030
Source: Center for Transit-Oriented Development, 2006

2. EXISTING CONDITIONS

The Upper Kirby district is highly diverse in its land uses, featuring a variety of single- and multi-family housing types, office buildings, and community-serving retail. This variety helps to bolster the potential for successful TOD in Upper Kirby as there is a benefit to having a mix of uses such that people can walk to services and retail and entertainment, allowing them to realize value beyond reducing their commute costs. With its position between two of Houston's two largest employment centers (the CBD and Greenway Plaza), the residential components of the neighborhoods stand to benefit tremendously from being on a planned light rail line that will provide a rapid connection to these destinations. In 2009, there were an estimated 4,008 residents of the Upper Kirby district in 2,070 households (Table 1). While the relatively small geography and limited developable land in the district will limit the population growth, it is likely that the neighborhood will become more dense as demand for this prime real estate increases following the implementation of transit. The area's current demographic characteristics and trends yield insight into the form that the redevelopment may take.

HOUSEHOLDS ARE SMALLER THAN AVERAGE FOR HOUSTON

Whereas the average household size in 2009 in Houston was 2.72 and in the Houston metropolitan area was 2.85, the households in the Upper Kirby district averaged 1.57 (Table 1 and Figure 16). Similarly, households in the neighborhood are composed of Singles or other Non-Family Households at nearly twice the rate of the rest of the city (Table 3 and Figure 18). This indicates that the neighborhood is already hospitable to households that are attracted to dense, multi-family housing. In addition, these are demographic groups that tend to be attracted to TOD as a lifestyle, suggesting that these building and unit types will be even more in demand following the introduction of light rail service.

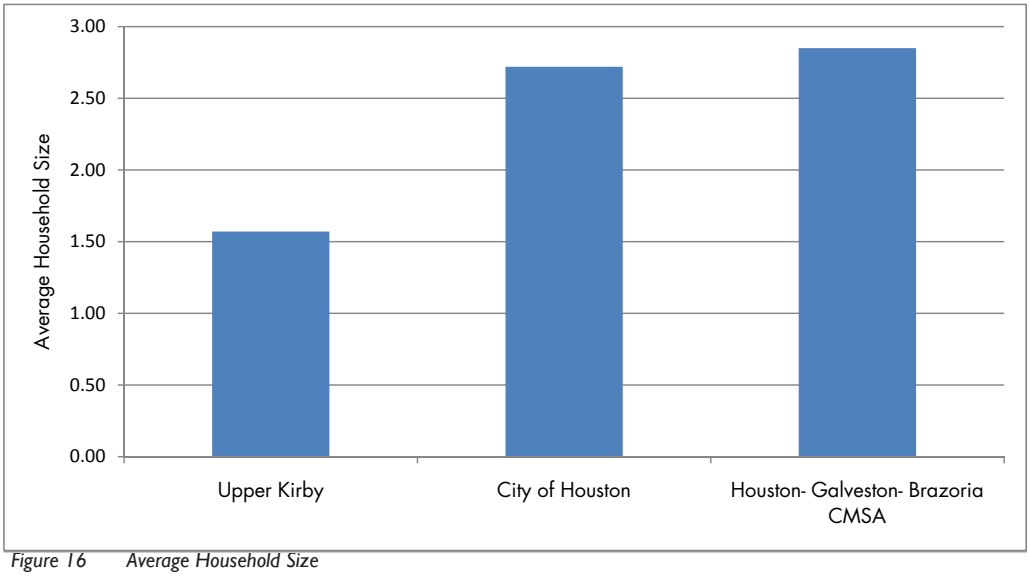


Figure 16 Average Household Size
Source: Claritas, 2009, Strategic Economics, 2009

THE POPULATION AND NUMBER OF HOUSING UNITS GREW CONSIDERABLY FROM 2000 TO 2009

From 2000 to 2009, the population of the Upper Kirby District grew by 22 percent, a rate that was far greater than that of Houston as a whole (14 percent), (Table 1 and Figure 17). Similarly, the number of housing units grew by 27 percent, a rate greater than that of both the city and the region as a whole (Table 2). However, because housing construction outpaced even the robust population growth, the vacancy rate also increased, and was estimated at 16 percent in 2009.

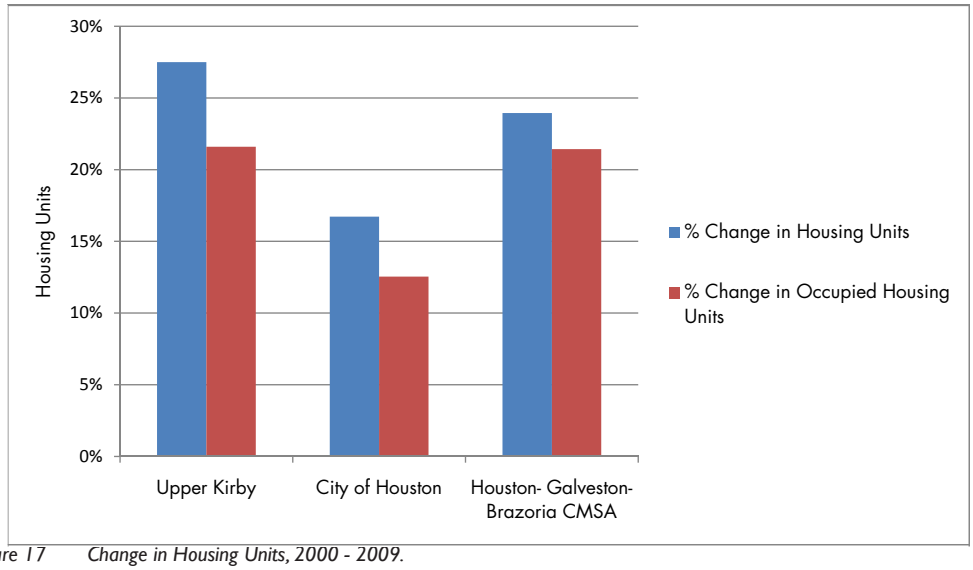


Figure 17 Change in Housing Units, 2000 - 2009.
Source:Claritas, 2009, Strategic Economics, 2009

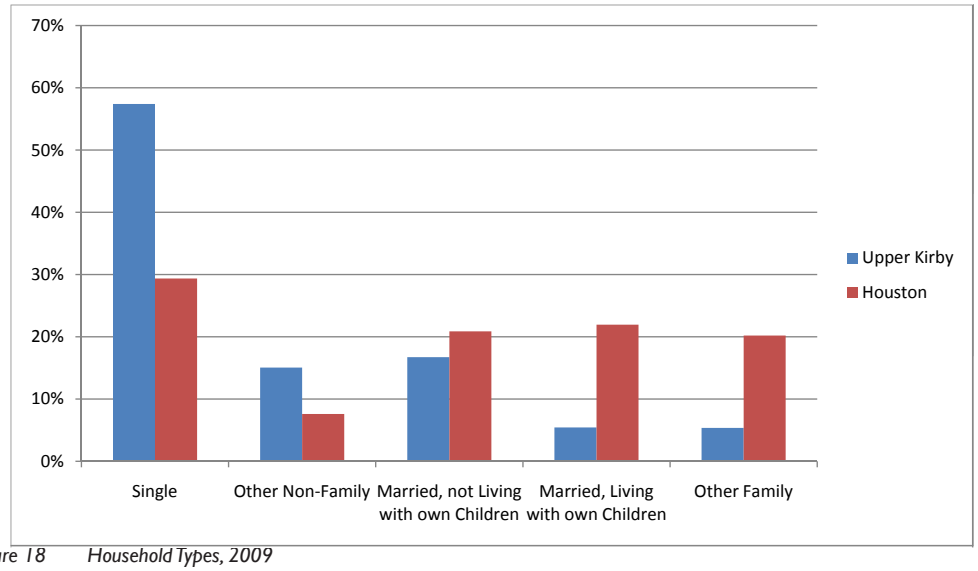


Figure 18 Household Types, 2009
Source:Claritas, 2009, Strategic Economics, 2009

HOUSEHOLDS IN THE UPPER KIRBY DISTRICT TEND TO BE WELL-EDUCATED, AND WORK IN JOBS THAT ARE LIKELY TO BE LOCATED IN DOWNTOWNS AND OTHER HIGH-VALUE EMPLOYMENT CENTERS

More than 70 percent of residents over the age of 24 had a bachelor's degree or higher in 2009 This is dramatically greater than that of Houston as a whole, wherein only 27 percent of this population earned a bachelor's degree or higher. These educational characteristics are compatible with high-density office jobs, such as those that are, or will be, clustered along the light rail system, (Table 4 and Figure 19).

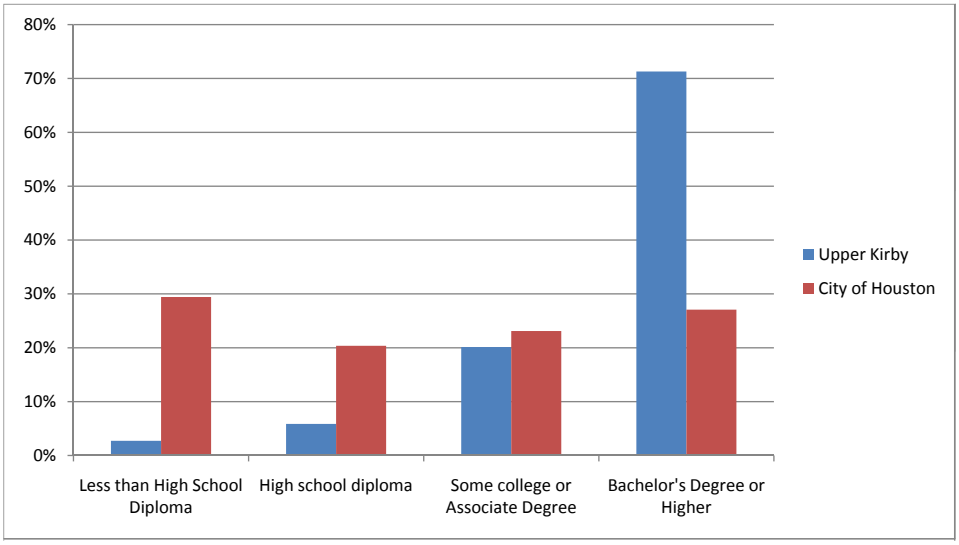


Figure 19 Educational Attainment, 24 Years and Older, 2009
Source: Claritas, 2009, Strategic Economics, 2009

Two thirds of Upper Kirby residents work in Management, Professional, and Related Occupations. This is nearly double the rate that these jobs occur in the region as a whole. As with educational attainment, this suggests that Upper Kirby residents are likely to be able to access jobs of the sort that are most likely to be located near current or future light rail stations, (Table 5 and Figure 20).

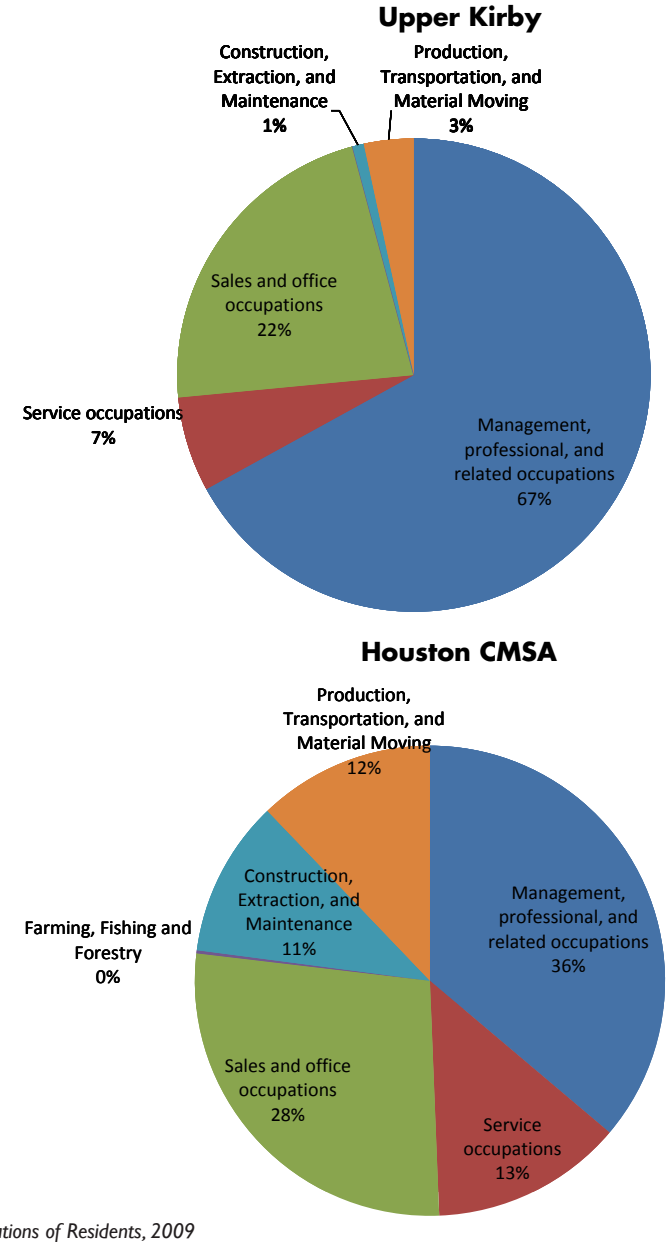


Figure 20 Occupations of Residents, 2009
Source: Claritas, 2009, Strategic Economics, 2009

A MUCH SMALLER SHARE OF UPPER KIRBY RESIDENTS ARE UNDER THE AGE OF 25 THAN IS TYPICAL FOR HOUSTON

In 2009, only 13 percent of the population of Upper Kirby was under 25, compared to 37 percent in either the city or metropolitan area (Table 6 and Figure 21). This suggests that, despite the prevalence of singles and non-family households, the population of students, recent college graduates, and other young adults is relatively small.

HOUSEHOLDS IN THE UPPER KIRBY DISTRICT HAVE ABOVE-AVERAGE INCOMES

In 2009, the median household income for the neighborhood was $70,620, well above the metropolitan area median household income of $55,113. Thirty-four percent of households had incomes of more than $100,000, compared to 23 percent of households in the metropolitan area (Table 7 and Figure 22).

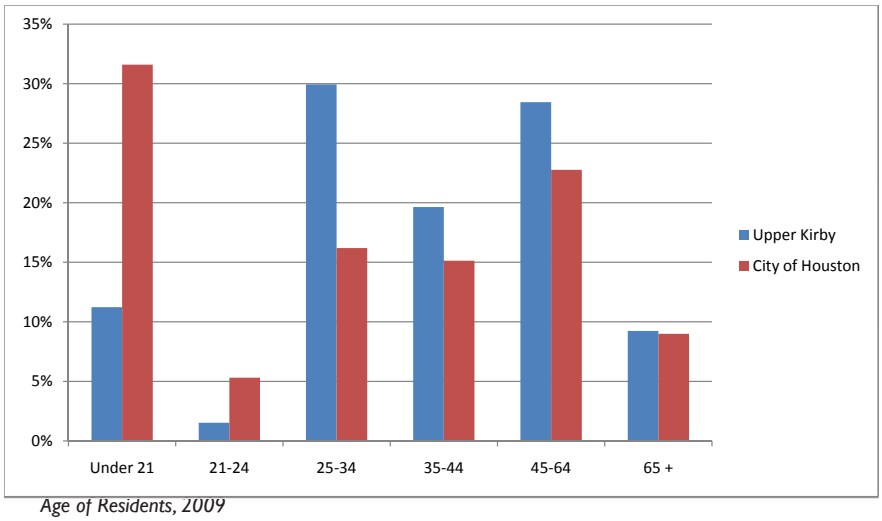


Figure 21 Age of Residents, 2009
Source: Claritas, 2009, Strategic Economics, 2009

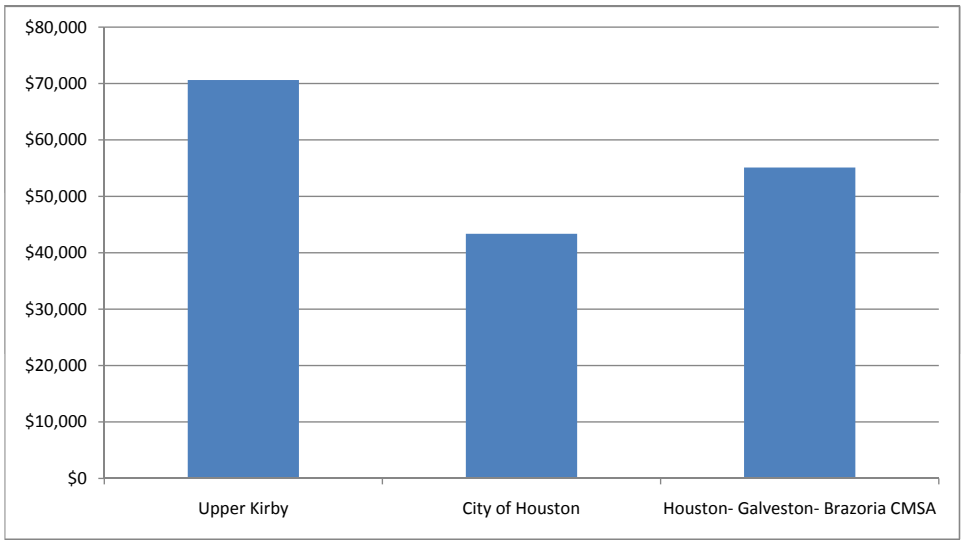


Figure 22 Median Household Incomes, 2009
Source: Claritas, 2009, Strategic Economics, 2009

CURRENT COMMUTE PATTERNS FOR RESIDENTS RELATIVELY CONCENTRATED IN CENTRAL HOUSTON, ESPECIALLY ALONG CURRENT AND FUTURE LIGHT RAIL LINES

25 percent of Upper Kirby residents work in one of two zip codes: one is associated with Greenway Plaza and the other with the CBD, (Tables 8-10). In general, as shown in Figure 23, the employment locations of residents are highly clustered, generally in locations that are, or will be, served by the light rail. This indicates that the existing housing stock in Upper Kirby is compatible with workers who are likely to take advantage of the introduction of light rail. This also suggests that these units will be in higher demand once light rail is implemented.

Although there has been a marked growth in its residential population since 2000, there are still far more jobs located within Upper Kirby than there are residents. As of 2006, there were 10,827 jobs located in the neighborhood, representing a wide range of industries (Table 11). Administration and Support Services represent the largest sector, with 22 percent of total employment. However, the vast majority of jobs fall into more exclusively white-collar, office-based professions, such as Professional, Scientific, and Technical Services (16 percent), Real Estate and Rental and Leasing (15 percent), and Finance and Insurance (5 percent). Other sectors with at least 500 jobs in the area include Accommodation and Food Services (13 percent) and Health Care and Social Assistance (7 percent).

In contrast to the commute patterns for Upper Kirby residents, Upper Kirby workers tend to drive from a fairly diffuse area (Figure 24). While most of the area's workers live in the southeast quadrant of the metropolitan area, they are not concentrated along the future light rail lines. In fact, as shown in Tables 12-14, more than 40 percent of Upper Kirby workers live outside of the city of Houston, including 20 percent that live outside of Harris County.

