



East End Livable Centers Plan

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Prepared for

Greater East End Management District
Houston-Galveston Area Council



Prepared by

The Goodman Corporation
Cooper Carry
Clark Condon Associates
Brave/Architecture



The Goodman Corporation

is a nationally recognized transportation and urban planning consulting firm possessing a wide range of planning skills complemented with a unique understanding of the governmental processes for funding and implementing complex publicly sponsored transportation and land use initiatives. Since 1980 TGC has specialized in assisting public and private clients in planning, funding, and implementing land use and mobility projects. In addition to a strong reputation in innovative planning, TGC is accomplished in leading multi-disciplinary teams to prepare various planning products to support successful development and redevelopment initiatives. Public involvement is the cornerstone of TGC's approach to transportation and urban planning. TGC is exceptionally adept at engaging elected leadership, staff, and the community-at-large to actively participate in the planning process. TGC is very aware of how strong community support can be a catalyst for securing available public funding resources.

Members of TGC staff directly involved in the publication of this report include the following:

Barry M. Goodman, President
Carl P. Sharpe, A.I.C.P., Vice President, Planning & Urban Design
John D. Carrara, Jr., Vice President
Nian Liu, Associate for Project Development
Yvonne Fedee, Senior Associate
Laware Kendrick, Product Development Director

Executive Summary **ES**

The East End Livable Centers program is a part of the Houston-Galveston Area Council's (H-GAC) Livable Centers strategy and reflects its goals and objectives in the analyses, recommendations, and benefits to be derived. One of the goals of H-GAC's Livable Centers strategy is to improve access while reducing the need for mobility by single-occupant vehicles (SOV). Through a concentration and a mix of land uses, Livable Centers projects allow for greater accessibility by a variety of transportation modes, including walking, bicycling, and transit. In addition to enhancing mobility choices, Livable Centers projects are expected to produce economic, environmental, and "quality of place" benefits for the region.

An H-GAC Livable Centers project category has been created in the Transportation Improvement Program (TIP) and the Regional Transportation Plan (RTP) and sponsors have proposed planning and implementing Livable Centers projects such as the East End Livable Centers project. These are areas that have a concentration of jobs, shopping, entertainment, and/or housing. Clustering these activities creates opportunities for walking, bicycling, and transit trips, thus reducing the need for automobile travel. The first H-GAC Livable Centers project area selected was the Greater East End. The project area is bordered by US 59, York (Hirsch), Clinton (Jensen), and Harrisburg.

The Greater East End Management District project area contains a mix of land uses made up of a variety of neighborhoods, some older neighborhoods in need of revitalization and some newly developed neighborhoods along with condominiums, townhouses, and apartments. Residential land uses comprise about 50 percent of the area. The other major land uses are light industrial and moderate amounts of commercial and institutional uses. In addition to opportunities to increase walkability and transit use, a significant opportunity exists in the form of vacant and underutilized property located in close proximity to Houston's burgeoning downtown. This East End Livable Centers project would address the following needs:



Figure ES.1 – Project Area Boundaries

- Conceptual Master Plan
- Plan to Improve Pedestrian/Transit Access
- Infill/Mixed-Use Strategy and Land Use Program
- Conceptual Design of Guadalupe Park and Surrounding Area
- Urban Form Vision of Navigation Boulevard and Surrounding Neighborhoods
- Measurable Benefits of Resulting Reductions in Vehicle-Miles Traveled (VMT)
- Measurable Emission Reduction Benefits
- Economic Benefits
- Cost Estimates and Funding Sources

Descriptions are provided of important aspects and results of the analysis, planning, and design associated with each of the items listed above for the East End Livable Centers project.