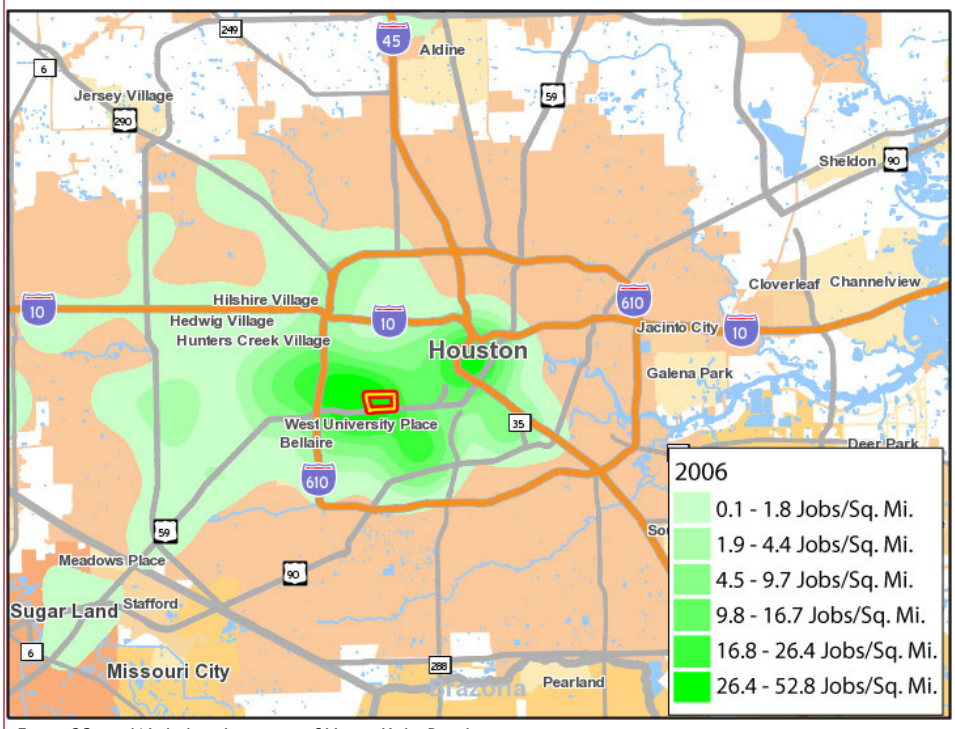


Figure 23 Workplace Locations of Upper Kirby Residents
Source: LEHD 2006, Strategic Economics, 2009

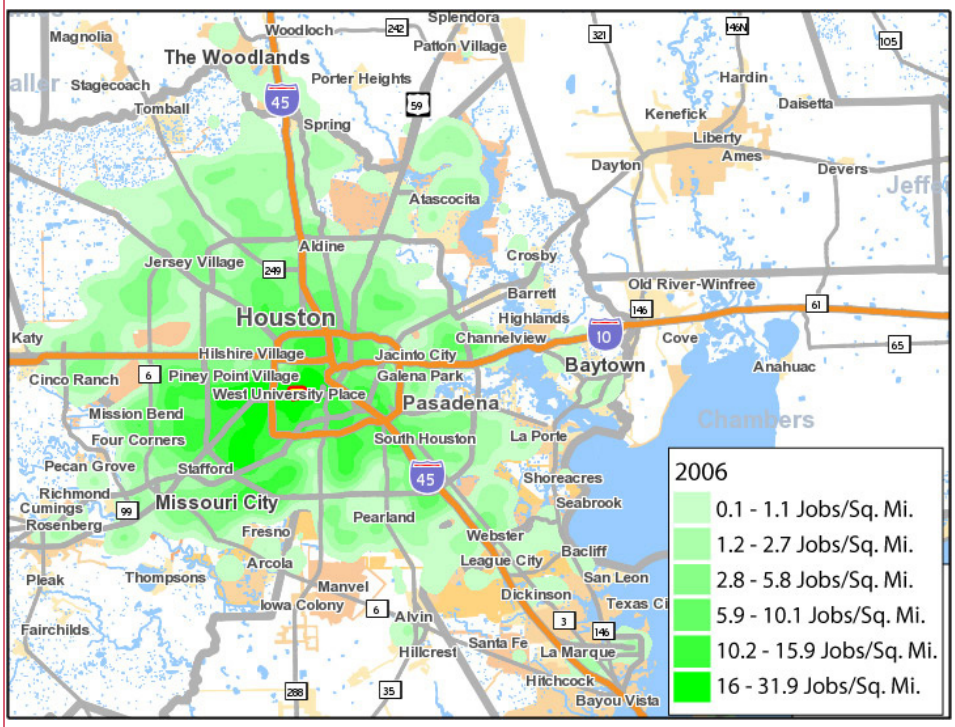


Figure 24 Residences of Upper Kirby Workers
Source: LEHD 2006, Strategic Economics, 2009

3. RECENT DEVELOPMENT ACTIVITY AND TRENDS

In recent years, development in Upper Kirby has been robust. While jobs still outnumber households by five-to-one, the large quantity of residential development suggests that the area is transitioning to a more mixed-use neighborhood. Four major developments that have been completed (Alexan Upper Kirby, La Masion, Gables Upper Kirby, and the Bellemeade) represent a total of approximately 1,000 new units. In addition, another 370 residential units are under construction in conjunction with an additional 180,000 square feet of retail and 16,000 square feet of office.

This transition to a more residential-oriented neighborhood through private development is supported by a number of public investments in civic spaces and streetscape and infrastructure improvements. The most significant of these is the proposed Upper Kirby Civic Center and Levy Park extension. In addition to this major investment, money collected by the Tax Increment Reinvestment Zone (TIRZ) has been used to make significant improvements to Levy Park, install way-finding signage, conduct mobility and draining planning and improvements, and implement and maintain landscaping.

One challenge to new development is the City of Houston's building ordinances, which allow little flexibility in their high parking minimums and building set-backs. This increases the cost of construction and decreases the number of units that can be fit into a given building envelope. With these constraints, a developer must be able to achieve much higher prices per unit in order to make a profit on new construction. Often these prices are greater than the market will bear, which discourages new development. Even when development can occur in this environment, the reduced potential residential population and increased parking leads to suppression in transit ridership.

While there has been a major downturn in the residential market nationally, Houston's market has been relatively resilient, with only minor slowdowns in development. In terms of its office market, however, Houston has been hit hard; this has been especially true of the areas adjacent to Upper Kirby. Due to its proximity, the office market in Upper Kirby is partly tied to that of Greenway Plaza, with office space in Upper Kirby commanding slightly lower rents but offering access to a similar set of amenities. In the current market downturn, vacancy rates have risen considerably in Greenway Plaza, approaching 17 percent in the third quarter of 2009. This is a result of two factors: first, contraction in employment has resulted in a reduction of demand for office space region-wide; secondly, there has been a shift in demand from more peripheral office centers, such as Greenway, to the (CBD). Overall, this increase in vacancy rates has resulted in a rapid decrease in rents- among the ten biggest employment clusters in the Houston metro area, Greenway Plaza had the second largest percent decline in rents from 2008 to 2009. Cheaper rents and higher vacancy rates in Greenway Plaza will have a ripple effect, as firms that would have previously been attracted to the Upper Kirby market will instead be able to afford the more highly demanded spaces in Greenway Plaza.

1 Marcus & Millichap. "Office Research, Market Update: Houston Metro Area, Fourth Quarter 2009"

4. KEY MARKET FINDINGS

UPPER KIRBY IS WELL-POSITIONED TO CAPTURE DEMAND FOR RESIDENTIAL TRANSIT-ORIENTED DEVELOPMENT

With its location very near several major, high-density employment centers, the residential market in Upper Kirby is already strong. Current commute patterns suggest that Upper Kirby is already an appealing neighborhood to live for employees working in Greenway Plaza, the CBD, and the Texas Medical Center. Once these jobs are connected by short trips on light rail, the neighborhood will become even more attractive to these office-based workers, who on average elect to commute by transit at a much higher rate than other types of workers. Although Upper Kirby has a significant stock of vacant units that will need to be absorbed in order to encourage developers to continue the rapid pace of residential construction, there is potential for high-density development near the future station areas.

HOUSING UNITS THAT CATER TO SMALL HOUSEHOLDS WILL BE MOST IN DEMAND

As mentioned above, commute patterns suggest that Upper Kirby is already successful at attracting workers in the employment centers that will soon be connected by light rail. This suggests that the population that will be drawn to the neighborhood due to its new transit service will be fairly similar to the existing population, which is largely composed of singles and non-family households. Consequently, smaller housing units will be most in demand for new development, as well as in terms of existing housing units.

THE UPPER KIRBY CIVIC CENTER HAS THE POTENTIAL TO SERVE AN IMPORTANT ROLE IN DEFINING THE AREA AS A RESIDENTIAL NEIGHBORHOOD

The residential population is growing and stands poised to continue to flourish following the introduction of light rail. The Civic Center will be an important amenity for a successful walkable TOD neighborhood, playing an important role as a "social seam" that brings residents together. It may also help to define the neighborhood as distinct from adjacent commercial centers, helping to support a transition to a residential-oriented community. In addition, if commuters are allowed to purchase permits to park in the Civic Center's garage, the investment may also address the potential for increased traffic associated with residents of adjacent neighborhoods searching for on-street parking near future light rail stations. Finally, as per Birch and Wachter (2008), these sorts of investments, including neighborhood greening and enhancement of commercial corridors, can have significant impacts on property values.

WHILE THERE IS LONG-TERM POTENTIAL FOR ADDITIONAL OFFICE SPACE TO BE SUCCESSFUL, THIS MARKET IS NOT AS STRONG AS THE RESIDENTIAL MARKET IN THE NEAR TERM

As a consequence of the weak office market in Houston and especially Greenway Plaza, the market for new office space in Upper Kirby will be much weaker than of residential space over the next several years. It will take time for the market to rebound such that it is feasible to redevelop the older office space along the commercial corridors. Nevertheless, in the long run, the enhanced access to office clusters that will be provided by the light rail service will improve the likelihood that the development of higher density modern office spaces in Upper Kirby will be successful.

PLAN OVERVIEW

A. INTRODUCTION

This section describes the key elements of the Preferred Conceptual Plan in terms of overall focus topic. Many of these elements are identified for public improvements within section IV Implementation Roadmap and section V Public Improvements – Project Cut Sheets. These elements, when taken as a whole, create the overall community vision of Upper Kirby as a place with a strong local identity that is economically healthy, vibrant, connected, walkable, and green.

- Elements that are "Planned" have been developed outside the Livable Centers Study
- Elements that are "Proposed" are recommendations of the Livable Centers Study

Current residents could benefit greatly from new neighborhood services, retail, transit access and other ammenities.

The Livable Centers Study will help to create a sense of shared identity and enhance civic pride.

Figure 25 Overall Structure

B. OVERALL STRUCTURE

1. METRORAIL

The new MetroRail corridor along Richmond Avenue is the "backbone" for the Livable Centers Study. Improved transit access will help to weave together the various sections of the Upper Kirby neighborhood as well as create stronger connections to Downtown Houston and the region as a whole. The Livable Study aims to encourage safe, vibrant transit-oriented development in key locations within walking distance of the MetroRail line.

The Livable Centers Studies seek to improve mobility and reduce congestion in the region

New development in the Livable Centers should be compact, mixed use and walkable.

2. MAJOR AND MINOR NODES

Nodes are defined as centers of activity, with active functions that are primary junctions, places of crossing and the convergences of paths. Nodes within Upper Kirby are currently defined by major intersections. These nodes, many of which have potential mixed-use development opportunities include the following:

- West Alabama Street and Buffalo Speedway: This minor node has a strong education emphasis as a key entry way to Lamar High School. Improvements in this area will focus on safer crossings for students, faculty and visitors to the school.
- Richmond and Buffalo Speedway: This minor node symbolizes the connection between Upper Kirby and the growing Greenway Plaza area.
- Kirby Drive and Richmond Avenue: This major node is one of the most important intersections in the District. With the planned MetroRail station just one block west, there is strong redevelopment potential in this area.
- Kirby Drive and West Alabama Street: This major node is another key neighborhood intersection with several recently-built commercial buildings. This node is just outside the ¼ mile TOD area and will likely have less direct correlation to the planned MetroRail line.

Kirby Drive and Richmond Avenue birds eye view.

Kirby Drive and W. Alabama Street birds eye view.

3. MAJOR DESTINATIONS

Most of the major destinations in Upper Kirby are directly outside of the Study area. These include the new West Ave development at Kirby and Westheimer Road, The Whole Foods Market at Kirby Drive and West Alabama Street, Lamar High School and Greenway Plaza. The most important major destination within the Study area is Levy Park, located just south of Richmond Avenue and east of Eastside Street. Many of the streetscape concepts defined in this study seek to create safer and more attractive pedestrian connections to these important destinations. For more details on individual connections, please see section V Public Improvements.

4. MAJOR NEIGHBORHOOD ENTRANCE

The Livable Centers Study identifies three key neighborhood entrances that should be improved and celebrated. These entrance include Interstate 59 and Buffalo Speedway, Interstate 59 and Kirby Drive and Interstate 59 and Greenbriar Street. Each of these entrances are primarily auto-oriented in nature. Improvements should focus on improving safety and the overall pedestrian experience in order to create a stronger link to areas south of Interstate 59. In the short-term The Livable Centers Study recommends focusing public investment to the interior of the Upper Kirby District and improving neighborhood entrances in the mid and long-term.

Interstate 59 at Kirby Drive - Existing View

Levy Park is a major destination

Figure 26 Connectivity and Circulation

C. CONNECTIVITY AND CIRCULATION

I. MAJOR ARTERIAL ROADS

Major arterial roads within the Study area include Buffalo Speedway, Eastside Street, Kirby Drive and Greenbriar Street running north-south and West Alabama Street, Richmond Avenue, and US 59 running east-west. Typically, these streets are spaced about less than ¼ of a mile apart forming a framework for the grid of internal urban residential streets. Many of the streetscape concepts described in section V. Public Improvements are focused on these Major arterial roads.

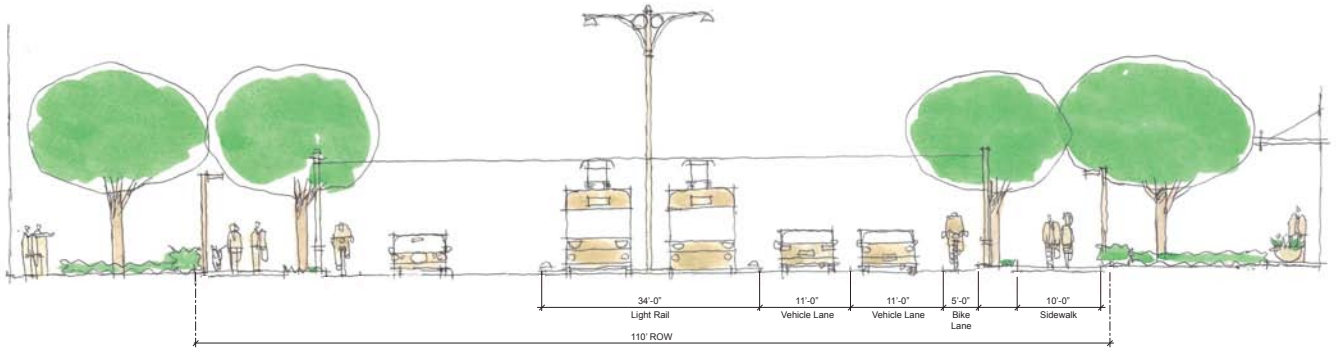


Figure 27 Streetscape Improvement Concept for Richmond Avenue

2. PROPOSED STREET CONNECTIONS

The Upper Kirby District lacks a complete grid of interconnected streets and pedestrian connections apart from the major arterial roads. The City of Houston is not currently planning any new street connections within the Upper Kirby District.

The Livable Centers Study proposes a series of street connections throughout Upper Kirby. Each of these planned street connections is intended to help integrate the neighborhood with major destinations, job centers, shopping opportunities and gathering places. As properties redevelop over time, the Management District and City should focus on creating these connections to help weave together the overall connectivity fabric. The connections detailed in this section can either be complete streets for autos, bicyclists and pedestrians or simply pedestrian and bicycle pathways. The Study proposes that the Upper Kirby Management district create and implement a "Pedestrian Linkages and Wayfinding Plan" building off of the recommendations of the Study. Please see section IV Implementation Roadmap for more information on this key next step.

- Kirby Drive Corridor: The Study recommends new east-west connections between Kirby Drive and Lake Street at Branard Street and at Richton Street. The Study also recommends a connection between Kirby Drive and Park Street at Colquitt Street.
- Northwest District: The Study proposes a new north-south street a block west of Audley Street as well as new connections from Eastside Street at Sul Ross Street, Elbert Street, Harper Street, West Main Street, Bammel Lane and Colquit Street. Additional new connections are recommended between Ballem Lane and Sackett Street and Sackett St, Colquit Street and Richmond Avenue. The Study also recommends creating a connection on Branard Street between Audley Street and Eastside Street. In order to provide access and integration to Gallery Row along Coquitt Street, the Study recommends the establishment of a connection from Richmond Avenue and the planned MetroRail station in the near-term (0-5 years)
- Southwest District: The Study recommends a new north-south connection between the Interstate 59 Frontage Road and Lake Street. The Study also proposes east-west connections between Norfolk and Audley Streets and from Wakeforest Street to the multi-family to the east. Also recommended is an extension of Lexington Street east to Lake Street.
- Northeast District: The Study recommends an extension of Argonne and Revere Streets south to connect to Richmond Avenue along with an connection of Morningside Drive to Sul Ross Street.
- Southeast District: The Study recommends extending Park Street south to connect with Lomitas Street and east to Revere Street. Revere Street should also be extended south to the Interstate 59 Frontage Road. A small connection is also recommended on Morningside Drive between Portsmouth Street and Richmond Avenue.

3. BUS ROUTES

Bus routes currently exist on many of the major arterials through the Upper Kirby neighborhood including West Alabama Street, Buffalo Speedway, Richmond Avenue and Kirby Drive. It is anticipated that Metro's 25 bus along Richmond Avenue will be replaced by the planned MetroRail line. The Study recommends general reconfiguring of bus routes to help feed into new MetroRail stations from surrounding neighborhoods as much as possible.

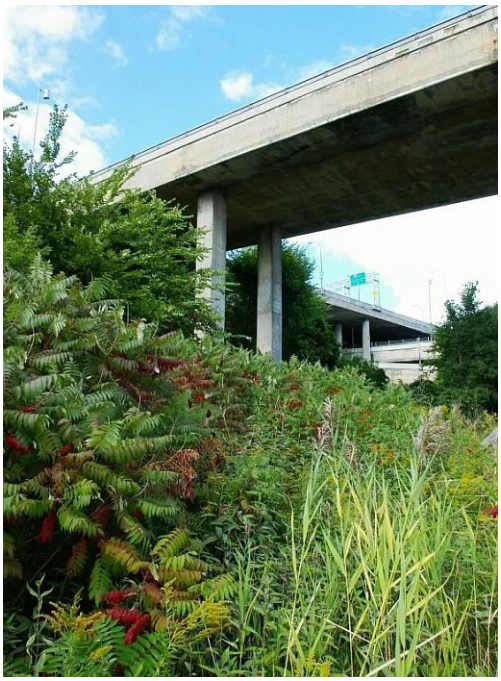
Figure 28 Pedestrian and Bicycle Amenities

D. PEDESTRIAN AND BICYCLE AMENITIES

By promoting improved pedestrian and bicycle amenities, the Study builds off of the previous Mobility Improvement Plan's goal of enhancing the quality of the pedestrian environment in the Upper Kirby District. The Study includes a variety of conceptual streetscape improvements created to promote a vibrant walkable environment in the District. These improvements are detailed in section V. Public Improvements.

1. BARRIER - HIGHWAY

Interstate 59 acts as major neighborhood barrier to the south due to its physical configuration, noise and psychological perception. The Study recommends safe and attractive pedestrian crossings at Buffalo Speedway, Kirby Drive and Greenbriar Street through better lighting and cleaning programs. The Study also recommends streetscape improvements along the Interstate 59 Frontage Road in order to create a more positive experience for pedestrians in this area. Improvements to the Interstate 59 Frontage Road are detailed in section V. Public Improvements.



Improvements to the Interstate Frontage Road.

Variety of conceptual streetscape improvements to promote a vibrant walkable environment in the District

2. ENHANCED SIDEWALKS

Throughout the Study area, enhanced sidewalks are needed to replace dilapidated, overly narrow or non-existent current sidewalks. The Study builds off of the previous Mobility Improvement Plan and recommends focusing enhanced sidewalks along many existing arterials as well local north-south streets such as Audley Street, Eastside Street, Lake Street and Park Street. Enhanced sidewalks include wider walking areas, varied paving patterns, street trees, benches and other street furniture and new lighting. Specific recommendations and conceptual streetscape elements are described in section V. Public Improvements.

Enhanced sidewalks include wider walking areas, varied paving patterns, street trees, benches and other street furniture and new lighting.

Enhanced sidewalks are needed to replace dilapidated, overly narrow or non-existent current sidewalks.

3. BIKE ROUTES

The Houston Bicycle Master Plan does not recommend any bicycle improvements within the Study area. In order to create safe connections through the neighborhood, the Study recommends the following bicycle routes be implemented. For more detail on these recommendations, please see section V. Public Improvements:

- Bicycle lane along West Alabama Street: This corridor previously had a bicycle lane which was removed for auto improvements. The re-creation of a lane along West Alabama Street would be a key east-west route along the northern boundary of the Study area, helping to connect surrounding neighborhoods and Lamar High School to the proposed bike route on Eastside Street as well as to shopping and employment uses on Kirby Drive.
- Bicycle path along Eastside Street: The Study recommends this important north-south connection to create access to the Civic Center District including Levy Park as well as Richmond Avenue and the planned MetroRail Station. The configuration of this bike route is proposed as a shared bicycle/pedestrian path separated from auto traffic.
- Bicycle lane along Richmond Avenue: The Study recommends a bicycle lane on Richmond Avenue as an important east-west corridor through the Upper Kirby District as well as an important intermodal link to the planned MetroRail Station.

Create safe connections through the neighborhood.

Proposed bike route as a shared bicycle/pedestrian path separated from auto traffic.

4. PEDESTRIAN CONNECTIONS

Connecting neighborhoods to retail uses, employment centers, open space and the planned MetroRail station is a major goal of this Study. For recommendations on new neighborhood connections, including both complete streets and pedestrian / bicycle paths, please see section III.B.2 Proposed Street Connections. In addition to these recommendations, the Plan proposes establishing direct pathways and visual connections to Levy Park from Richmond Avenue. As the "heart" of Upper Kirby, Levy Park needs better integration into its surrounding context. These new connections can be partially established in the short-term through easements along Richmond Avenue and can be formally created as properties redevelop over time.

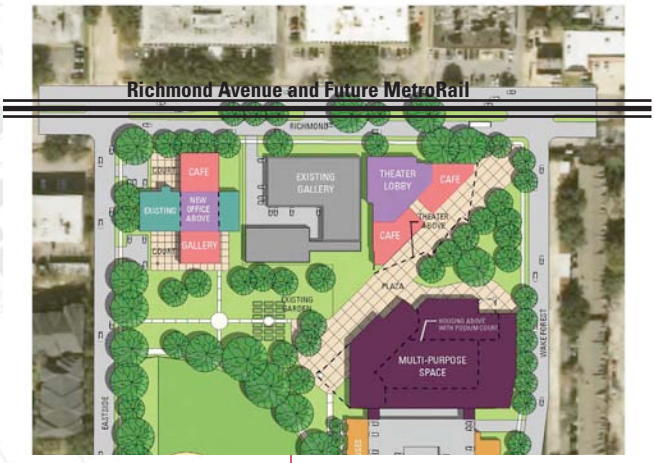


Figure 29 Conceptual design option showing new connections to Levy Park from Richmond Avenue.