Conceptual Master Plan

An analysis of the project area revealed that it was a discontinuous landscape of land uses lacking identity, connectivity, and structure, with poor pedestrian infrastructure, isolated landmarks, disruptive truck traffic, and inadequate access to transit. A conceptual Master Plan was developed focused on new mixed-use development opportunities, enhanced connectivity through bicycle infrastructure, pedestrian improvements and enhanced access to transit, urban forms that stress a visible sustainable community structure and sense of place, opportunities for gateways, and maximizing the benefits of METRO's light rail on Harrisburg. *Figure ES.2* illustrates these urban fabric characteristics.

A more detailed level of analysis and design focused on achieving two of the most important goals of H-GAC's Livable Centers strategy, improved pedestrian/transit access and infill/mixed-use development.

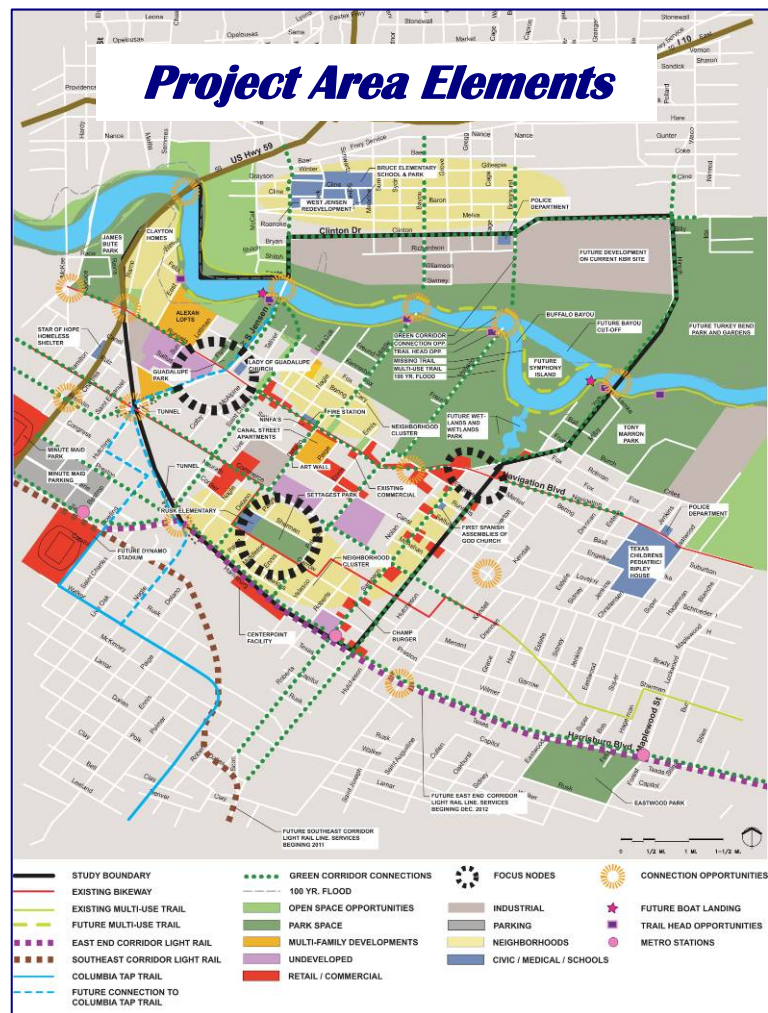


Figure ES.2 – East End Project Area Elements

Improved Pedestrian/Transit Access

The project area has excellent METRO transit service and very high ridership on the major transit/pedestrian corridors on *Figure ES.3*. These major transit/pedestrian corridors include Navigation, Canal, Sampson, and York each of which will receive landscape and streetscape improvements. These improvements will result in measurable increased ridership and reduced congestion, emissions, and accidents.

A variety of alternative designs received public input through five stakeholder advisory committee meeting and three general public open houses. These alternatives were voted on by the participants at the meetings and events and the selected design examples are shown in *Figure ES.4*. All of the features presented in these example treatments were designed with the application of elements that are 80 percent federally fundable.