Connecting neighborhoods to retail uses, employment centers, open space and the planned MetroRail station is a major goal of this Study.

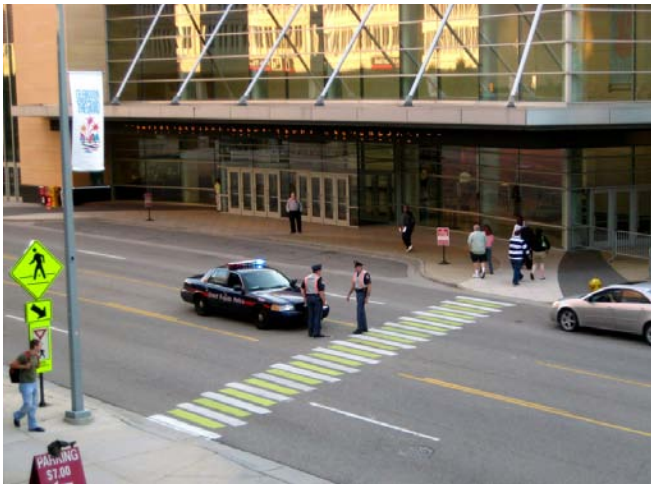
5. SIGNALIZED INTERSECTIONS

Signalized auto intersections currently exist along many of the neighborhood's arterial streets. The Study does not recommend any additional signalized auto intersections in the Upper Kirby area.

6. PEDESTRIAN ACTIVATED CROSSWALKS

A key principle of the Study, as desired by the community, is safe and efficient crossings of the MetroRail tracks along Richmond Avenue. Additional crossings are also desired along Kirby Drive. Pedestrian Activated Crosswalks are currently planned in conjunction with most MetroRail stations along the corridor. In addition to these planned connections, the Study recommends additional Pedestrian activated crosswalks at the following locations:

- Lake Street and Richmond Avenue: A signalized pedestrian crossing at this location would help to proved greater access at to the MetroRail platform and proposed transit plazas as well as the Gallery Row sub-district.
- Park Street and Richmond Avenue: An unsignalized pedestrian crossing at this location would help to integrate the Southeast District with the Northeast District through a safe crossing of Richmond Avenue.
- Revere Street and Richmond Avenue: An unsignalized pedestrian crossing at this location would help to integrate the Southeast District with the Northeast District through a safe crossing of Richmond Avenue.
- West Main Street and Kirby Drive: A signalized pedestrian crossing at this location would help to proved greater access across Kirby Drive at the midpoint between Richmond Avenue and West Alabama Street.
- Norfolk Street and Kirby Drive: A signalized pedestrian crossing at this location would help to proved greater access across Kirby Drive at the midpoint between Richmond Avenue and Interstate 59. This crossing would also help transit riders access the existing bus stop at this location.



An unsignalized pedestrian crossing providing a safe crossing of Richmond Avenue.

Safe and efficient crossings of the MetroRail tracks along Richmond Avenue.

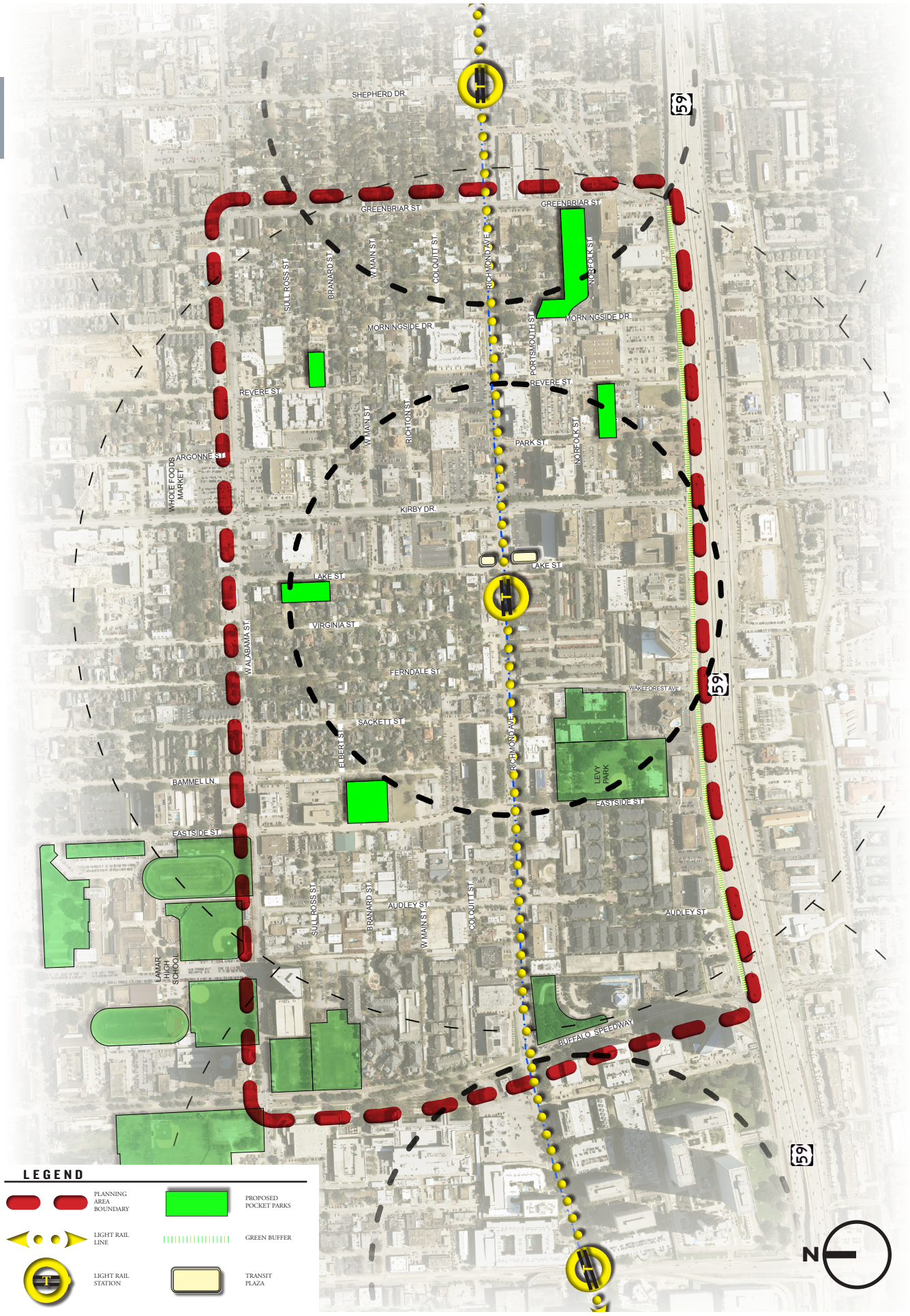


Figure 30 Parks and Open Space

E. PARKS AND OPEN SPACE

I. TRANSIT PLAZAS

Transit plazas are small gathering places near rail stations that can act as important gateways and gathering places for neighborhoods. These spaces can be designed with seating, public artwork, space for vendors, shade structures, fountains and other placemaking elements. The plazas can also be designed to have kiss and ride spaces and bus stops that allow integration with the planned MetroRail line. By promoting attractive transit plazas at the proposed MetroRail Station, the Study builds off of the previously-established Plan Principle from the Urban Design Master Plan: "Enhance Upper Kirby's visual image and identity." The study recommends transit plazas at the following locations. For more detail on these recommendations, please see section V. Public Improvements:

- Northeast corner of Lake Street and Richmond Avenue: The Study recommends the creation of a transit plaza on the vacant site at this intersection. This plaza would include seating areas and kiss and ride spaces for easy drop offs and pick ups. As a gateway to the Gallery Row subdistrict, this plaza should have a strong public art component to symbolize the creative character of the surrounding neighborhood.
- Southeast corner of Lake Street and Richmond Avenue: The Study recommends a wider sidewalk, seating, pedestrian lighting and kiss and ride spaces at this location.

Create a transit plaza on the vacant sites to include seating areas, cafes and kiss and ride spaces for easy drop offs and pick ups

The Study recommends a wider sidewalk, seating, pedestrian lighting and kiss and ride spaces.

2. LEVY PARK IMPROVEMENTS

Levy Park has been recognized as the "heart" of Upper Kirby. It is recommended as a key next step in the Study to establish the Civic Center project as a key transit-oriented development and prioritize streetscape improvements in the Civic Center subdistrict. These improvements should be coordinated with a possible redesign of Levy Park to create a more usable gathering place in the center of the Civic Center District. Visual and pedestrian connections should also be created to Richmond Avenue in order to provide better access and identity for the Park.

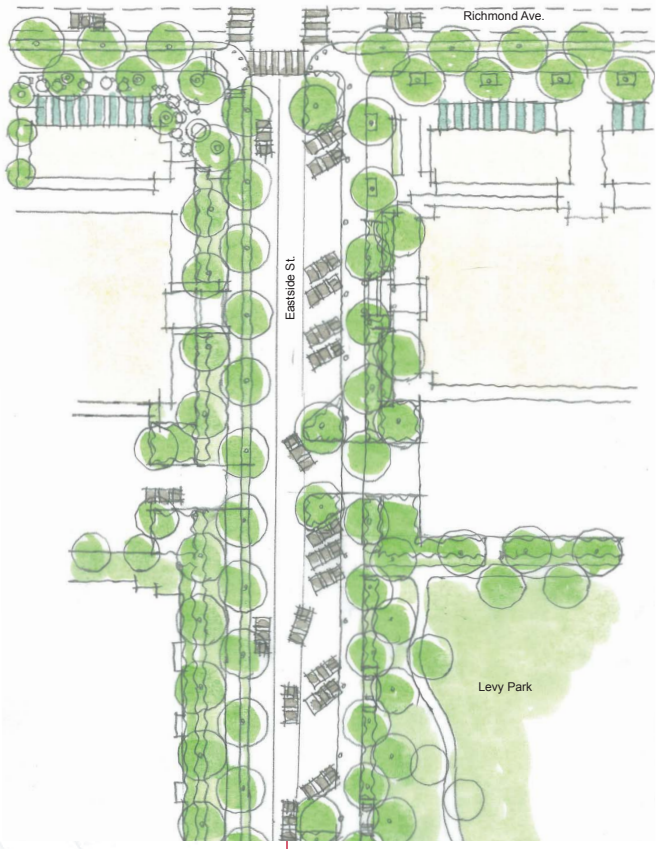


Figure 31 Relation of Levy Park with Eastside Street

Figure 32 Conceptual design option showing Civic Center project as a key transit-oriented development and prioritize streetscape improvements in the Civic Center subdistrict.

3. PROPOSED PARKS

As the Upper Kirby neighborhood grows over time, more open spaces are going to be needed for both active and passive uses. The Study recommends the creation of small parks throughout the neighborhood. The intent of the recommendations shown in Figure 30 is not to propose exact locations, rather it is to show where vacant or underutilized property may be available within neighborhoods that currently lack open space within the Study Area.

The Study recommends the creation of small parks throughout the neighborhood.

Parks should be connected to their surrounding neighborhoods.

4. GREEN CORRIDOR

The Study recommends streetscape improvements along Eastside Street from West Alabama to Interstate 59 in order to create a "green corridor." This corridor will emphasize connections to important existing open spaces at Levy Park and Lamar High School through landscape planting strips, a shared pedestrian – bicycle pathway and new street trees. This project, in conjunction with the Civic Center redevelopment is defined as one of the five key "next steps" to create a Livable Center in the Upper Kirby neighborhood as defined in section IV. Implementation.

Existing Levy Park

emphasize connections to important existing open spaces through landscape planting strips and sidewalks.

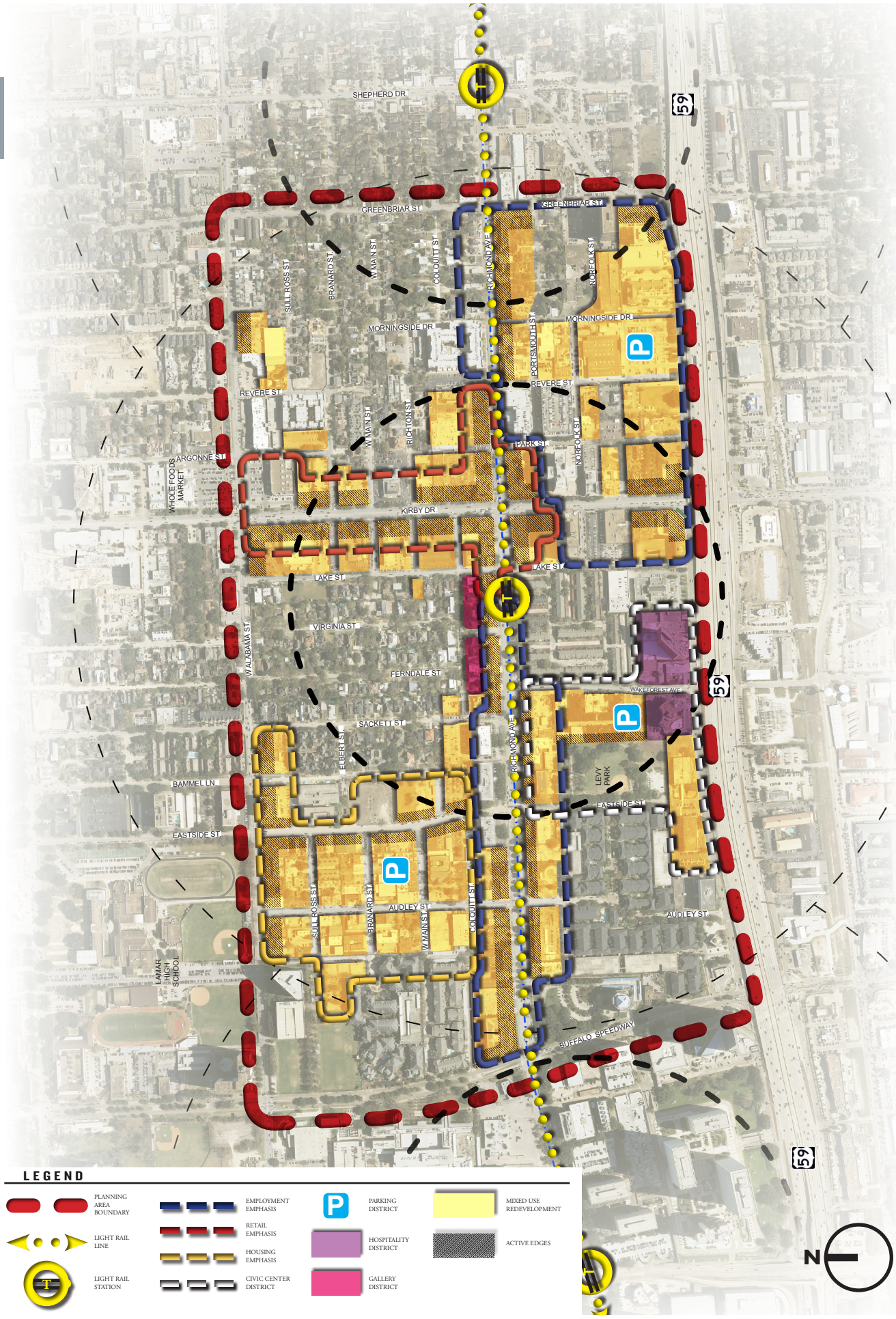


Figure 33 Land Use and Urban Form

F. LAND USE AND URBAN FORM

1. ACTIVE EDGES

The active edges represented in Figure 33 delineate mixed-use and commercial areas that are intended to have buildings that relate directly to the sidewalk. These active edge areas should be focused on the pedestrian to create vibrant, attractive corridors for redevelopment. Many of the guidelines listed in section F. Design Guidelines are intended to help create these active edges.

Mixed-use and commercial areas that are intended to have buildings should relate directly to the sidewalk.

Active edges help to promote a pedestrian environment.

2. MIXED-USE DISTRICTS

The Study recommends that several areas within the Upper Kirby District be redeveloped over time with a mixed-use development pattern. This designation generally refers to medium and higher-density development with active retail uses on the ground floor and housing, service, or office uses above. By promoting a mixture of uses in these areas, the Study helps to promote new development within walking distance of the planned MetroRail Station and Lake Street and Richmond Avenue. These mixed-use sites were designated as "areas of opportunity." Single-family neighborhoods within the Study area were generally designated as "areas of preservation." The areas recommended for mixed-use redevelopment include Districts on the following pages.

Medium and higher-density development with active retail uses on the ground floor and housing, service, or office uses above.

3. CIVIC CENTER DISTRICT

The Civic Center District is recognized by community stakeholders as the "heart" of Upper Kirby. Currently there is a Plan in place to create a community-oriented project at the corner of Wakeforest Avenue and Richmond Avenue (see section II.B). The Study proposes a district-wide approach incorporating this catalyst project in conjunction with new mixed-use development, streetscape and park improvements. The Civic Center holds a prime opportunity as a transit-oriented destination for surrounding residents as well as visitors from throughout the region. In order to create this lively, vibrant district, new urban development needs to respond positively to Levy Park. Buildings should be oriented to the park to help create activity along the edges as well as within this important gathering space. View corridors and pedestrian pathways should be established in order to provide accessibility and visual connections to the Park. A shared parking facility could help to provide required parking for both public and private uses. This strategy, as outlined in section IV. Implementation Roadmap will help to create a pedestrian-first environment while embracing the planned MetroRail Station one block to the east. New streetscape improvements along Wakeforest will help to create a strong link from the Hospitality District along Interstate 59 to the MetroRail Station. Other improvements proposed along Eastside Street and Richmond Avenue as described in section V. Public Improvements are recommended to improve placemaking and identity of the Civic Center District and to create strong connections to surrounding neighborhoods.

Figure 34 The Civic Center holds a prime opportunity as a transit-oriented destination for surrounding residents and visitors.

Figure 35 Surrounding Levy Park with active uses will help to make this important gathering place more vibrant.

4. GALLERY DISTRICT

The Gallery District along Colquitt Street is an important existing resource for the Upper Kirby District. The Study recommends that the Gallery District be promoted as an interesting local destination while also promoting new creative businesses and galleries in the area. Currently, there are parking and traffic conflicts within adjacent single-family neighborhoods during major events. In the near future, it is recommended that Gallery District events be promoted in conjunction with the planned MetroRail station to encourage visitors to "come by train." The Gallery District should also be incorporated into future activities at the planned Civic Center development across Richmond Avenue such as farmers markets, holiday fairs and art shows. In order to create a safe and pleasant connection to Colquitt Street, the Study recommends a new pedestrian connection to Richmond Avenue mid-block between Ferndale Street and Lake Street.

Gallery District should be promoted as an interesting local destination while also promoting new creative businesses and galleries in the area.

The Gallery District can host unique community events.

5. RICHMOND AVENUE - EMPLOYMENT DISTRICT

Richmond Avenue is recognized as a key mixed-use corridor within the Upper Kirby neighborhood. This role will be strengthened with the Planned MetroRail line, including a new station near the intersection of Lake Street. The Study recommends that the Richmond Avenue District from the planned station west to Buffalo Speedway have a strong mixed-use employment emphasis. This designation builds off of the current office character of the area while promoting change over time from an auto-oriented environment to a more transit and pedestrian-oriented place. The planned MetroRail line will create a major change in the physical form and identity of the corridor and should be coordinated with additional streetscape improvements as recommended in section V. Public Improvements.

Strong mixed-use employment emphasis.

The office character should promote change over time from an auto-oriented environment to a more transit and pedestrian-oriented place.

6. KIRBY DRIVE - RETAIL EMPHASIS

Kirby Drive is envisioned as vibrant mixed-use corridor with a retail-emphasis. The Study recommends that new development in this area promote a walkable environment following the design guidelines outlined in section III.F. Recent streetscape improvements have provided a positive first step in creating a more pleasant and attractive atmosphere along Kirby Drive. These improvements, along with those recommended in section V. Public Improvements, will provide a framework for new mixed-use development that is medium and higher density and oriented directly to the sidewalk and pedestrian space.

The Study recommends that new development in this area promote a walkable mixed-use environment

7. NORTHWEST DISTRICT - HOUSING EMPHASIS

The Northwest District, along Audley and Eastside Streets holds tremendous opportunity for infill development with a mixed-use housing emphasis. A variety of housing types including for-sale multi-family condos, apartments, live/work lofts and townhouses are recommended along with new neighborhood-oriented shops and services. By providing new housing choices in this area, within walking distance of the planned MetroRail station, existing businesses along Richmond Avenue and Kirby Drive will benefit from new customers and activity. A shared District approach to parking could be established in the Northwest area in order to promote walkable development. Streetscape improvements, especially along West Alabama Street and Eastside Street, as outlined in Section V. Public Improvements, will help to provide strong connections to Lamar High School as well as surrounding neighborhoods.

Infill development with a mixed-use housing emphasis.