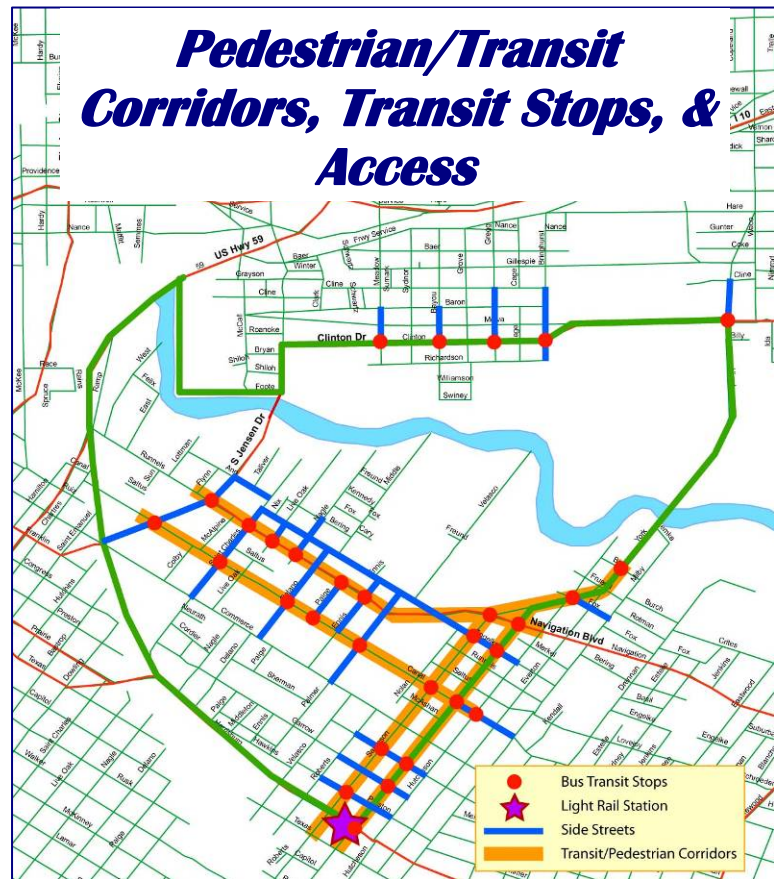


Figure ES.3 – Pedestrian/Transit Master Plan



Figure ES.4 – Recommended Design Examples

The curb-to-property line dimensions on Navigation, Sampson, and York will accommodate the example recommended designs. The recommended bulb-out design on Navigation offers the opportunity to provide a high-quality pedestrian-oriented walkable cross-section that also provides an opportunity to enhance transit access and, thereby, ridership, while calming the truck traffic on Navigation destined to the Port of Houston. Therefore, it would result in creating emission benefits, increased safety, and enhanced infill/mixed-use development for commercial uses on this important East End boulevard.

The wide cross-section on Sampson and York will be treated in a way that enhances the neighborhoods that abut these corridors using pedestrian-oriented lighting, landscaping, and wider sidewalks appropriate to their urban form. This treatment will enhance safety, encourage pedestrian activity, and increase transit ridership by improving access to the stops serving these corridors. The curb-to-property line dimensions on Canal are inadequate to provide even a minimum sidewalk width, which would violate Federal Americans with Disabilities Act (ADA) requirements and would inhibit pedestrian use and transit access. The recommendation is to widen the sidewalks to provide the cross-section illustrated in *Figure ES.4*. Recommended treatments for these corridors would include the following elements:

- Landscape (street trees, ground cover, and planters)
- Streetscape (street furniture such as benches and waste receptacles, pedestrian-oriented lighting, and bike storage).
- Transit shelters
- Sidewalks
- ADA treatments (ramps)
- Wayfinding signage
- Limited public art

Infill/Mixed-Use Strategy and Land Use Program

Because the project area is located immediately adjacent to downtown, great interest in its redevelopment already has been created and much of the redevelopment has begun. New townhouse development has been constructed on Navigation, Clinton, Commerce, Canal, and at dispersed locations throughout the area. Most of the vacant property is currently owned by developers who are waiting for the appropriate moment to develop. In addition to the project area's proximity to a growing and prosperous downtown, METRO has begun construction on the Harrisburg Light Rail Transit (LRT) line on Harrisburg, linking downtown with the Magnolia Street Transit Center, which is located to the east of the project area. A three-step process was employed to develop a mixed-use program for each major corridor beginning with a search of Harris County Appraisal District (HCAD) records to identify the amount and location of vacant property on each corridor (*Table ES.1*).