A variety of housing types including for-sale multi-family condos, apartments, live/work lofts and townhouses.

8. SOUTHEAST DISTRICT - EMPLOYMENT EMPHASIS

The Southeast District, provides opportunity for new mixed-use development with an employment emphasis. This area currently contains very little housing and is office, service and light industrial in nature. Over time, new businesses could grow in context with the planned MetroRail stations at Richmond Avenue and Lake Street and Richmond Avenue and Shepherd Drive as well as other proposed neighborhood improvements. A shared District Parking approach could help to promote higher intensity development by alleviating the need for each individual business to supply a large number of parking spaces on-site. New neighborhood-scaled open spaces in the Southeast District could provide new gathering places for workers along with helping to encourage residential development that fits into the working nature of the area.

Mixed-use development with an employment emphasis.

New neighborhood-scaled open spaces provide new gathering places for workers and help encourage residential development that fits into the working nature of the area.

Figure 36 *Preferred Conceptual Plan*

G. BUILDING DESIGN GUIDELINES

I. INTENT

The Livable Centers Design Guidelines have been prepared to provide goals for new development within the Upper Kirby neighborhood. These illustrated guidelines are intended to establish quality appearance, compatibility of character and variety of design within the plan area.

Because of the mixture of land uses and development in a Livable Center, quality building design is essential. Although each building type varies in character defined by its use, there are a number of fundamental features and principles they should share. These guidelines are meant to delineate the general character and scale of new development while allowing creativity and uniqueness in individual architectural design.

Design Guidelines can articulate the neighborhood's goals of quality design of buildings and relationships to public space.

1. ORIENTATION

New buildings should maintain a continuous frontage with the building face adjacent and parallel to the front setback along streets and should address or open directly on to the sidewalk. Special attention should be paid to buildings that front important public spaces such as the Levy Park and the proposed transit plazas. Building setbacks will generally vary depending on land use and street type. Buildings along designated Urban Corridors should reflect guidelines outlined in Section II.B.

2. ENTRIES

Building entries should be well designed and easily identifiable from the street. When buildings are located at intersections, entrances should be located at the building corner. Above podium (a configuration where parking is either at-grade or partially below grade, but not fully underground, with the building or open space above) structures, stoops should be frequently spaced to provide pedestrian activity at the street level and to provide visual interest along the partially raised podium.

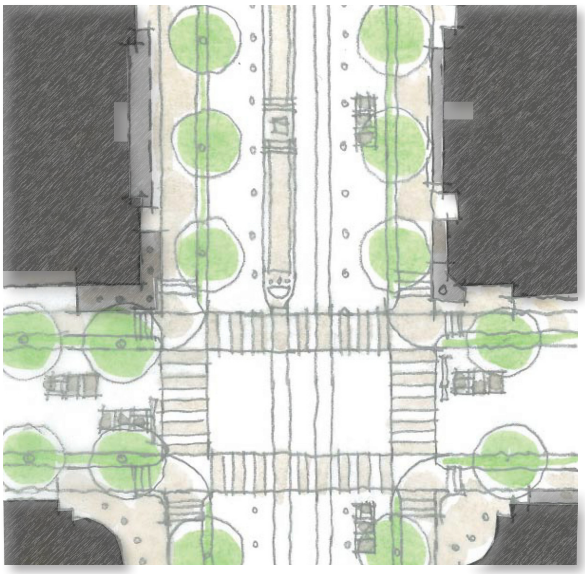


Figure 37 New Buildings should maintain a continuos frontage along streets and should address or open directly to the sidewalk.

Building entries should be well designed and easily identifiable from the street.

3. MASSING

Development massing should reflect the adjacent uses while defining space and creating a "street wall." Corner buildings should incorporate special features that reinforce important intersections and create buildings of unique architectural merit.

4. ARTICULATION

Buildings within the Livable Center should foster the appearance of an urban neighborhood with special attention to detailing within pedestrian range of touch and view. The use of quality materials, unique signage, canopies or awnings and intricate design details such as recessed windows and attractive moldings can reinforce the pedestrian nature of the street.

To create a pedestrian scale and character, facades should be defined through architectural treatment in a relatively small rhythm of approximately 25'-50' with vertically-oriented windows and entries.

Corner buildings should incorporate special features that reinforce important intersections and create buildings of unique architectural merit

Facades should be defined through architectural treatment in a relatively small rhythm of approximately 25'-30'.

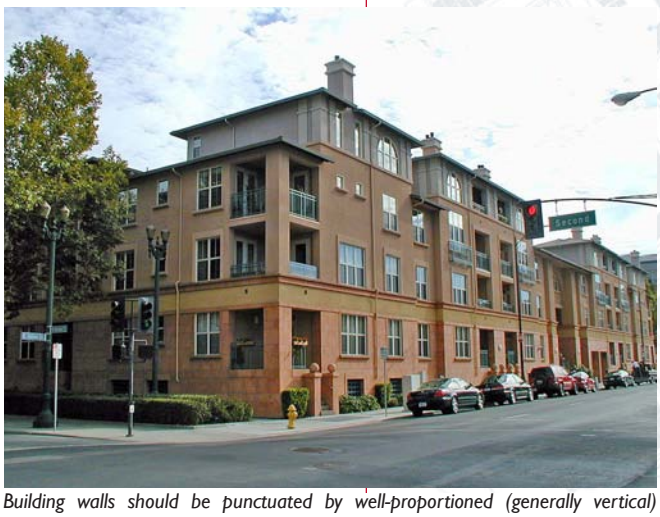
5. MATERIALS

Building materials are an important component of a quality built environment and should be used in a consistent and harmonious manner throughout the project. Building materials should be used to define elements such as building base, body, parapets, bays, arcades and structural elements. Materials should convey a sense of integrity, permanence and durability.

6. WINDOWS

Building walls should be punctuated by well-proportioned (generally vertical) openings that provide relief, detail and variation on the facade. Windows should be generously inset to create shade and shadow, while adding to the detail of the facade. Flush "nail-on" windows are strongly discouraged. Tinted or reflected glass is also strongly discouraged. Sound reduction windows should be used in buildings directly adjacent to the rail yards.

Building materials should be used to define elements such as building base, body, parapets, bays, arcades and structural elements.



Building walls should be punctuated by well-proportioned (generally vertical) openings that provide relief, detail and variation on the facade.

7. ROOFS

Individual roof forms should reflect the facade articulation, and building massing rather than a single roof over an articulated building. Roofs should be a combination of Gables, Flat/ parapet and Hips (where appropriate) to provide visual interest and be consistent with the building articulation. Flat roofs are encouraged on mixed-use buildings along major corridors such as Kirby Drive and Richmond Avenue. Parapet / flat roofs should have strong cornice detailing, to provide scale and visual interest. Pitched roofs are generally more appropriate for townhouses, single-family homes and multi-family buildings.

Pitched roofs are generally more appropriate for townhouses and multi-family buildings

Parapet / flat roofs should have strong cornice detailing, to provide scale and visual interest.

8. BUILDING TYPES - OVERVIEW

Individual building types have their own set of design guidelines. The following guidelines help ensure that the overall plan will create a productive pedestrian environment. Each building type intends to support an active streetscape by keeping the pedestrian friendly elements on the street edge and moving the less desirable areas, such as parking lots, to the rear of the buildings.

9. MULTI-FAMILY RESIDENTIAL

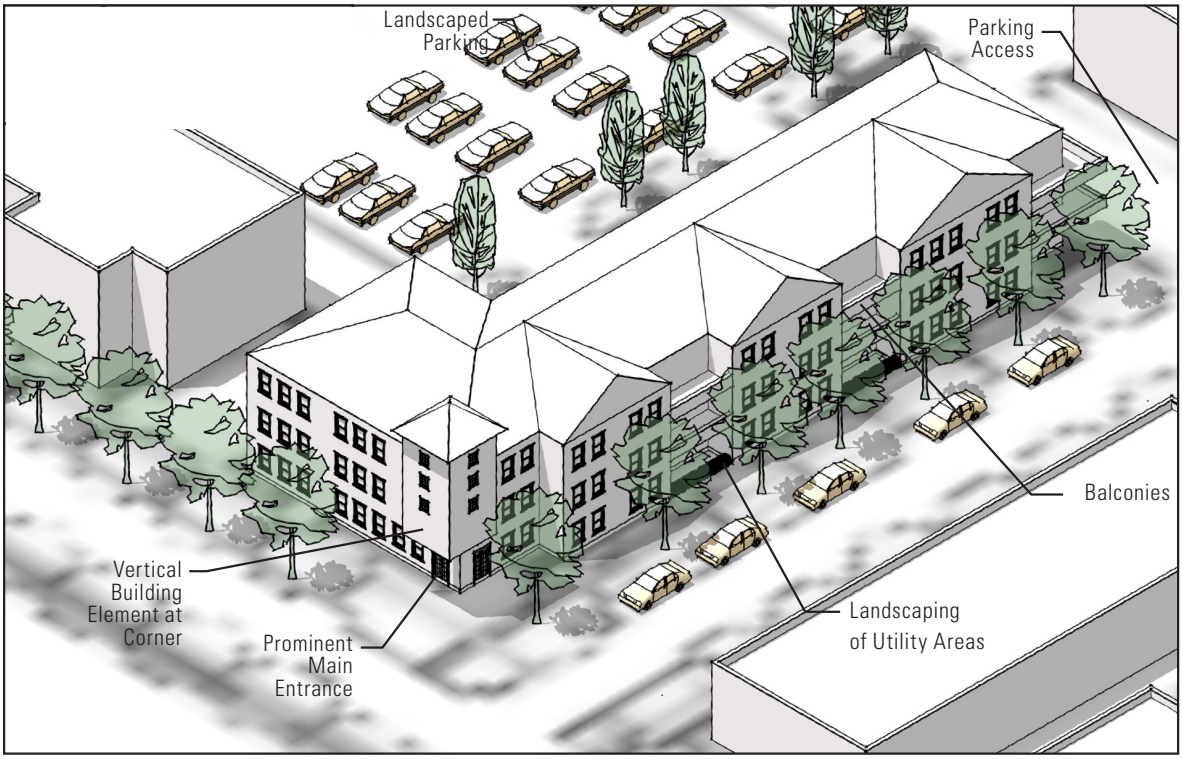


Figure 38 Multi-Family Residential Design Guidelines Sketch

Building Design

- Buildings should have vertically-oriented windows along all facade faces.
- Rooflines and chimneys should give the impression of residential uses.
- Subgrade parking or parking podiums should be encouraged.
- Shared or individual residential stoop entries are required along front facades to provide variation and activity along the residential street frontage.
- Roof forms should be visually interesting, reflect the building massing, and be of quality materials.
- Mechanical equipment shall be organized, screened and integrated with the architecture of the building.
- Facade rhythm should be articulated to provide a typical traditional building pattern of approximately 25 feet, and should emphasize verticality.

10. TOWNHOUSE

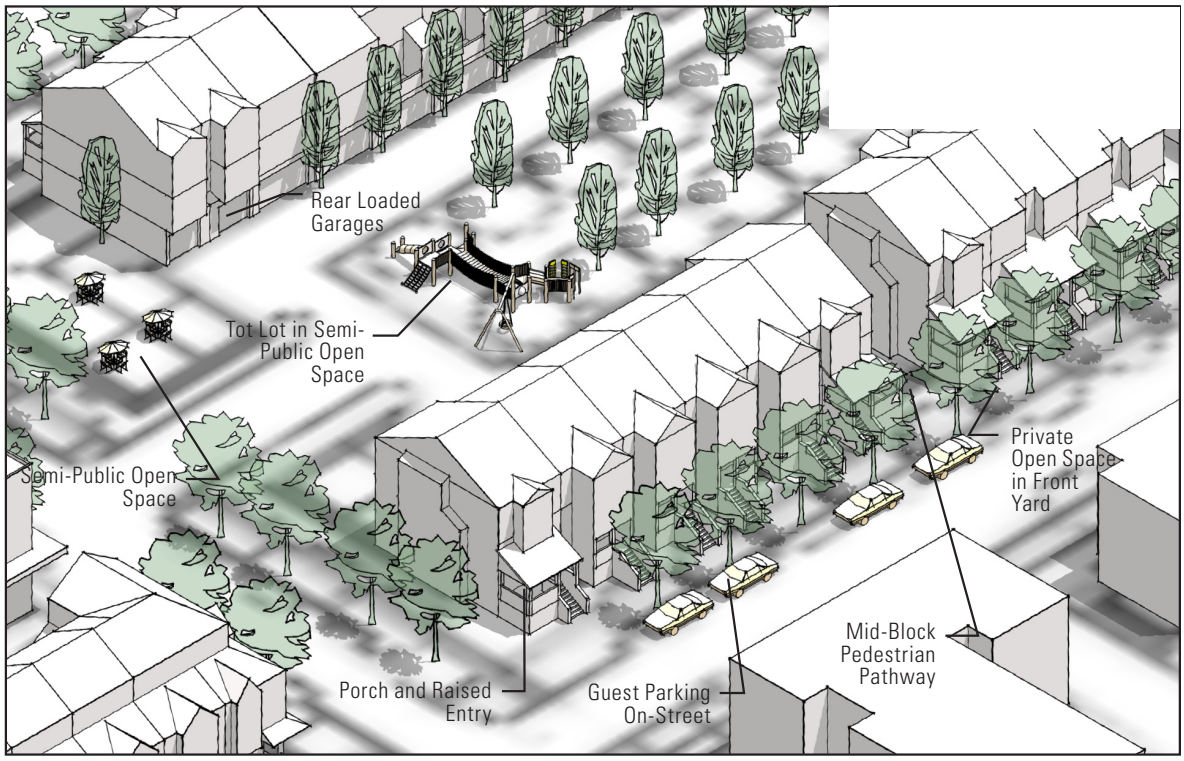


Figure 39 Townhouse Design Guidelines Sketch

Building Design

- Townhouses should face public and internal streets whenever possible to provide an attractive environment for both residents and visitors, and provide clearly identifiable addresses for units.
- Dwelling entries such as stoops and porches should be the predominant façade feature.
- Tandem garages should be incorporated to provide additional parking capacity.
- Building facades and roof lines should provide articulation to provide identity for individual units.
- The massing of rowhouses should break the main façade into three of four distinct elements: entry; main facade; a single or two story element and the roof.
- A combination of gable, flat and some hip roofs are appropriate for residential developments to provide visual interest.

II. RETAIL

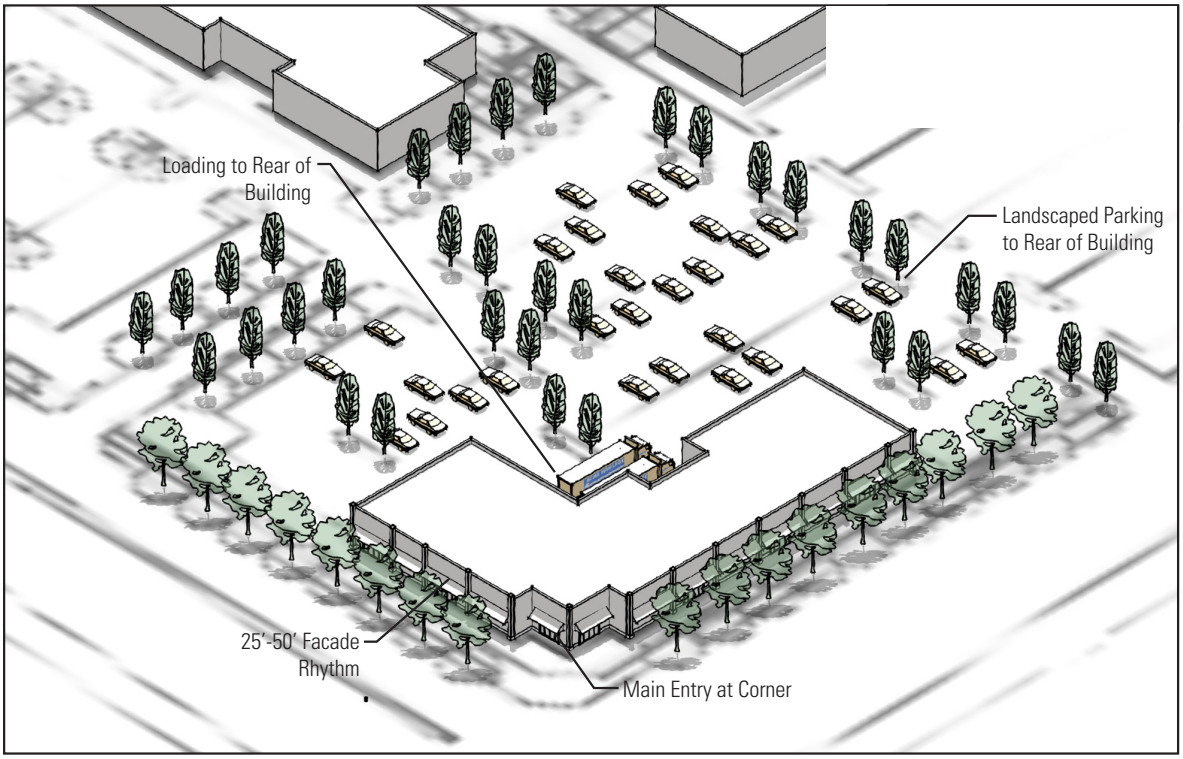


Figure 40 Retail Design Guidelines Sketch

Building Design

- Retail buildings should be oriented to the street with pedestrian-scaled storefronts with large storefront windows and detailing features directly adjacent to the sidewalk.
- A large percentage of the front facade should have storefront windows and glass doors.
- Retail buildings should be located on the corners of blocks so as to define intersections.
- Primary building entries should be located towards the sidewalk.
- Storefronts entries should be semi-recessed and should be located at approximately 25'-50' spacings.
- Special attention should be given to craftsmanship and detailing of materials and finishes within the pedestrian zone.
- Buildings should have canopies, awnings, or arcades for pedestrian protection and shading.
- Flat roofs are generally encouraged for commercial buildings for a more urban appearance. Parapets shall be articulated with well designed details. Mechanical equipment shall be organized, screened and designed to be consistent with the design of the building and hidden from public view to best extent possible.

I2. MIXED-USE

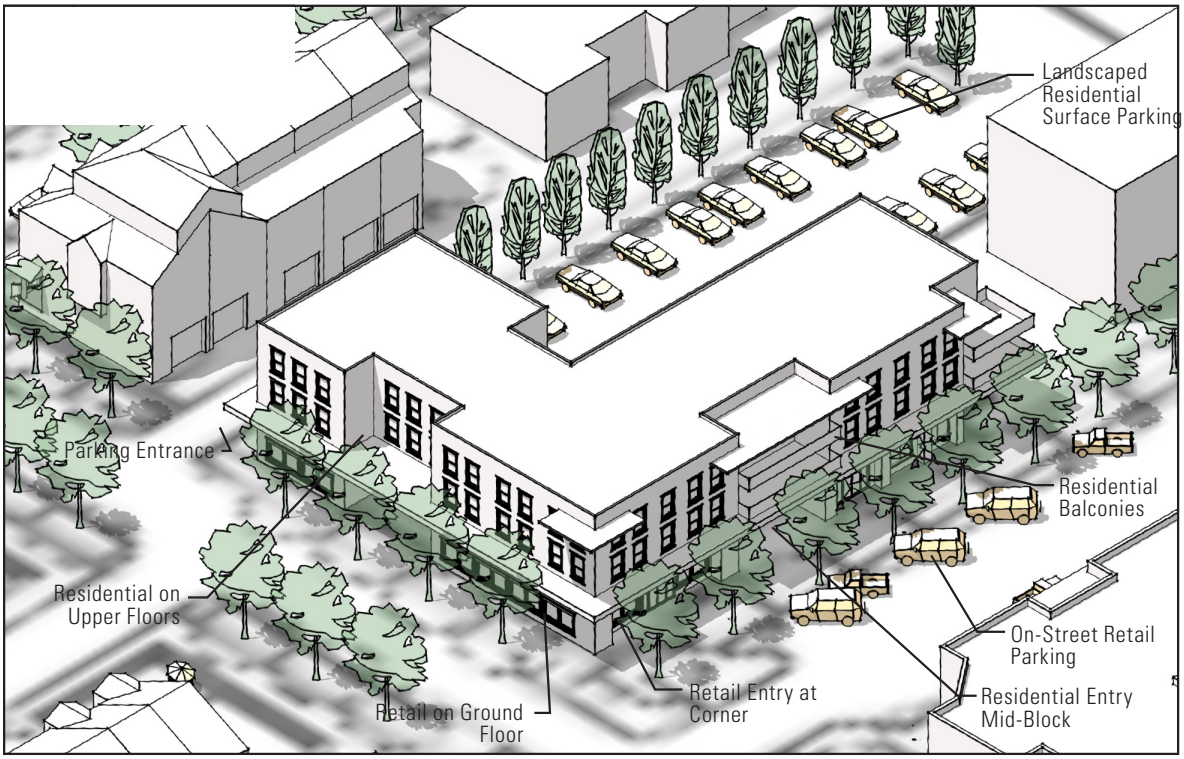


Figure 41 Mixed-Use Design Guidelines Sketch

Building Design

- Retail should be located on the ground floor, with residential uses above.
- Residential uses should have usable balconies of functional size adjacent to living areas.
- Retail uses should have canopies and pedestrian scaled-lighting along the sidewalk.
- Buildings should have landmark features such as vertical building elements at building corners.
- Cafe seating should be located adjacent to front entrees to help activate the sidewalk.
- A large percentage of the front facade should have storefront windows and glass doors.
- Prominent retail entries should be located at the building corner with residential entries located mid-block.

Secondary residential entries may be located adjacent to parking areas.

- Storefronts should be semi-recessed and should be located at approximately 25'-50' spacings.
- Attention should be given to craftsmanship and detailing of materials and finishes within the pedestrian zone.
- Retail frontage should have entry canopies, awnings, or arcades for pedestrian protection and shading.

13. INDUSTRIAL FLEX SPACE

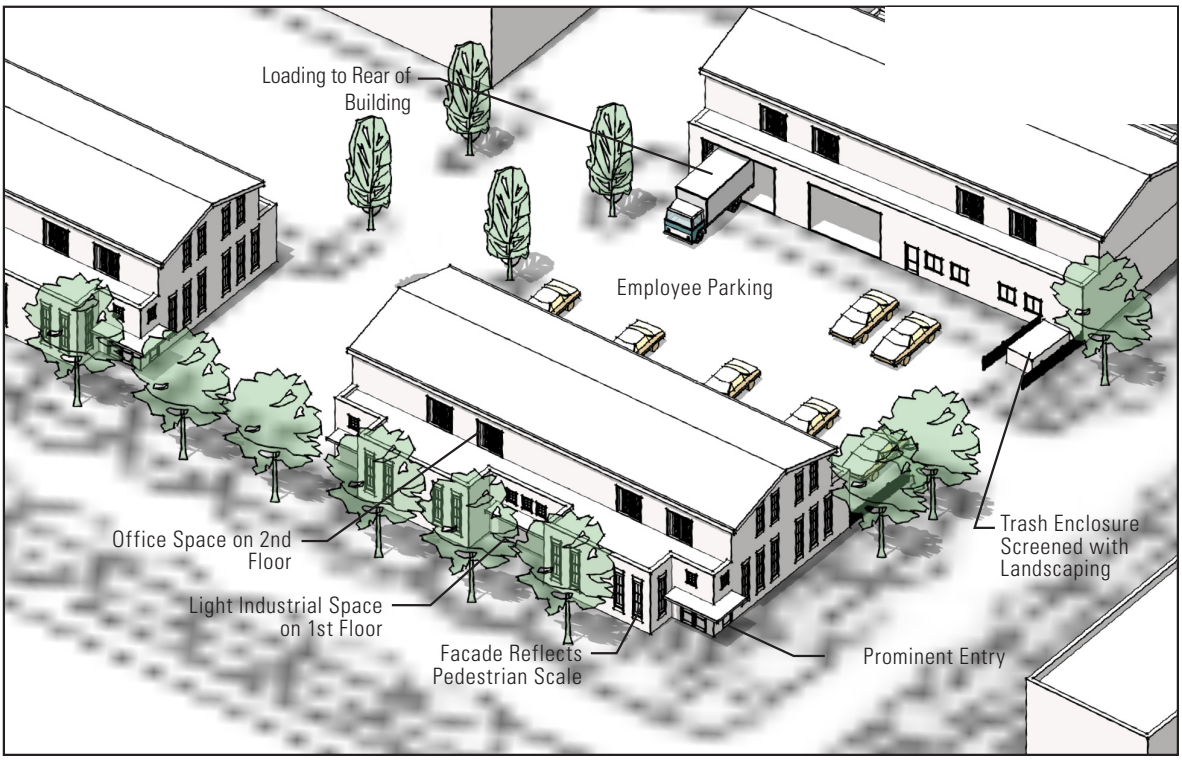


Figure 42 Industrial Flex Space Design Guidelines Sketch

Building Design

- Primary building entries should be adjacent to the sidewalk, secondary entrances may be located to the side or rear of the building.
- Industrial buildings should have flat or shed roofs and contemporary design features emphasizing durability and permanence.
- In two story buildings, light industrial uses should be located on the ground floor, with office uses above.
- The building facade should reflect a pedestrian scale, with ample vertically-oriented windows on the ground floor.
- The use of reflective or dark-tinted glass should be discouraged, especially at ground level.

IV. IMPLEMENTATION ROADMAP

A. INTRODUCTION

This chapter offers an "Implementation Roadmap" for the Upper Kirby Livable Centers Study. The section begins with an overview of federal, state and local funding sources that can serve as a menu of potential resources for implementing the study. In addition, it identifies a series of priority projects that represent practical next steps toward improving the quality of the neighborhood and the potential for leveraging private investment. These priority projects are discussed in terms of their costs, implementation strategies, likely funding sources and timing.

B. FUNDING SOURCES/STRATEGIES

In order to be successfully implemented, the capital improvements and initiatives recommended for Upper Kirby will need to be paired with appropriate and accessible funding sources. The following section outlines a selection of potential sources at the Federal, State, and Local levels.

I. FEDERAL

Although Federal funding sources are generally very competitive, they are also generally offer the largest sized grants. In most cases, these federal funds are granted to regional, state, and municipal entities, which outline the manner in which they will be dispersed in their application for funding. In Houston, this entity is most often the Houston-Galveston Area Council (H-GAC), which is responsible for overseeing transportation planning in the region. Many of the federal sources also require a local match, which can be achieved through the state and local sources, listed below. Note that for the funding sources administered by the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) operate under the auspices of the SAFETEA-LU, the 2005 Transportation reauthorization bill. A new bill will be passed to replace this bill in the near future and, as such, existing funding streams may be modified or eliminated while other funding sources may be introduced.

The Obama administration has undertaken several efforts to expand federal support for "livability" initiatives, suggesting that there may be additional funding for some of the recommendations outlined in this plan. These efforts have included the creation of the HUD-DOT-EPA Interagency Partnership for Sustainable Communities. This partnership serves to "coordinate federal housing, transportation, and other infrastructure investments to protect the environment, promote equitable development, and help to address the challenges of climate change," goals shared by H-GAC's Livable Centers program. The transportation reauthorization bill is likely to include additional funding mechanisms for supporting these efforts.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ) IMPROVEMENT PROGRAM

The CMAQ program, jointly administered by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), provides funds to State DOTs, MPOs, and transit agencies to invest in projects that reduce criteria air pollutants regulated from transportation-related sources. This has been interpreted broadly and includes programs, such as Livable Centers, that help plan and implement urban interventions that promote alternatives to automobile travel, including biking, walking, and transit. H-GAC selects projects that will receive CMAQ funding in conjunction with its 3-year Transportation Improvement Program. CMAQ funding requires a 20% local match or better.

SURFACE TRANSPORTATION PROGRAM (STP)

The FHWA's Surface Transportation Program provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. As per the FHWA's Bicycle and Pedestrian Program, STP funding can be applied to nearly the full range of federally approved bicycle and pedestrian improvements, including bike/ped planning, construction/improvements of sidewalks and crosswalks, signal improvements, and traffic calming.

A portion of STP funds are set aside for Transportation Enhancement (TE) Activities, which offer funding opportunities to help expand transportation choices and enhance the transportation experience through 12 eligible TE activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs, scenic and historic highway programs, landscaping, historic preservation, and environmental mitigation. In Texas, TE funds are dispersed at the state level in form of Statewide Transportation Enhancement Program (STEP) grants.

STP funding is awarded to H-GAC, which administers the program allocates funding to specific projects.

TRANSPORTATION AND COMMUNITY AND SYSTEM PRESERVATION (TCSP) PROGRAM

The FHWA's Transportation, Community, and System Preservation (TCSP) Program is a comprehensive initiative of research and grants to investigate the relationships between transportation, community, and system preservation plans and practices and identify private sector-based initiatives to improve such relationships. States, metropolitan planning organizations, local governments, and tribal governments are eligible for discretionary grants to carry out eligible projects to integrate transportation, community, and system preservation plans and practices that: improve the efficiency of the transportation system of the United States; reduce environmental impacts of transportation; reduce the need for costly future public infrastructure investments insure efficient access to jobs, services, and centers of trade; examine community development patterns and identify strategies to encourage private sector development patterns and investments that support these goals.

SAFE ROUTES TO SCHOOL PROGRAM

The FHWA's Safe Route to School Program provides funds to states to substantially improve the ability of primary and middle school students to walk and bicycle to school safely. The program's funding opportunities include those for infrastructure projects, such as engineering improvements, that improve safety. Because there are multiple schools within the study area, some of the recommendations may be eligible for this funding.

AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA)

Commonly known as the Stimulus Package of 2009, ARRA provided funding for a wide range of purposes, including neighborhood-scale capital improvements. While there is no additional funding available under ARRA, the Upper Kirby Management District has already been awarded $5 million in ARRA funding for purposes that align closely with some of the components of this plan. As such, this may be an important mechanism for implementing these recommendations.

2. LOCAL/REGIONAL

COMMUNITY TREES GRANT PROGRAM

Established in 2005, H-GAC's Community Trees Grant Program provides technical and financial assistance to cities, counties and non-profit organizations seeking to increase the number and diversity of trees in their communities. The grant provides funds to purchase trees for plantings in parks and other public spaces. The program is a reimbursement grant that requires a one-to-one match. H-GAC provides technical assistance, but it is required that applicants solicit volunteers to carry out the tree plantings. This volunteer time may be used as an in-kind match contribution.

TAX INCREMENT REINVESTMENT ZONE (TIRZ)

A TIRZ is a legally defined geographic area, established by the City. Depending on the financing plan established at the time of the TIRZ's creation, a portion (up to 100%) of the marginal increase in property tax revenue collected within its boundaries may be retained by the TIRZ and used to repay bonds issued for the purpose of financing projects within the area. The city can also contribute sales tax revenue to TIRZ projects. A wide variety of expenses are eligible for these funds, including public improvements, basic infrastructure, gap financing for development, and a range of professional services. In general, TIRZ expenditures are intended to facilitate/ catalyze new development and/or generate increases in sales or property assessments, thus creating a self-sustaining financing mechanism.

In Upper Kirby, the entire study area is within a TIRZ. Consequently, this is a critical component of financing new infrastructure.

CITY OF HOUSTON GENERAL FUND OR BOND CONTRIBUTIONS

The City of Houston may elect to issue bonds or grants in support of the activities outlined in this plan. Depending on the implementation, a range of city agencies may be willing to enter into a partnership to fund or manage projects, including the Department of Public Works and Engineering and the Parks and Recreation Department.

MANAGEMENT DISTRICT GENERAL FUNDS

Upper Kirby Management District collects revenue from owners of commercial property within its boundaries, based on property tax assessments on a rate of $0.15 per $100 of value. The management district may choose to allocate a portion of its budget toward the finance of the capital improvements and other projects outlined in the plan. For projects implemented with federal funding sources, this would likely come in the form of payment toward the required 20% local match.

	Potential Use											
Funding Source	Building Construction	Community/ Economic Development	Community-Oriented Events	Environmental Mitigation	Sidewalks/ Lighting/ Stree Furniture	Planning	Plaza Construction/ Maintenance	Street Trees	Street Crossings	Trails	Traffic Calming	Other Major Capital Improvements
American Reinvestment and Recover Act	x	x		x	x	x	x	x	x	x	x	x
City of Houston General Fund/Bonds	x	x	x	x	x	x	x	x	x	x	x	x
Community Development Block Grant (CDBG)		x										
Community Trees Grant Program								x				
Congestion Mitigation and Air Quality (CMAQ) improvement program					x	x		x	x		x	x
Harris County Flood Control District				x				x				
Neighborhood Empowerment Zones		x										
Public/Private Partnerships	x											
Recreational Trails Program (RTP)										x		
Safe Routes to School Program					x			x	x		x	x
Surface Transporation Program (STP) (including TE and STEP)				x	x	x		x	x		x	x
Tax Increment Reinvestment Zone (TIRZ)	x	x	x	x	x	x	x	x	x	x	x	x
Transportation and Community and System Preservation (TCSP) Program				x	x	x		x			x	x
Private Donors/Sponsors	x	x	x	x	x	x	x	x	x	x	x	

Figure 43 Possible Funding Sources for Improvements

C. NEXT STEPS - PRIORITY PROJECTS & STRATEGIES

1. DEVELOP A PARKING STRATEGY FOR THE UPPER KIRBY DISTRICT

A key opportunity to foster the development of a mixed-use, walkable transit-oriented community in Upper Kirby is the creation of a district-based parking strategy. Parking is often a primary determinant of urban form and street life and is critical for guiding neighborhood change. Transit-oriented districts offer the potential for lower parking requirements because of the combination of increased transit service and access to a mix of retail and services in a walkable neighborhood. A set of carefully tailored on-site parking requirements and a managed parking district can also have a major impact on the feasibility of development, particularly for higher-density building types that require structured parking. In addition, the new light rail stations are likely to increase demand for parking in the area from residents in adjacent neighborhoods, who may wish to park by transit in order to ride into downtown. Balancing these factors requires the development of a comprehensive parking strategy for the district. Limiting and centralizing parking will be critical to a strong district-wide parking strategy. Such a plan should include some combination of the following policies or improvements:

- Reduce parking minimums for new development.
- Permit in-lieu payments for off-site parking to satisfy parking requirements for new development. These payments could help finance a centralized parking structure.
- Encourage shared parking among adjacent uses.
- Work with the City of Houston Parking Management division to install meters in areas where parking is high in demand, especially near Levy Park.
- Require permits for long-term parking on residential streets.
- Develop a centralized parking structure for use both by transit users and by visitors to the Civic Center area.

IMPLEMENTATION STRATEGY

A consultant should be hired to more fully study the area's parking needs and the opportunities for shared parking and revenue generation. The implementation of this strategy may be financed in part these parking revenues. Most of the actions outlined above would not require any additional funding for their implementation. Meters could be installed by the Upper Kirby Management District, which could repay the cost through the revenue they would generate; any surplus revenue could be used by the Management District to support other streetscape improvements. The issuance and monitoring of permits would need to be coordinated with the City of Houston Parking Management Division. Finally, the parking structure could be developed in coordination with the Civic Center project.

COST

The development of this plan will cost approximately $25,000.

2. FOCUS ON IMMEDIATE STATION AREA IMPROVEMENTS IN CONJUNCTION WITH METRO INCLUDING "KISS AND RIDE" SPACES AND A TRANSIT PLAZA AT THE NE CORNER OF RICHMOND AND LAKE

Station area improvements such as streetscape elements and a "kiss and ride" drop off area are critical investments to ensure that the station's value, both as a community asset and as a catalyst for development, can be fully leveraged. As described in Section III, the transit plazas will act as gateways and gathering places for the neighborhood. This plaza, which is currently occupied by a vacant printing services business, will also be designed to have kiss and ride spaces and bus stops that allow integration with the planned MetroRail line. The plaza should also feature a signature design element that helps to communicate and establish neighborhood identity.

IMPLEMENTATION STRATEGY

The Management District should approach METRO about partnering to deliver the transit plaza, which will both serve as a community amenity and provide transit infrastructure that will facilitate improved ridership. The property would need to be purchased before these improvements could be implemented. Purchase of the site would need to be negotiated from the current owner, and could be facilitated using TIRZ revenues. If it is not possible to acquire this site, there are other nearby parcels, including those on the south side of the intersection, which might also be suitable for a transit plaza. METRO may be willing to participate in the implementation of the kiss and ride area as a means of improving station accessibility and ridership. Supplementary funding could come from private donors or sponsors, from H-GAC's Community Trees Program, from the TIRZ, and from the City and Management District.

COST

While acquisition costs are currently unknown, the cost of capital improvements, including hardscape, softscape, and a 20% contingency will be approximately $500,000 for the proposed plazas. This does not include maintenance, which will vary according to the specifics of the treatments applied.

3. CREATE A "PEDESTRIAN LINKAGES AND WAYFINDING" PLAN FOR THE DISTRICT

While the Upper Kirby district is both bound by and intersected by major road axes, such as Kirby, Richmond, Alabama, and US-59, its smaller interior roads are not easily navigable. Most of these roads are not continuous beyond a few blocks and several dead-end mid-block. It is likely that this would include the purchase of easements to construct pedestrian paths where roads currently end as well as the implementation of additional signage throughout the area. In addition a way-finding plan should be developed and implemented as a means of fostering neighborhood identity and guiding visitors to key attractions. Improved signage, especially at major neighborhood entrances, will help with both navigation and with the marketing of the district. In some cases, it may be possible to negotiate signage on private property, as has been implemented in the Museum District.

IMPLEMENTATION STRATEGY

The Upper Kirby Management District should develop a comprehensive plan for enhancing pedestrian connectivity and wayfinding. The pedestrian linkages element of this recommendation should be guided by the recommendations included in Section III of this Livable Centers Plan. This element would require the purchase of land and/or easements for the construction of new pedestrian connections. Although the TIRZ has the power of eminent domain, the amount land in question is too small to justify the legal costs that would likely be involved and, consequently, would likely need to be acquired through negotiations with land owners. These purchases could be funded by bonds issued by the TIRZ. Signage for the wayfinding element should be planned, designed, and implemented by the Upper Kirby Management district, with support for sponsorship by local businesses.

COST

The study and plan will cost approximately $35,000.

4. IMPLEMENT STREETSCAPE IMPROVEMENTS IN CONJUNCTION WITH METRO ALONG THE RICHMOND CORRIDOR

With the new light rail running along its length, Richmond Avenue will be the vantage from which passengers view the neighborhood. Consequently, it is critical that this axis receive the treatments necessary to present the neighborhood as a lively destination. Currently, METRO plans to accommodate the light rail in the center and leave three automobile travel lanes in each direction on Richmond Avenue. This should be redesigned such that there will be two auto travel lanes and a dedicated bike lane on each side. This implementation would also include the provision of wide pedestrian areas, with two rows of street trees on each side, lighting, and space for café seating and other outdoor amenities, imparting a "Main Street" feel to the corridor.

IMPLEMENTATION STRATEGY

The Upper Kirby Management District has already been awarded an ARRA grant to help implement the improvements within the pedestrian realm, including sidewalks, street trees and lawns, and pedestrian lighting. ARRA funding can be supplemented with local sources, such as the TIRZ and the Community Trees Program. Changes to the street should be coordinated with METRO as it constructs the light rail line. Funding for these elements, such as ornamental street lighting, should be sought from a combination of local sources (including the TIRZ and private sponsors/donors) and state/federal sources, including the Transportation Enhancement program.

COST

Improvements between Kirby and Buffalo Speedway, will cost approximately $1.4 million, including hardscape, softscape, and a 20% contingency. Planning level cost estimates for Richmond Avenue improvements between Kirby and Greenbriar Street may be calculated based on similar streetscape costs in this Study.

5. ESTABLISH THE CIVIC CENTER PROJECT AS A KEY TRANSIT-ORIENTED DEVELOPMENT

Upper Kirby is presently adding new high-density housing units and is transitioning from a primarily commercial neighborhood to one that is more mixed-use in nature. Presently, there is no community node that provides a public gathering place, a critical mass of activity, and a neighborhood identity. The Civic Center project could help to fill those roles, place a significant amount of new activity near the new light rail station, and serve as an example of transit-oriented development for the neighborhood.

IMPLEMENTATION STRATEGY

The Management District should work with other key partners and stakeholders to clarify goals for the project and explore options for financing and development. Depending on the scope and nature of the project, it might be developed as a public-private partnership in conjunction with a private developer, and include a combination of both civic and private uses (e.g., residential, retail or office). One possible scenario is that a private developer would agree to build civic space and other desired elements as a part of a larger project on the site. As a part of this agreement, the Management District might either convey the land to the developer at below market value or as a long-term ground lease. The civic uses could be owned by the Management District, or owned by the developer and rented by the Management District or other users.

A public-private development at the civic center could also be implemented in conjunction with a district-based parking strategy. For instance, the Upper Kirby Management District could partner with a parking management company, which would assist in financing construction in exchange for the rights to collect revenue from a district parking garage. Other options would depend on the specific components of the district-wide parking strategy, such as allowing in-lieu payments for off-site parking are permitted to satisfy requirements for new development or for adjacent property owners. If that policy were implemented, this could generate an ongoing revenue stream for the Management District. Depending on the nature of the project, this agreement could also include funding using bonds issued by the TIRZ. Because the Civic Center will be a valuable community amenity, it is likely that it will increase the value of land in the district, helping to ensure that the bond obligations can be met through the tax increment generated.

COST

The Civic Center project is early in its planning, and its costs will vary based on the size and scope of the project.

D. PROJECTED AIR QUALITY BENEFITS

There are very few studies on the effect of microscale pedestrian improvements on travel patterns. The "Making the Land Use, Transportation, Air Quality Connection" (LUTRAQ) demonstration project is one such study (1,000 Friends of Oregon (1993). Making the Land Use Transportation Air Quality Connection—The Pedestrian Environment—Volume 4A. Available at: http://ntl.bts.gov/DOCS/tped.html) Special attention was given to the quality of the pedestrian environment as gauged by the Pedestrian Environment Factor (PEF), a composite measure of "pedestrian friendliness". The four variables included in the PEF are: ease of street crossings, sidewalk continuity, local street characteristics (grid vs. cul-de-sac) and topography. Each of these is given a score of 1-3, resulting in a maximum PEF score of 12. Most significant to this project was the finding that a higher PEF score for a zone was accompanied by a lower automobile mode share for that zone. A one-point increase in PEF was accompanied by a decrease in automobile mode share of 1.8 percent.