<i>Table ES.1 – Vacant Property</i>	
<i>Corridor</i>	<i>Sq. Ft.</i>
Navigation	177,174
Canal	457,680
Sampson	173,939
York	289,446
Jensen	326,641
<i>Total</i>	<i>1,424,880</i>

The second step in the process was development of the mix of uses that could be feasible in each corridor and the site coverage and building heights recommended in the Institute of Transportation Engineers' (ITE) *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*. This resulted in the 20-year potential buildout land use program presented in *Table ES.2*.

Table ES.2 – Mixed-Use Development Program at 20-Year Buildout					
Corridor	Retail (sq. ft.)	Office (sq. ft.)	Services (sq. ft.)	Light Industry (sq. ft.)	Housing (units*)
Navigation	35,435	70,870	70,870	4,429	43
Canal	34,326	91,536	91,536	114,420	110
York	14,472	57,889	57,889	14,472	278
Sampson	8,697	34,788	34,788	8,697	167
Jensen	48,996	130,656	130,656	16,332	105
Total	141,926	385,739	385,739	158,350	703
* Assumes 1,500 sq. ft. average.					

This program is based on balancing the current corridor development pattern (commercial, residential, and/or mixed use) with a desired mix of uses designed to reduce automobile use and the building forms recommended in ITE's *Context Sensitive Solutions*.

Conceptual Design Opportunities and Recommendations

The Master Plan identified a special design opportunity that focused on Guadalupe Park and the intersection of Navigation and Jensen. The park is a major community feature currently isolated by wide busy streets with truck traffic problems and park uses that are not conducive to community activities. The design team developed a multi-phased sequence to improve the park's program of activities and encourage community use based on input from the advisory committee and the public.

Phase 1 consists of demolition of the existing park and its structures to create an open lawn, community garden, water feature, and community market. Pedestrian improvements will be installed along Navigation and Jensen, such as redesigning the street texture and creating opportunities for the use of a median on Navigation (*Figure ES.5*).

Phase 2 consists of a new improved Navigation/Jensen intersection to create pedestrian accessibility to the park and plaza. A double T intersection gives the right-of-way to pedestrians (with clear, safe, and short/direct crossings) before vehicles and trucks.

Phase 3 consists of the demolition of the existing Talento Bilingue Building to be able to connect the park to the Bayou. A new Museum/Visitor Center and new building for Talento Bilingue, including structured parking and/or partially subsurface parking, will be realized along an improved Navigation/Jensen intersection.

Phase 4 consists of the addition of a pedestrian bridge across Navigation (*Figure ES.6*), adding to the bold design improvements and development strategies for Guadalupe Park resulting from the preceding three phases require concurrent momentum and success of other development initiatives around the park. The symbolic bridge between public and private cooperation can

literally reach out to the surroundings by the realization of a pedestrian bridge crossing Navigation.



Figure ES.5 – Conceptual Landscape Imagery

Results Program

The resulting urban form conceptual design, with multi-phased implementation of Guadalupe Park and the surrounding area, is presented in Figure ES.6.