The sidewalk improvements proposed as part of this study will increase sidewalk continuity along approximately 16,600 linear feet of neighborhood streets in the study area. Although PEF was not field-verified, this improvement is expected to increase the PEF score by 1 based on sidewalk continuity benefits. While the Portland study would suggest a 1.8 percent decrease in automobile mode share, H-GAC estimates a more conservative 0.9 percent decrease.

The analysis is based on Traffic Analysis Zones (TAZs) as determined by H-GAC as part of their regional travel demand model. TAZs included in the Upper Kirby study area are listed below in Table 1.

Table 1: TAZs encompassing Upper Kirby study area

TAZ	North boundary	South boundary	West Boundary	East Boundary
1134	West Alabama St.	Richmond Ave.	Kirby Dr.	Shepherd Dr.
1135	Richmond Ave.	US 59	Kirby Dr.	Shepherd Dr.
1148	West Alabama St.	Richmond Ave.	Buffalo Spdwy.	Kirby Dr.
1149	Richmond Ave.	US 59	Buffalo Spdwy.	Kirby Dr.

Source: Houston - Galveston Area Council

In the regional travel demand model, the total number of person-trips per day is calculated from each TAZ to all other TAZs in the region. The total number of trips generated by each TAZ is divided into home-based work (commuting), home-based non-work (such as to school, shopping, entertainment, etc.) and non-home-based (errands during the workday, for example). These are totaled for the study area as shown below in Table 2.

Table 2: Total Person-Trips by TAZ for Year 2009

Traffic Analysis Zone	Home-Based Work	Home-Based Non-Work	Non-Home-Based	TOTAL
1134	4,135	6,523	6,267	16,925
1135	3,956	5,177	7,841	16,974
1148	9,919	12,080	18,461	40,460
1149	6,704	7,938	12,690	27,332
TOTAL	**24,714**	**31,718**	**45,259**	**101,691**

Source: Houston - Galveston Area Council

The number of automobile trips generated by these zones is estimated at 78,224 per day based on 101,691 person trips/day divided by the Houston regional average vehicle occupancy of 1.30. (Vehicle occupancy is not available for sub-areas of the region.) The average vehicle trip distance of 12.0 miles is calculated using 2009 regional trip characteristics by trip type (e.g. home-based work), weighted by the distribution of work, non work and non-home trips modeled for the TAZs in the study area (See Tables 3 and 4 below).

Table 3: Data for Estimate to Trip Distance

Trip Purpose	Regional Avg Trip Distance (mi)	Number of Trips in TAZs
Home-Based Work	20.32	24,714
Home-Based Non-Work	9.81	31,718
Non-Home-Based	13.05	45,259
TOTAL		101,691
Weighted Average	13.81	

Table 4: Data for Estimate to Vehicle Occupancy

Trip Purpose	Regional Avg Occupancy	Number of Trips in TAZs
Home-Based Work	1.10	24,714
Home-Based Non-Work	1.53	31,718
Non-Home-Based	1.24	45,259
TOTAL		101,691
Weighted Average	1.30	

Sources: 2000 Census, U. S. Census Bureau; Technical Memo RE: Houston-Galveston 1995 Household Travel Survey from David Pearson, Texas Transportation Institute to Jerry Bobo, H-GAC, December 20, 1996; and 2009 Person Trip Tables provided by H-GAC February 2009. Home-based non-work trips include school, shopping, entertainment, airport and other.

VMT reduced are calculated to be 8,976 per day based on multiplication of the average trip distance (12.75), number of vehicle trips in the zone (78,224) and the percentage of trips reduced by the project (0.9%).

12.75 x 78,224 = 997,356

997,356 * 0.009 = 8,976 mi/day

Vehicle emissions are calculated by multiplying VMT by the weighted average emission rates by vehicle type (average emission rates by vehicle type multiplied by the fraction of such vehicles measured regionally on the Local (intrazonal) road type as shown in Table 5 below).

Table 5. Vehicle Mix and Average Emission Rates by EPA Vehicle Type

	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	All Vehicles
Vehicle Type									
Local Roads	59.0%	24.2%	7.2%	3.2%	0.2%	0.3%	5.9%	0.1%	**100.0%**
Emissions									
VOC (g/mile)	0.40	0.47	0.45	1.36	0.06	0.10	1.12	4.65	**0.50**
NOx (g/mile)	0.62	0.66	0.77	3.87	0.50	0.54	5.58	0.97	**1.03**

Source: Houston - Galveston Area Council

VOC = 8,976 mi/day * 0.5 g/mi = 4,488 g/day = 4.488 kg/day

NOx = 8,976 mi/day * 1.03 g/mi = 9,245 g/day = 9.245 kg/day

Thus, the final air quality benefit from the Near Upper Kirby projects is estimated at the following pollutant reductions:

4.488 kg/day Volatile Organic Carbon

9.245 kg/day Nitrogen Oxides

E. IMPACT OF PUBLIC IMPROVEMENTS ON PRIVATE INVESTMENT

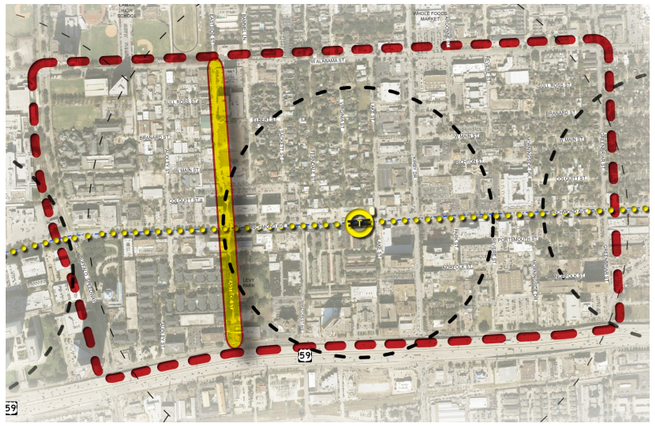
A growing body of research shows that investments in neighborhood amenities such as parks and streetscape improvements have a direct impact on property values, and therefore, development feasibility. For example:

- A recent study of a neighborhood in Philadelphia determined that streetscaping was associated with a 28 percent gain in property values relative to similar homes in comparable areas without streetscape improvements.
- Two national studies looked at the relationship between property values and "walkability" as measured by "Walkscore", an index that ranks communities on a scale of 0 to 100 based on how many businesses, parks, theaters, schools and other destinations are within walking distance. The studies found that office and retail properties command a 54 percent price premium over properties with lower Walkscores. Residential properties experience a $700 to $3,000 increase in home value for every one point increase in Walkscore.
- The presence of neighborhood parks was found to be correlated with a 7 to 15 percent increase in home values in Greenville, South Carolina.
- The presence of local retail and services also contributes to walkability and is shown to have a positive impact on home values. Proximity to a movie theatre, for example, was shown in one study to command a price premium of 30 percent while proximity to specialty grocers is associated with a premium of 18 percent.

V. PUBLIC IMPROVEMENTS - PROJECT CUT SHEETS

Existing Information & Challenges:

- Eastside Street currently accommodates two travel lanes and parallel on-street parking on both sides in a; 60 feet right-of-way north of Richmond Ave. and 55 feet right-of-way south of Richmond Ave.
- Curbs and gutters are discontinuous.
- Sidewalks are discontinuous, not present in certain sections or provided on private lots.
- Tree lawn/planting is sporadic and in some sections stretch all the way to the private property.



KEY LOCATION PLAN

COST ESTIMATES:

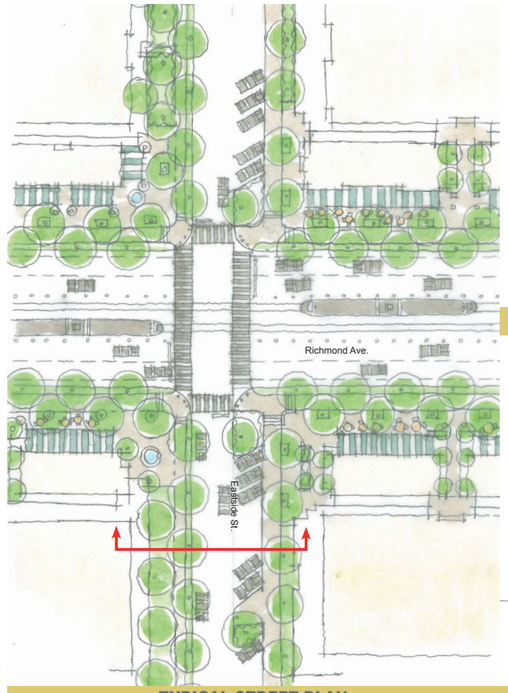
Eastside Street Improvements:

Hardscape total:	$ 880,000
Softscape total:	$ 70,000
Contingency (20%):	$ 200,000
Grand total:	**$ 1,150,000**

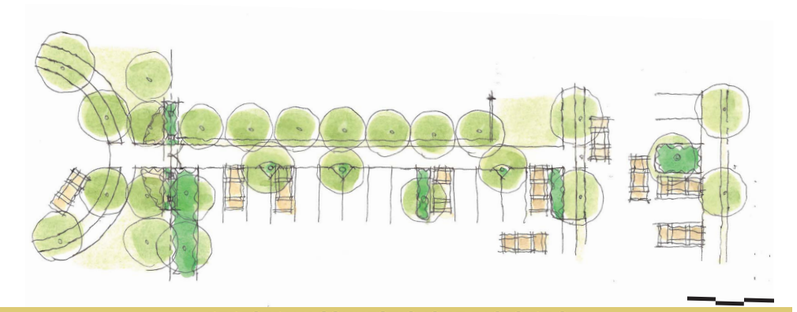
EXISTING STREET PHOTOS

Proposed Improvements:

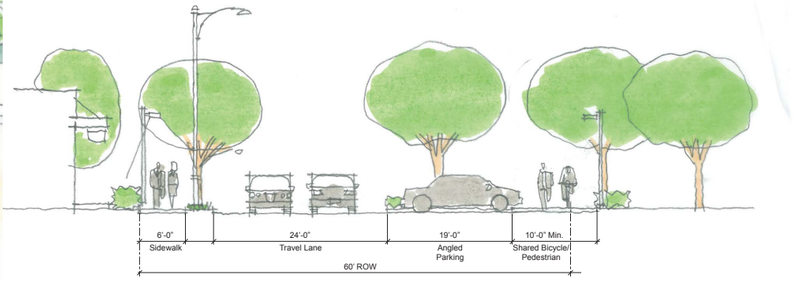
- A redesign of the street to accommodate 6 feet sidewalks with tree lawn/planting on one side, with continuous curb and gutter.
- A 10 feet shared bicycle and pedestrian lane on Eastside street will serve as a north-south connector between W. Alabama st. and the Levy Park.
- Perpendicular metered parking at the parks and mixed-use redevelopment side where possible.
- Bulb-outs at street intersections, as a traffic calming measure intended to slow the speed of traffic and increase driver awareness, hence enhancing the safety of the pedestrians and motorists.
- Street lights along with landscaping and pedestrian amenities at park edges would provide a pleasant pedestrian walkable environment.



TYPICAL STREET PLAN



PEDESTRIAN CONNECTIONS AT EASTSIDE ST.



TYPICAL STREET SECTION

CHARACTER PHOTOS

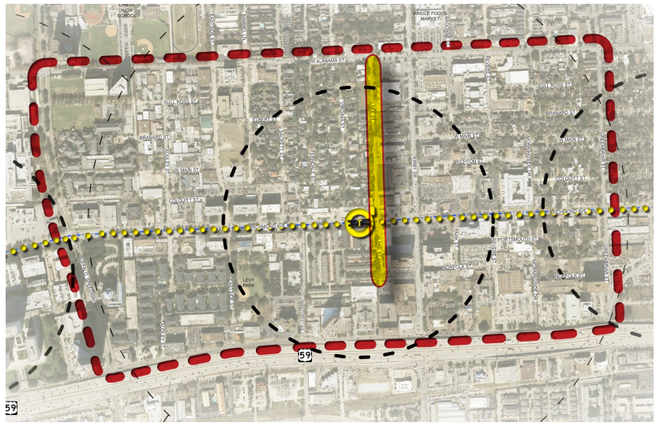
PROPOSED IMPROVEMENTS | EASTSIDE STREET

VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Existing Information & Challenges:

- Lake Street currently accommodates two travel lanes and parallel parking on both sides in a range of 60 to 50 feet right-of-way.
- Curbs and gutters are discontinuous.
- Sidewalks are discontinuous, not present in most sections.
- Tree lawn/planting is sporadic and in some sections stretch all the way to the private property.
- There are existing electric poles in the tree lawn/planting strip or the edge of the curb at some sections of this street.
- Typicaly commercial uses on east side and residential uses on west side.



KEY LOCATION PLAN

COST ESTIMATES:

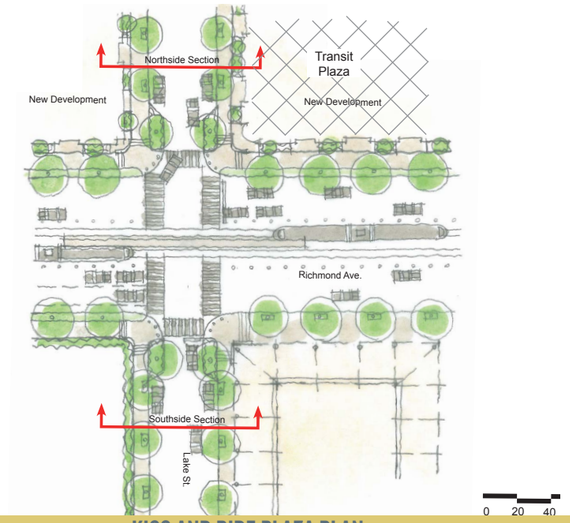
Lake Street Improvements:

Hardscape total:	$ 500,000
Softscape total:	$ 40,000
Contingency (20%):	$ 110,000
Grand total:	**$ 650,000**

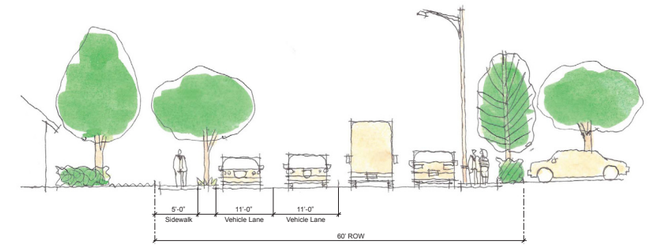
EXISTING STREET PHOTOS

Proposed Improvements:

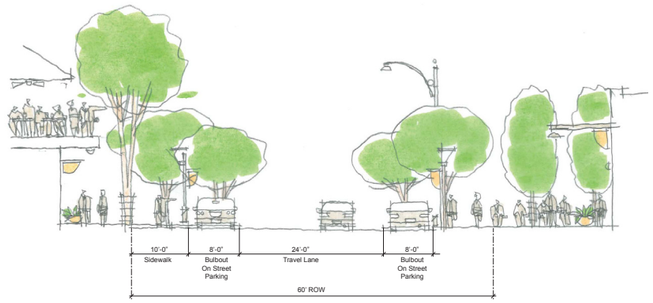
- A redesign of the street to accommodate 5 feet sidewalks with tree lawn/planting on both the sides, with continuous curb and gutter.
- Bulb-outs at street intersections, as a traffic calming measure intended to slow the speed of traffic and increase driver awareness.
- Street lights (attached to existing electric poles where possible) provide a safe and pleasant pedestrian walkable environment.
- A transit plaza, at the north-west corner of Lake street and Richmond ave. intersection, would enhance safety for pedestrians and motorists and provide a pleasant environment with landscaping and pedestrian amenities.
- Short term parking on Lake street around the transit plaza for drop-off/pick-up scenario.
- Sufficiently wide sidewalks with landscape ammenties adjacent to commercial/mixed-use redevelopments, short term parking & plaza.



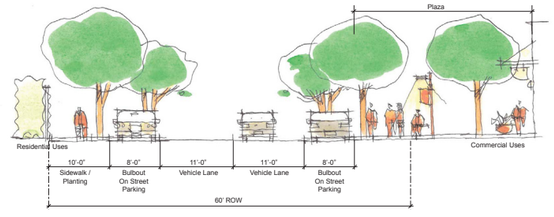
KISS AND RIDE PLAZA PLAN



TYPICAL STREET SECTION



TYPICAL STREET SECTION - NORTH OF RICHMOND AVE.



TYPICAL STREET SECTION - SOUTH OF RICHMOND AVE.

CHARACTER PHOTOS

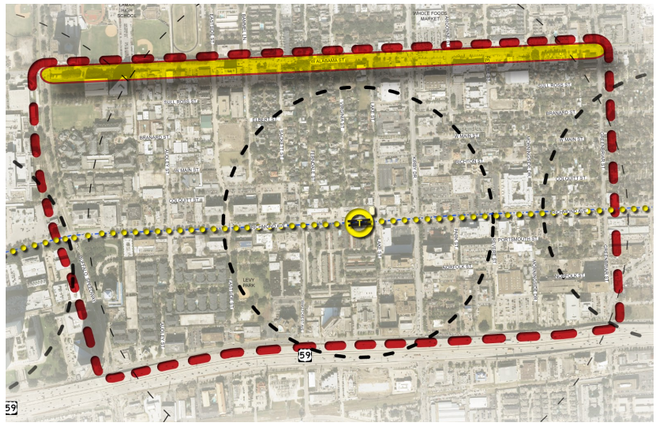
PROPOSED IMPROVEMENTS | LAKE STREET

VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Existing Information & Challenges:

- West Alabama Street currently accommodates three to four travel lanes including turn lanes with no on-street parking in a range of 80 to 60 feet right-of-way.
- Curbs and gutters are discontinuous.
- Sidewalks are discontinuous, not present in most sections.
- Tree lawn/planting is sporadic and in some sections stretch all the way to the private property.
- There are existing electric poles in the tree lawn/planting strip or the edge of the curb at some sections of this street.
- Varying landuses.
- Bicycle, Pedestrians and Auto conflicts



KEY LOCATION PLAN

COST ESTIMATES:

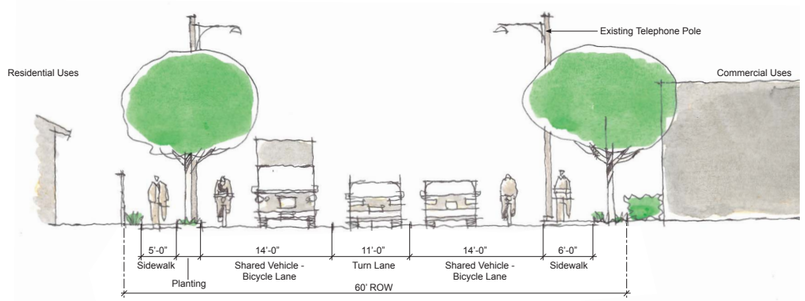
West Alabama Street Improvements:

Hardscape total:	$ 300,000
Softscape total:	$ 35,000
Contingency (20%):	$ 70,000
Grand total:	**$ 405,000**

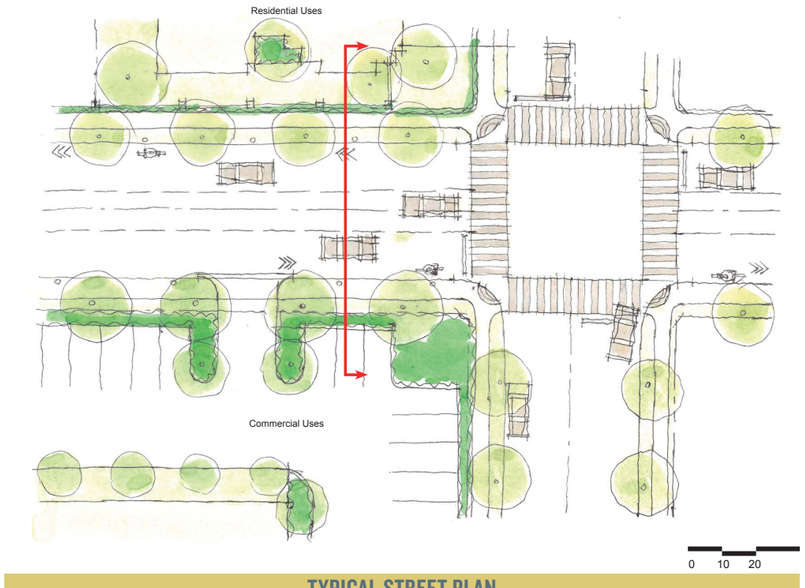
EXISTING STREET PHOTOS

Proposed Improvements:

- A redesign of the street to accommodate 5 to 6 feet of sidewalks with tree lawn/planting on both the sides.
- Shared vehicle and bicylce lane on each side with a center turn lane.
- The tree lawn/planting to be adjacent to the curb for the residential side neigborhood, providing a buffer from the trafic.
- The sidewalks to be adjacent to the curb at the mixed-use/commericial side redevelopment, allowing outdoor use spaces and amenities for the mixed-use needs and providing a buffer from the traffic.
- Street lights attached to existing electric poles provide a safe and pleasant pedestrian walkable environment.



TYPICAL STREET SECTION



TYPICAL STREET PLAN

CHARACTER PHOTOS

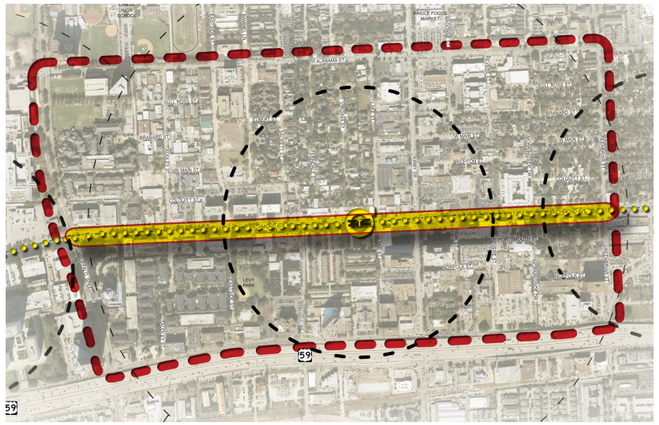
PROPOSED IMPROVEMENTS | WEST ALABAMA STREET

VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Existing Information & Challenges:

- Richmond Avenue currently accommodates six to four travel lanes seperated by a central boulevard at certain sections in a range of 120 to 80 feet right-of-way.
- Currently there is no on-street parking.
- Curbs and gutters are discontinuous.
- Sidewalks are discontinuous, missing in some sections.
- Tree lawn/landscaping are sporadic. There are existing electric poles in the boulevard for some sections of this street.
- Mix of uses, primarily office in nature.
- Landscaped median will be removed w/ tranist.
- Typically deep setbacks.



KEY LOCATION PLAN

COST ESTIMATES:

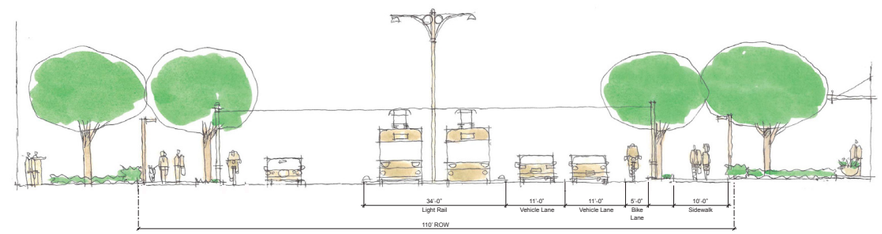
Richmond Avenue Improvements:

Hardscape total:	$ 1,100,000
Softscape total:	$ 60,000
Contingency (20%):	$ 250,000
Grand total:	**$ 1,410,000**

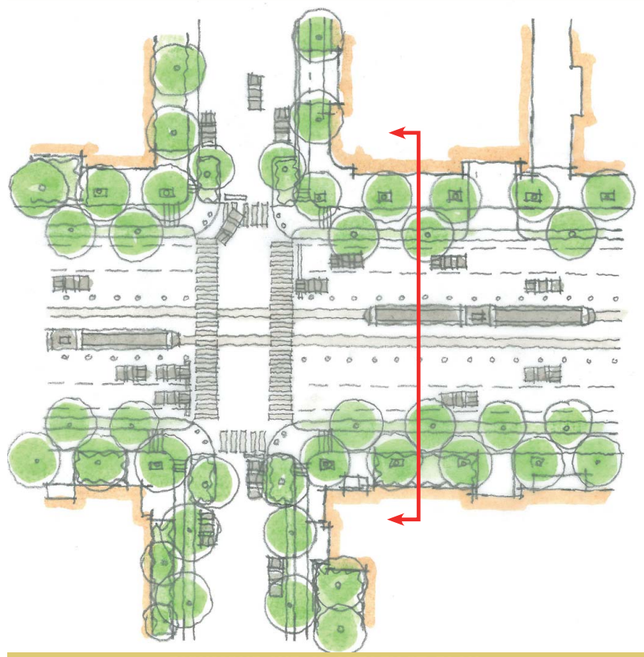
EXISTING STREET PHOTOS

Proposed Improvements:

- Richmond ave. has been plannned to be a transit corridor street, with transit running in the center of this street.
- A redesign of the street to accommodate 34 feet for the lightrail line in the center and 2 travel lanes on each side.
- Dedicated bike lanes on either sides of Richmond ave. next to the tree lawn/planting will serve as a east-west connector.
- The tree lawn/planting to be adjacent to the curb providing a buffer from the trafic.
- Sidewalks with landscaping sufficiently wide enough (approximately 20 feet) to give it a main street feel, allowing outdoor spaces and amenities for the retail/mixed-use needs and providing a buffer from the traffic.
- Street lights in the center of the boulevard (attached to existing electric poles where possible) will empahsize this corridor.

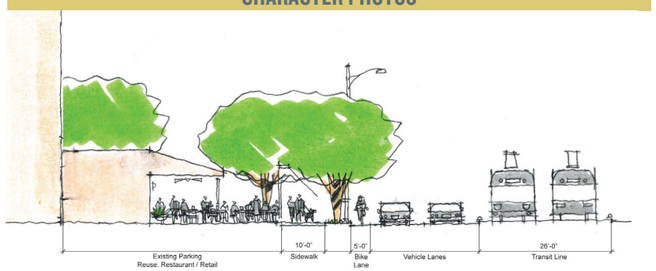


RICHMOND AVE. AT AUDLEY ST. SECTION



RICHMOND AVE. AT AUDLEY ST. PLAN

CHARACTER PHOTOS



RICHMOND AVE. AT EASTSIDE ST. SECTION

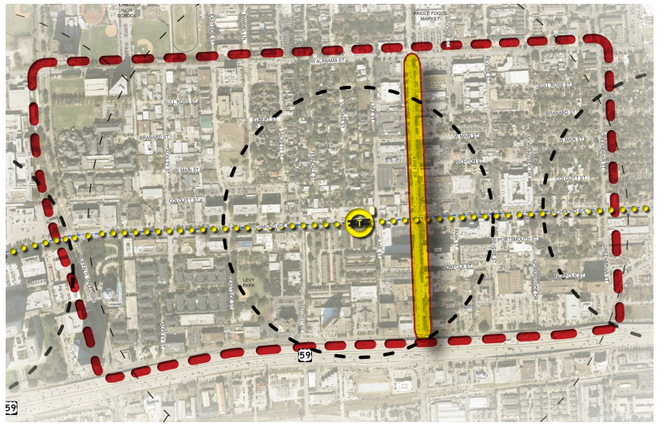
PROPOSED IMPROVEMENTS | RICHMOND AVENUE

VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Existing Information & Challenges:

- Kirby Drive currently accommodates six travel lanes with a central turn lane in a 100 feet right-of-way.
- To achieve 15' sidewalks and planting areas, additional dedication on the private side will be required.
- The New Kirby Drive project was started in 2008 and has incorporated the following;
- Planted approximately 150 new trees.
- The sidewalks are at least 5 feet wide while the entire "pedestrian way," a space that includes trees, benches and other features, range from 13 to 13 1/2 feet.
- To achieve streetscape improvements within only the current public right-of-way, reconstruction of existing sidewalk areas would be necessary which would increase project costs.



KEY LOCATION PLAN

COST ESTIMATES:

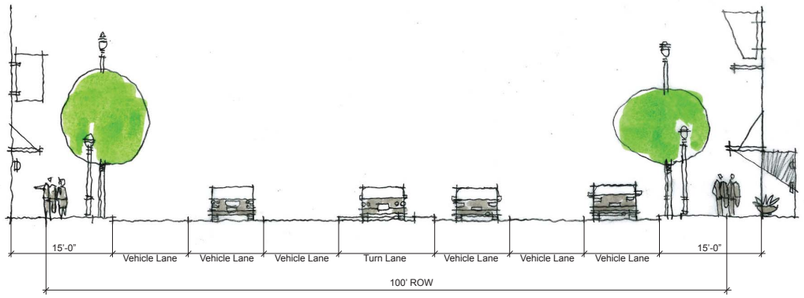
Kirby Drive Improvements (does not include property purchases for additional ROW):

Hardscape total:	$ 75,000
Softscape total:	$ 20,000
Contingency (20%):	$ 20,000
Grand total:	**$ 115,000**

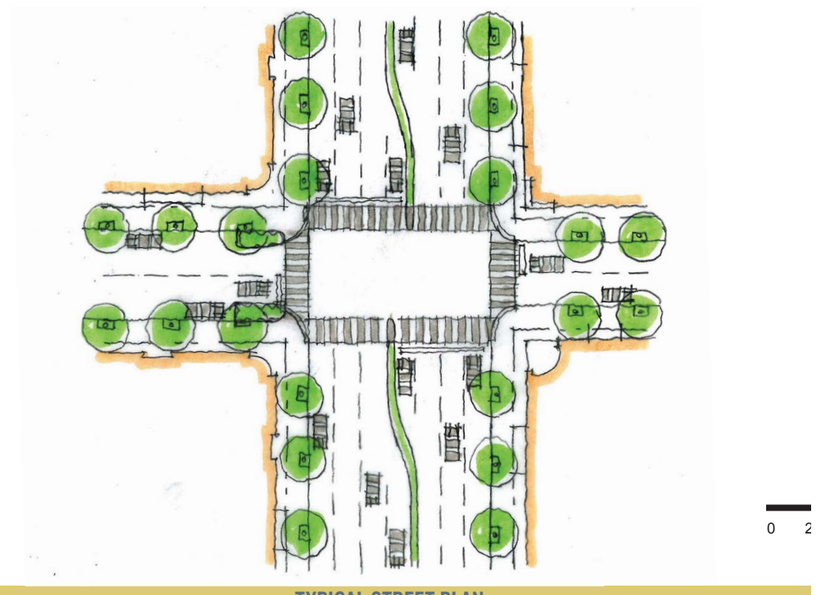
EXISTING STREET PHOTOS

Proposed Improvements:

- An update of street design to accommodate15 feet of sidewalks and tree/planting lawns on both the sides, with continuous curb and gutter.
- Street lights along with landscaping and pedestrian amenities at park edges would provide a pleasant pedestrian walkable environment.



TYPICAL STREET SECTION



TYPICAL STREET PLAN

CHARACTER PHOTOS

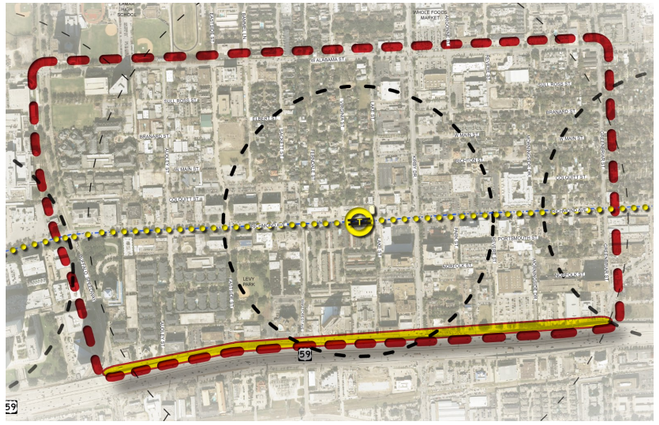
PROPOSED IMPROVEMENTS | KIRBY DRIVE

VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Existing Information & Challenges:

- US 59 Frontage Rd. currently accommodates two travel lanes.
- Curbs and gutters are discontinuous.
- Sidewalks are discontinuous, not present in certain sections or provided on private lots.
- Tree lawn/planting is sporadic and in some sections stretches all the way to the private property.
- Noise and Visual blight from the interstate.



KEY LOCATION PLAN

COST ESTIMATES:

US 59 Frontage Road Improvements:

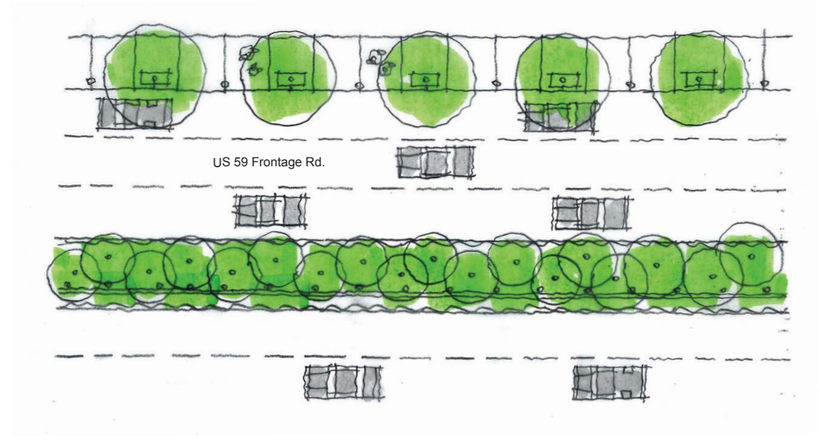
Hardscape total:	$ 100,000
Softscape total:	$ 175,000
Contingency (20%):	$ 55,000
Grand total:	**$ 330,000**

EXISTING STREET PHOTOS

Proposed Improvements:

- Dense tree planting along the interstate on the south side.
- A redesign of the street to accommodate 10 to 15 feet of sidewalks and tree lawns on the north side of the intersate.
- Landscape area with trees further north of the sidewalk where possible.

TYPICAL STREET SECTION



TYPICAL STREET PLAN

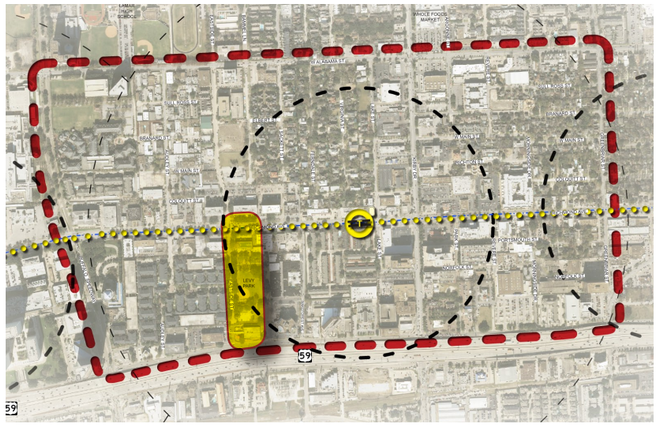
CHARACTER PHOTOS

PROPOSED IMPROVEMENTS | US 59 FRONTAGE ROAD

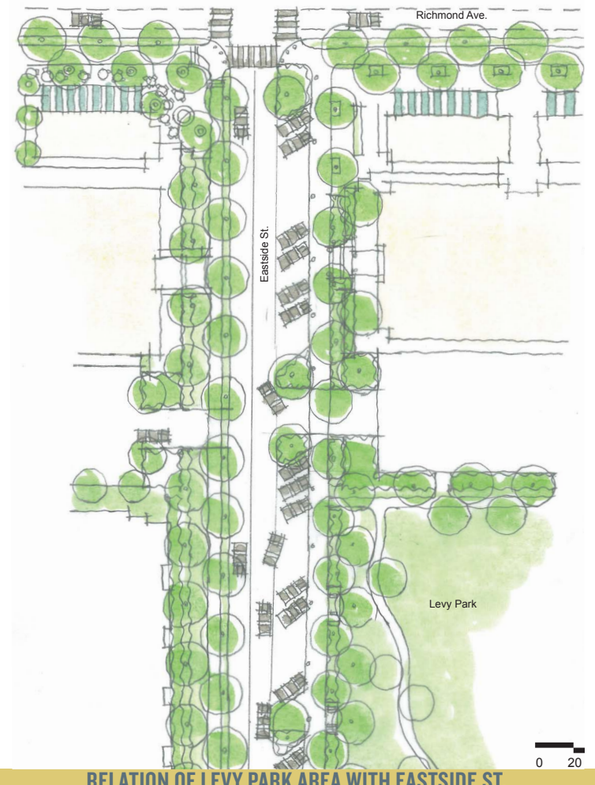
VMWP PROJECT # 0933 | HOUSTON, TX | AUGUST 5, 2010 | H-GAC

VAN METER WILLIAMS POLLACK LLP

Street and park Relation:



KEY LOCATION PLAN



RELATION OF LEVY PARK AREA WITH EASTSIDE ST.

CHARACTER PHOTOS

VI. APPENDICES

Table 1: Population and Households, 2000-2009

	Upper Kirby			City of Houston			Houston-Galveston-Brazoria CMSA		
	2000	*2009*	% Change	*2000*	*2009*	% Change	*2000*	*2009*	% Change
Population	3,280	4,008	22%	1,954,848	2,236,732	14%	4,669,571	5,766,155	23%
Households	2,070	2,517	22%	718,231	808,317	13%	1,639,401	1,990,733	21%
Average Household Size		1.57		2.67	2.72	2%	2.80	2.85	2%

Source: 2000 U.S. Census; Claritas, 2009; Strategic Economics, 2009.

Table 2: Housing Units, 2000-2009

	Upper Kirby			City of Houston			Houston-Galveston-Brazoria CMSA		
	2000	*2009*	% Change	*2000*	*2009*	% Change	*2000*	*2009*	% Change
Total Housing Units	2,353	3,000	27%	782,378	913,232	17%	1,777,902	2,203,745	24%
Occupied Housing Units	2,070	2,517	22%	718,231	808,317	13%	1,639,401	1,990,733	21%
% Vacant Housing Units	12.0%	16.1%	34%	8.2%	11.5%	40%	7.8%	9.7%	24%
% Owner-Occupied	23.1%	24.2%		45.8%	45.4%		60.7%	62.6%	
% Renter-Occupied	76.9%	75.8%		54.2%	54.6%		39.3%	37.4%	

Source: 2000 U.S. Census; Claritas, 2009; Strategic Economics, 2009.

Table 3: Household Types, 2000-2009

Household Types	Upper Kirby			City of Houston			Houston-Galveston-Brazoria CMSA		
	2000	2009		2000	2009	% change	2000	2009	% change
Single	59%	57%		30%	29%		23%	23%	
Other Non-Family	14%	15%		6%	8%		5%	6%	
Married, not Living with own Children	21%	17%		21%	21%		25%	25%	
Married, Living with own Children	3%	5%		23%	22%		30%	29%	
Other Family	3%	5%		20%	20%		17%	17%	
Total	100%	100%		100%	100%		100%	100%	
Total Households	2,208	2,517		718,897	808,317		1,640,843	1,990,733	

Source: 2000 U.S. Census; Claritas, 2009; Strategic Economics, 2009.

Table 4: Educational Attainment, 2000-2009

	Upper Kirby		City of Houston		Houston-Galveston-Brazoria CMSA	
	2000	2009	2000	2009	2000	2009
Less than High School Diploma	2.7%	2.7%	29.6%	29.4%	23.6%	22.9%
High school diploma	6.0%	5.9%	20.4%	20.4%	22.8%	22.7%
Some college or Associate Degree	20.2%	20.1%	23.0%	23.1%	27.1%	27.4%
Bachelor's Degree or Higher	71.1%	71.3%	27.0%	27.1%	26.5%	27.0%
Total	100%	100%	100%	100%	100%	100%

Table 5: Occupations of Residents, 2000-2009

	Upper Kirby				City of Houston				Houston-Galveston-Brazoria CMSA			
	2000		2009		2000		2009		2000		2009	
	#	%	#	%	#	%	#	%	#	%	#	%
Management, professional, and related occupations	1,706	66.7%	1,953	67.0%	291,220	33.9%	337,165	34.2%	746,560	35.2%	971,339	36.2%
Service occupations	168	6.6%	189	6.5%	134,831	15.7%	153,599	15.6%	289,480	13.6%	354,894	13.2%
Sales and office occupations	577	22.6%	651	22.3%	227,417	26.4%	260,773	26.4%	580,083	27.3%	738,559	27.5%
Farming, Fishing and Forestry	0	0.0%	0	0.0%	1,210	0.1%	1,366	0.1%	4,462	0.2%	5,611	0.2%
Construction, Extraction, and Maintenance	21	0.8%	23	0.8%	94,569	11.0%	107,208	10.9%	235,483	11.1%	289,428	10.8%
Production, Transportation, and Material Moving	86	3.4%	99	3.4%	110,714	12.9%	126,182	12.8%	265,547	12.5%	326,298	12.1%
Total Workers	2,558	100%	2,915	100%	859,961	100%	986,293	100%	2,121,615	100%	2,686,129	100%

Source: 2000 U.S. Census; Claritas, 2009; Strategic Economics, 2009.

Table 6: Age of Residents, 2009

	Upper Kirby		City of Houston		Houston-Galveston-Brazoria CMSA	
	#	%	#	%	#	%
Under 21	450	11%	706,845	32%	1,859,327	32%
21-24	61	2%	118,677	5%	311,133	5%
25-34	1,200	30%	362,188	16%	846,141	15%
35-44	787	20%	338,518	15%	852,021	15%
45-64	1,140	28%	509,299	23%	1,407,234	24%
65 +	370	9%	201,205	9%	490,299	9%
Total Population	4,008	100%	2,236,732	100%	5,766,155	100%

Source: Claritas, 2009; Strategic Economics, 2009.