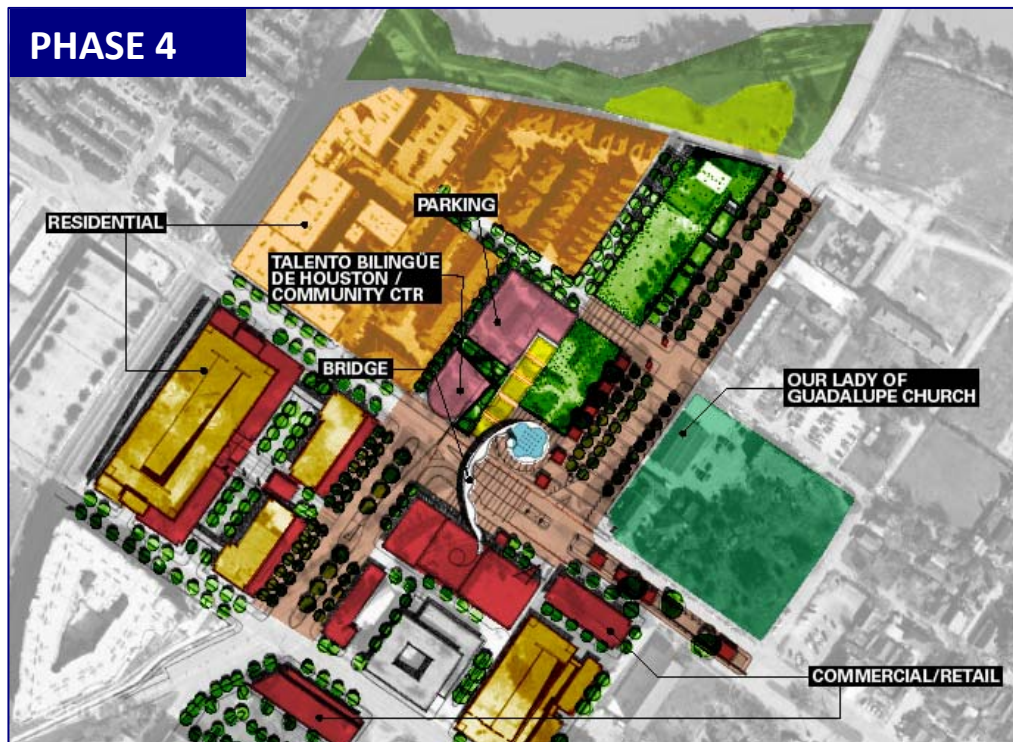


Figure ES.6 – Phase 4 Improvements

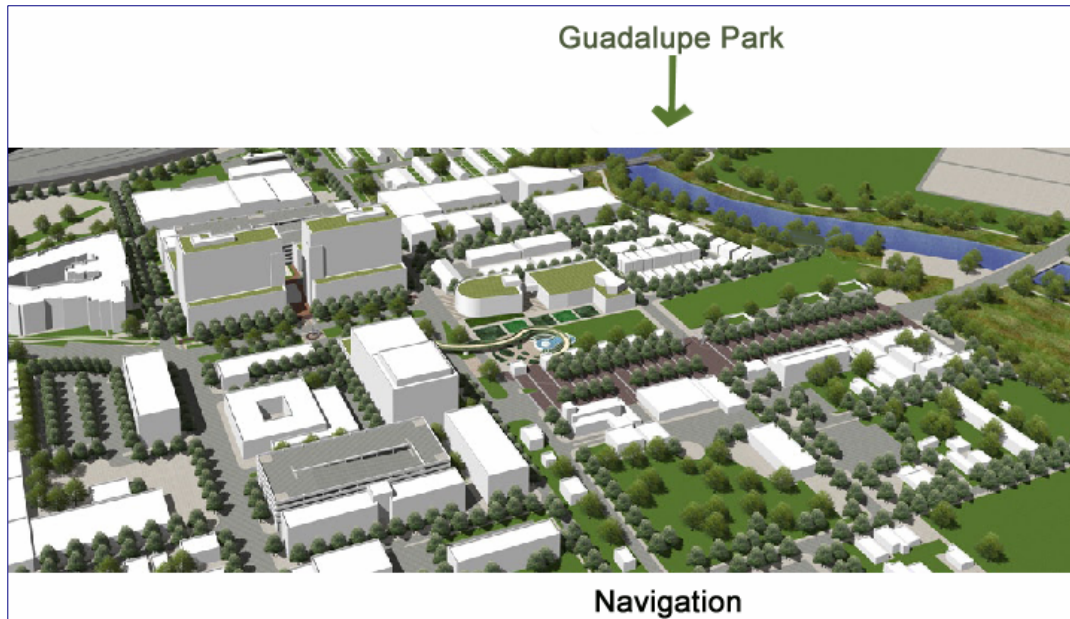
The urban form conceptual design includes realignment of the Navigation/Jensen intersection into a double T configuration, therefore, greatly enhancing pedestrian transit access and calming truck traffic to both increase park use and safety while accessing it.