Table 7: Household Income, 2000-2009

	Upper Kirby				City of Houston				Houston-Galveston-Brazoria CMSA			
	2000		2009		2000		2009		2000		2009	
	#	%	#	%	#	%	#	%	#	%	#	%
Less than $15,000	273	12.4%	235	9.3%	132,457	18.4%	126,157	15.6%	234,724	14.3%	226,761	11.4%
$15,000 to $24,999	235	10.6%	191	7.6%	105,887	14.7%	99,416	12.3%	197,302	12.0%	189,450	9.5%
$25,000 to $34,999	252	11.4%	239	9.5%	104,792	14.6%	103,968	12.9%	207,521	12.6%	207,494	10.4%
$35,000 to $49,999	281	12.7%	288	11.4%	117,451	16.3%	133,808	16.6%	261,203	15.9%	296,036	14.9%
$50,000 to $74,999	406	18.4%	370	14.7%	116,362	16.2%	138,678	17.2%	310,292	18.9%	369,773	18.6%
$75,000 to $99,999	256	11.6%	328	13.0%	57,368	8.0%	75,216	9.3%	181,458	11.1%	246,579	12.4%
$100,000 to $149,999	239	10.8%	435	17.3%	49,446	6.9%	75,445	9.3%	155,100	9.5%	273,591	13.7%
$150,000 or more	266	12.0%	431	17.1%	35,134	4.9%	55,629	6.9%	93,243	5.7%	181,049	9.1%
Total	2,208	100%	2,517	100%	718,897	100%	808,317	100%	1,640,843	100%	1,990,733	100%
Median (2009 $)	$69,503		$70,620		$47,235		$43,365		$57,742		$55,113	

Source: 2000 U.S. Census; Claritas, 2009; Strategic Economics, 2009.

Tables 8-10: Workplace Locations of Upper Kirby Residents

Zip Code	Count	Share
77027	260	14.5%
77002	189	10.6%
77030	117	6.5%
77056	90	5.0%
77098	71	4.0%
77046	71	4.0%
77057	63	3.5%
77004	50	2.8%
77019	47	2.6%
77005	37	2.1%
All Other Zip Codes	792	44.3%

City	Count	Share
Houston	1,506	84.3%
Sugar Land	24	1.3%
Bellaire	23	1.3%
Dallas	15	0.8%
San Antonio	10	0.6%
Southside Place	8	0.4%
Stafford	6	0.3%
Beaumont	6	0.3%
Austin	6	0.3%
Pearland	5	0.3%
All Other Cities	178	10.0%

County	Count	Share
Harris Co.	1,629	91.2%
Fort Bend Co.	39	2.2%
Dallas Co.	27	1.5%
Bexar Co.	11	0.6%
Montgomery Co.	9	0.5%
Brazoria Co.	9	0.5%
Travis Co.	7	0.4%
Jefferson Co.	6	0.3%
Galveston Co.	5	0.3%
Brazos Co.	5	0.3%
All Other Counties	40	2.2%

Source: LEHD 2006, Strategic Economics 2009

Table 11: Employment Located in Upper Kirby by Industry

Sector	Count	Share
Agriculture, Forestry, Fishing and Hunting	2	0.0%
Mining, Quarrying, and Oil and Gas Extraction	91	0.8%
Utilities	3	0.0%
Construction	315	2.9%
Manufacturing	39	0.4%
Wholesale Trade	144	1.3%
Retail Trade	301	2.8%
Transportation and Warehousing	36	0.3%
Information	242	2.2%
Finance and Insurance	586	5.4%
Real Estate and Rental and Leasing	1,615	14.9%
Professional, Scientific, and Technical Services	1,744	16.1%
Management of Companies and Enterprises	131	1.2%
Administration & Support, Waste Management and Remediation	2,361	21.8%
Educational Services	462	4.3%
Health Care and Social Assistance	799	7.4%
Arts, Entertainment, and Recreation	48	0.4%
Accommodation and Food Services	1,370	12.7%
Other Services (excluding Public Administration)	425	3.9%
Public Administration	113	1.0%
Total	**10,827**	**100.0%**

Source: LEHD 2006, Strategic Economics 2009

Tables 12-14: Residences of Upper Kirby Workers

Zip Code	Count	Share
77045	172	1.6%
77035	171	1.6%
77098	160	1.5%
77036	159	1.5%
77489	158	1.5%
77006	158	1.5%
77009	152	1.4%
77057	145	1.3%
77063	144	1.3%
77096	142	1.3%
All Other Zip Codes	9,266	85.6%

City	Count	Share
Houston	6,365	58.8%
Missouri City	169	1.6%
Pasadena	151	1.4%
Sugar Land	129	1.2%
Pearland	105	1.0%
Austin	92	0.8%
San Antonio	84	0.8%
Bellaire	82	0.8%
Mission Bend	81	0.7%
West University Place	78	0.7%
All Other Cities	3,491	32.2%

County	Count	Share
Harris Co.	8,471	78.2%
Fort Bend Co.	806	7.4%
Brazoria Co.	332	3.1%
Galveston Co.	202	1.9%
Montgomery Co.	176	1.6%
Bexar Co.	94	0.9%
Travis Co.	92	0.8%
Dallas Co.	63	0.6%
Jefferson Co.	51	0.5%
Hidalgo Co.	46	0.4%
All Other Counties	494	4.6%

Source: LEHD 2006, Strategic Economics 2009

Table 1: TAZs encompassing Upper Kirby study area				
TAZ	North boundary	South boundary	West Boundary	East Boundary
1134	West Alabama St.	Richmond Ave.	Kirby Dr.	Shepherd Dr.
1135	Richmond Ave.	US 59	Kirby Dr.	Shepherd Dr.
1148	West Alabama St.	Richmond Ave.	Buffalo Spdwy.	Kirby Dr.
1149	Richmond Ave.	US 59	Buffalo Spdwy.	Kirby Dr.

Table 2: Total Person-Trips by TAZ for Year 2009				
Traffic Analysis Zone	Home-Based Work	Home-Based Non-Work	Non-Home-Based	TOTAL
1134	4,135	6,523	6,267	16,925
1135	3,956	5,177	7,841	16,974
1148	9,919	12,080	18,461	40,460
1149	6,704	7,938	12,690	27,332
TOTAL	24,714	31,718	45,259	101,691

Table 3: Data for Estimate to Trip Distance		
Trip Purpose	Regional Avg Trip Distance (mi)	Number of Trips in TAZs
Home-Based Work	20.32	24,714
Home-Based Non-Work	9.81	31,718
Non-Home-Based	13.05	45,259
TOTAL		101,691
Weighted Average	13.81	

Table 4: Data for Estimate to Vehicle Occupancy		
Trip Purpose	Regional Avg Occupancy	Number of Trips in TAZs
Home-Based Work	1.10	24,714
Home-Based Non-Work	1.53	31,718
Non-Home-Based	1.24	45,259
TOTAL		101,691
Weighted Average	1.30	

Table 5. Vehicle Mix and Average Emission Rates by EPA Vehicle Type									
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	All Vehicles
Vehicle Type									
Local Roads	59.0%	24.2%	7.2%	3.2%	0.2%	0.3%	5.9%	0.1%	100.0%
Emissions									
VOC (g/mile)	0.40	0.47	0.45	1.36	0.06	0.10	1.12	4.65	0.50
NOx (g/mile)	0.62	0.66	0.77	3.87	0.50	0.54	5.58	0.97	1.03

Livable Centers - Upper Kirby

Eastside St. from Richmond Ave. to West Alabama St.

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	3,000	LF	$2.00	$6,000.00	
Remove Pavement	6,667	SY	$6.00	$40,000.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	1,000	LF	$2.25	$2,250.00	
8" Pavement	7,000	SY	$30.00	$210,000.00	
6" Lime Treated Subgrade	7,000	SY	$1.65	$11,550.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	667	SY	$5.00	$3,333.33	
Concrete Sidewalk	27,000	SF	$4.50	$121,500.00	
ADA Compliant Ramps	10	EA	$1,100.00	$11,000.00	
Street Crossing Markings	2	EA	$1,200.00	$2,400.00	
Special Pavement	1,920	SF	$11.00	$21,120.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	10	EA	$4,500.00	$45,000.00	Decorative UK standard
Pedestrian Lights	50	EA	$3,500.00	$175,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	4	EA	$2,000.00	$8,000.00	
Trash Receptacles	2	EA	$1,200.00	$2,400.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	1	LS	$100,000.00	$100,000.00	
			Subtotal	$489,420.00	
Softscape					
30 gal. Street Trees	114	EA	$185.00	$21,090.00	
5 gal. Shrubs	3,000	SF	$5.50	$16,500.00	
Bermuda Sod	4,500	SF	$0.40	$1,800.00	
Irrigation Zones	3	Zone	$1,800.00	$5,400.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$47,290.00	
			Hardscape and Softscape Total	$536,710.00	
			20% Contingency	$107,342.00	
				Grand Total	**$644,052.00**

Eastside St. from Richmond Ave. to US 59

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	1,800	LF	$2.00	$3,600.00	
Remove Pavement	4,000	SY	$6.00	$24,000.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	1,800	LF	$2.25	$4,050.00	
8" Pavement	4,200	SY	$30.00	$126,000.00	
6" Lime Treated Subgrade	4,200	SY	$1.65	$6,930.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	16,200	SF	$4.50	$72,900.00	
ADA Compliant Ramps	4	EA	$1,100.00	$4,400.00	
Street Crossing Markings	1	EA	$1,200.00	$1,200.00	
Special Pavement	1,280	SF	$11.00	$14,080.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	6	EA	$4,500.00	$27,000.00	Decorative UK standard
Pedestrian Lights	30	EA	$3,500.00	$105,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	4	EA	$2,000.00	$8,000.00	
Trash Receptacles	2	EA	$1,200.00	$2,400.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	1	LS	$150,000.00	$150,000.00	
			Subtotal	$387,980.00	
Softscape					
30 gal. Street Trees	66	EA	$185.00	$12,210.00	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	2,700	SF	$0.40	$1,080.00	
Irrigation Zones	2	Zone	$1,800.00	$3,600.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$19,390.00	
			Hardscape and Softscape Total	$407,370.00	
			20% Contingency	$81,474.00	
				Grand Total	**$488,844.00**

US 59 Frontage from Kirby to Buffalo Speedway

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	1,500	LF	$2.25	$3,375.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	1,333	SY	$5.00	$6,666.67	
Concrete Sidewalk	18,000	SF	$4.50	$81,000.00	
ADA Compliant Ramps	12	EA	$1,100.00	$13,200.00	
Street Crossing Markings	1	EA	$1,200.00	$1,200.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	0	EA	$4,500.00	$0.00	Decorative UK standard
Pedestrian Lights	0	EA	$3,500.00	$0.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	0	LS	$150,000.00	$0.00	
			Subtotal	$98,400.00	
Softscape					
30 gal. Street Trees	100	EA	$185.00	$18,500.00	
Freeway Edge Planting	25,500	SF	$5.50	$140,250.00	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	9,000	SF	$0.40	$3,600.00	
Irrigation Zones	4	Zone	$1,800.00	$7,200.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$172,050.00	
			Hardscape and Softscape Total	$270,450.00	
			20% Contingency	$54,090.00	
			Grand Total		**$324,540.00**

Alabama from Kirby to Buffalo Speedway

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	1,500	LF	$2.25	$3,375.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	1,944	SY	$5.00	$9,722.22	
Concrete Sidewalk	17,500	SF	$4.50	$78,750.00	
ADA Compliant Ramps	16	EA	$1,100.00	$17,600.00	
Street Crossing Markings	7	EA	$1,200.00	$8,400.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	23	EA	$4,500.00	$105,000.00	Decorative UK standard
Pedestrian Lights	25	EA	$3,500.00	$87,500.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	0	LS	$150,000.00	$0.00	
			Subtotal	$300,250.00	
Softscape					
30 gal. Street Trees	117	EA	$185.00	$21,583.33	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	10,500	SF	$0.40	$4,200.00	
Irrigation Zones	2	Zone	$1,800.00	$3,600.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$31,883.33	
			Hardscape and Softscape Total	$332,133.33	
			20% Contingency	$66,426.67	
			Grand Total		**$398,560.00**

Wakeforest from US 59 to Richmond Ave

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	0	LF	$2.25	$0.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	5,250	SF	$4.50	$23,625.00	
ADA Compliant Ramps	2	EA	$1,100.00	$2,200.00	
Street Crossing Markings	2	EA	$1,200.00	$2,400.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	7	EA	$4,500.00	$31,500.00	Decorative UK standard
Pedestrian Lights	18	EA	$3,500.00	$61,250.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	0	LS	$150,000.00	$0.00	
			Subtotal	$123,975.00	
Softscape					
30 gal. Street Trees	35	EA	$185.00	$6,475.00	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	0	SF	$0.40	$0.00	
Irrigation Zones	2	Zone	$1,800.00	$3,600.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$12,575.00	
			Hardscape and Softscape Total	$136,550.00	
			20% Contingency	$27,310.00	
			Grand Total		**$163,860.00**

Richmond from Kirby to Buffalo Speedway

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	0	LF	$2.25	$0.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	65,000	SF	$4.50	$292,500.00	
ADA Compliant Ramps	20	EA	$1,100.00	$22,000.00	
Street Crossing Markings	12	EA	$1,200.00	$14,400.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	22	EA	$4,500.00	$97,500.00	Decorative UK standard
Pedestrian Lights	108	EA	$3,500.00	$379,166.67	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	4	EA	$1,200.00	$4,800.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	2	LS	$150,000.00	$300,000.00	
			Subtotal	$1,113,366.67	
Softscape					
30 gal. Street Trees	217	EA	$185.00	$40,083.33	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	16,250	SF	$0.40	$6,500.00	
Irrigation Zones	4	Zone	$1,800.00	$7,200.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$56,283.33	
			Hardscape and Softscape Total	$1,169,650.00	
			20% Contingency	$233,930.00	
			Grand Total		**$1,403,580.00**

Lake from Alabama to Colquit

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	0	LF	$2.25	$0.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	15,600	SF	$4.50	$70,200.00	
ADA Compliant Ramps	10	EA	$1,100.00	$11,000.00	
Street Crossing Markings	5	EA	$1,200.00	$6,000.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	9	EA	$4,500.00	$39,000.00	Decorative UK standard
Pedestrian Lights	0	EA	$3,500.00	$0.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	0	EA	$1,500.00	$0.00	
Art Enhancement	0	LS	$150,000.00	$0.00	
			Subtotal	$126,200.00	
Softscape					
30 gal. Street Trees	87	EA	$185.00	$16,033.33	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod	0	SF	$0.40	$0.00	
Irrigation Zones	2	Zone	$1,800.00	$3,600.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$22,133.33	
			Hardscape and Softscape Total	$148,333.33	
			20% Contingency	$29,666.67	
			Grand Total		**$178,000.00**

Lake Street Kiss and Ride Plazas

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	0	SY	$6.00	$0.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	0	LF	$2.25	$0.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	13,000	SF	$4.50	$58,500.00	
ADA Compliant Ramps	5	EA	$1,100.00	$5,500.00	
Street Crossing Markings	2	EA	$1,200.00	$2,400.00	
Special Pavement	3,360	SF	$11.00	$36,960.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	4	EA	$4,500.00	$19,500.00	Decorative UK standard
Pedestrian Lights	22	EA	$3,500.00	$75,833.33	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	0	EA	$2,000.00	$0.00	
Trash Receptacles	4	EA	$1,200.00	$4,800.00	
Directional Signage	2	EA	$1,500.00	$3,000.00	
Art Enhancement	1	LS	$150,000.00	$150,000.00	
			Subtotal	$356,493.33	
Softscape					
30 gal. Street Trees	43	EA	$185.00	$8,016.67	
5 gal. Shrubs	0	SF	$5.50	$0.00	
Bermuda Sod		SF	$0.40	$0.00	
Irrigation Zones	4	Zone	$1,800.00	$7,200.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$17,716.67	
			Hardscape and Softscape Total	$374,210.00	
			20% Contingency	$74,842.00	
			Grand Total		**$449,052.00**

Pedestrian Linkage at West Main to Eastside

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	125	LF	$2.00	$250.00	
Remove Pavement	194	SY	$6.00	$1,166.67	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	125	LF	$2.25	$281.25	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	1,250	SF	$4.50	$5,625.00	
ADA Compliant Ramps	1	EA	$1,100.00	$1,100.00	
Street Crossing Markings	0	EA	$1,200.00	$0.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	0	EA	$4,500.00	$0.00	Decorative UK standard
Pedestrian Lights	2	EA	$3,500.00	$7,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	1	EA	$2,000.00	$2,000.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	1	EA	$1,500.00	$1,500.00	
Fence	145	LF	$50.00	$7,250.00	
Gate	1	EA	$20,000.00	$20,000.00	
			Subtotal	$44,475.00	
Softscape					
30 gal. Street Trees	4	EA	$185.00	$770.83	
5 gal. Shrubs	375	SF	$5.50	$2,062.50	
Bermuda Sod		SF	$0.40	$0.00	
Irrigation Zones	1	Zone	$1,800.00	$1,800.00	
2" Irrigation water meter	0	EA	$2,500.00	$0.00	
			Subtotal	$4,633.33	
			Hardscape and Softscape Total	$49,108.33	
			20% Contingency	$9,821.67	
			Grand Total		**$58,930.00**

Pedestrian Linkage at Branard to Eastside

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	125	LF	$2.00	$250.00	
Remove Pavement	194	SY	$6.00	$1,166.67	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	125	LF	$2.25	$281.25	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	1,250	SF	$4.50	$5,625.00	
ADA Compliant Ramps	1	EA	$1,100.00	$1,100.00	
Street Crossing Markings	0	EA	$1,200.00	$0.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	0	EA	$4,500.00	$0.00	Decorative UK standard
Pedestrian Lights	2	EA	$3,500.00	$7,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	1	EA	$2,000.00	$2,000.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	1	EA	$1,500.00	$1,500.00	
Fence	145	LF	$50.00	$7,250.00	
Gate	1	EA	$20,000.00	$20,000.00	
			Subtotal	$44,475.00	
Softscape					
30 gal. Street Trees	4	EA	$185.00	$770.83	
5 gal. Shrubs	375	SF	$5.50	$2,062.50	
Bermuda Sod		SF	$0.40	$0.00	
Irrigation Zones	1	Zone	$1,800.00	$1,800.00	
2" Irrigation water meter	0	EA	$2,500.00	$0.00	
			Subtotal	$4,633.33	
			Hardscape and Softscape Total	$49,108.33	
			20% Contingency	$9,821.67	
			Grand Total		**$58,930.00**

Pedestrian Linkage at Morningside to Richmond Avenue

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	311	SY	$6.00	$1,866.67	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	0	LF	$2.25	$0.00	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	2,000	SF	$4.50	$9,000.00	
ADA Compliant Ramps	2	EA	$1,100.00	$2,200.00	
Street Crossing Markings	0	EA	$1,200.00	$0.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	0	EA	$4,500.00	$0.00	Decorative UK standard
Pedestrian Lights	2	EA	$3,500.00	$7,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	1	EA	$2,000.00	$2,000.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	1	EA	$1,500.00	$1,500.00	
Fence	220	LF	$50.00	$11,000.00	
Gate	1	EA	$20,000.00	$20,000.00	
			Subtotal	$52,700.00	
Softscape					
30 gal. Street Trees	7	EA	$185.00	$1,233.33	
5 gal. Shrubs	600	SF	$5.50	$3,300.00	
Bermuda Sod		SF	$0.40	$0.00	
Irrigation Zones	1	Zone	$1,800.00	$1,800.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$8,833.33	
			Hardscape and Softscape Total	$61,533.33	
			20% Contingency	$12,306.67	
			Grand Total		**$73,840.00**

Pedestrian Linkage at Virginia to Richmond Avenue

Item	Quantity	Unit	Unit Cost	Item Total	Comment
Hardscape					
Remove Curb	0	LF	$2.00	$0.00	
Remove Pavement	1,100	SY	$6.00	$6,600.00	
Remove Driveway	0	SY	$6.00	$0.00	
Curb	110	LF	$2.25	$247.50	
8" Pavement	0	SY	$30.00	$0.00	
6" Lime Treated Subgrade	0	SY	$1.65	$0.00	
Lime (8%)	0	TON	$140.00	$0.00	
Driveway	0	SY	$40.00	$0.00	
Remove Sidewalk	0	SY	$5.00	$0.00	
Concrete Sidewalk	2,250	SF	$4.50	$10,125.00	
ADA Compliant Ramps	2	EA	$1,100.00	$2,200.00	
Street Crossing Markings	0	EA	$1,200.00	$0.00	
Special Pavement	0	SF	$11.00	$0.00	
Pavement Markings	0	LF	$0.45	$0.00	
Street Lights	0	EA	$4,500.00	$0.00	Decorative UK standard
Pedestrian Lights	2	EA	$3,500.00	$7,000.00	Decorative UK standard
4" Conduit	0	LF	$15.00	$0.00	
Benches	1	EA	$2,000.00	$2,000.00	
Trash Receptacles	0	EA	$1,200.00	$0.00	
Directional Signage	1	EA	$1,500.00	$1,500.00	
Fence		LF	$50.00	$0.00	
Gate	1	EA	$20,000.00	$20,000.00	
			Subtotal	$42,825.00	
Softscape					
30 gal. Street Trees	8	EA	$185.00	$1,387.50	
5 gal. Shrubs	675	SF	$5.50	$3,712.50	
Bermuda Sod		SF	$0.40	$0.00	
Irrigation Zones	1	Zone	$1,800.00	$1,800.00	
2" Irrigation water meter	1	EA	$2,500.00	$2,500.00	
			Subtotal	$9,400.00	
			Hardscape and Softscape Total	$52,225.00	
			20% Contingency	$10,445.00	
			Grand Total		**$62,670.00**