Urban Form Vision of Navigation Boulevard and Surrounding Neighborhoods

The urban form vision developed by the design team, stakeholders, and the public is based on a series of design precepts that include the following:

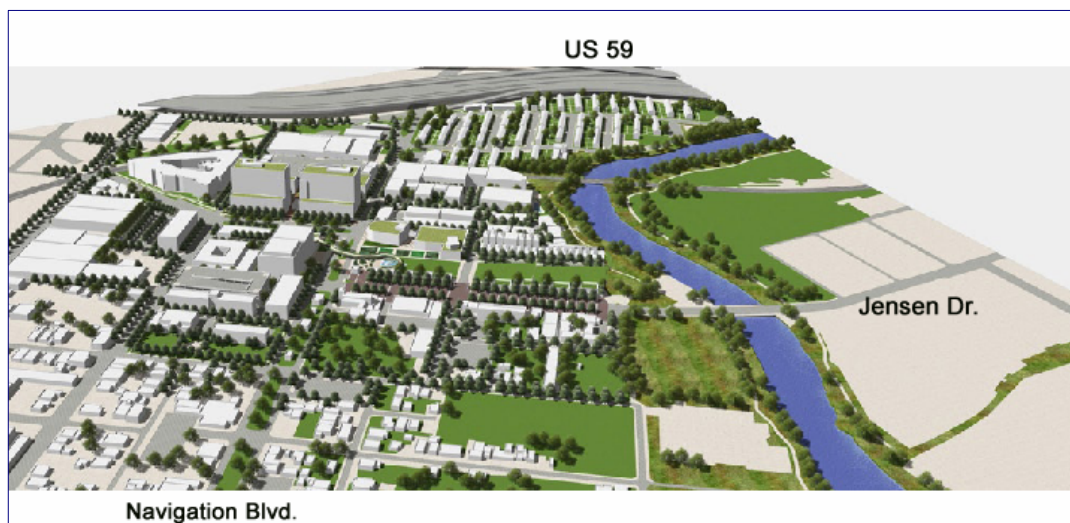
- Redesign Navigation to create a grand avenue.
- Encourage a mix of uses.
- Provide a seamless pedestrian network.
- Integrate strategically located, well-designed public spaces.
- Integrate a significant streetscape program that will connect strategic corridors with nearby neighborhoods.
- Connect directly and seamlessly between the gateway and the public spaces.
- Apply design guidelines contained in the ITE's Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities.
- Promote quality mixed-use development through design at each of the Gateway places.
- Encourage artfulness in the planning and design of buildings and encourage developers to bring buildings up to the ROW with parking hidden from view within the block.
- Create artistic design in all elements for each development whether it is public realm, parks, plazas, boulevards, or private buildings.
- Set design guidelines and standards for development quality, especially for land uses centered around the public realm components addressing the scale, façade articulation, orientation, and other elements of physical building form to determine and define the character of the public realm buildings.
- Change the Navigation corridor into the “Corazon” (Spanish for Heart) of the community.
- Incorporate an eclectic mix of street furniture, plant materials, wide variety of tree types, and other elements in an effort to provide a contextually rich corridor that is unique block to block, street to street, and space to space.

The conceptual urban form examples that follow provide physical expression to these precepts and other forces that could shape the future urban form of this part of the East End. These examples represent a physical manifestation of how this project area could develop in the long term. They represent the physical expression of goals and objectives of H-GAC's Livable Centers program and the expressed desires of East End stakeholders and the public as obtained in several advisory committee meetings and open house sessions.



Navigation

A vision for the long-term plan of Guadalupe Park and the surrounding urban form resulting from implementation of the design precepts for the park and ultimate development of the intersection at Jensen/Navigation.



A larger view of the same intersection and park combined with treatments to the neighborhood pedestrian linkages and connection to and development of the bayou.

This urban form vision is intended as a physical template of desired outcomes for the areas shown and the entire East End, where appropriate.

Measurable Benefits of Resulting Reductions in VMT

VMT Reductions from Increased Transit Ridership

There are measurable benefits in walkability and pedestrian access to transit associated with the recommended improvements. The measurable benefits in similar situations have been studied by a variety of nationally recognized authorities, including the Transit Coordination Research Program, Transportation Research Board, and National Research Council, where methods have been developed for predicting the ridership benefits associated with these types of improvements. Based on an extensive physical inventory of the pedestrian infrastructure on each block along the major transit/pedestrian corridor, a scoring of their adequacy was developed. This scoring was compared to an estimated future score after recommended improvements are made. This resulted in a measurable increase in transit ridership and a reduction in VMT that can be computed. *Table ES.3* presents the increased transit ridership that would result from the implementation of the transit/pedestrian access recommendations.

Table ES.3 – New Transit Trips		
Corridor	North Side	South Side
Navigation	47	19
Canal	122	115
Corridor	East Side	West Side
Sampson	n/a	74
York	90	n/a
Total	259	208

Applying H-GAC's regional estimates of average travel distances (8.6 miles) and automobile occupancy (1.25 ppv) to the increased transit ridership (259+208=467) would result in a daily reduction in VMT of 3,208 miles.

VMT Reductions from Infill/Mixed-Use Development

In addition to VMT reductions associated with increased transit ridership, there are VMT reductions associated with the infill/mixed-use development program presented earlier. These benefits are derived from the proximity and connectivity of a mix of uses. For example, office uses mixed with retail and residential uses will “internalize” what otherwise would, according to the Institute of Transportation Engineers (ITE), be “external” trips. It should be noted that an internal trip is made by pedestrians or short transit trips (where service is provided); whereas, an external trip is made by automobile. Therefore, if a person works and lives within close “walkable” proximity, an automobile commute trip is eliminated. This reduces congestion, emissions, and energy consumption. A trip from work to lunch that is located within close walkable proximity eliminates making an automobile trip. *Table ES.4* presents reductions in vehicle trips developed by employing the ITE Recommended Practice to analyze the 20-year build land use program.

Table ES.4 – Daily Internal Two-Way Vehicle Trips	
Two-Way Trips	Vehicle Trips
Office--Retail	189
Retail--Retail	1,761
Residential--Retail	566
Residential--Office	131
Total	2,647

Multiplying the 2,647 internal vehicle trips by 8.6 miles (average vehicle trip length for H-GAC region) results in a daily reduction of 22,764 VMT. The realization of this reduction in vehicle trips is based on the 20-year build-out of the infill/mixed-use program presented earlier. Of this 22,764 VMT reduction an average of 5% will occur annually and in Year 1 a VMT reduction of 1,138 miles can occur. Combining this first year reduction with the reduction of 3,208 reduced VMT resulting from the increase in ridership associated with the recommended pedestrian/transit access improvements in Year 1 results in an estimate of 4,346 VMT reduction and a 25,954 of VMT reduction in Year 20. These VMT reductions will result from implementation of the East End Livable Centers project.

Measurable Emission Reduction Benefits

The methodology used in these calculations applies U.S. Environmental Protection Agency (EPA) emission standards, H-GAC trip length standards, and street operating characteristics to estimate the emission reductions resulting from reduced VMT. These are presented in *Tables ES.5 and ES.6*.

Table ES.5 - Year 1 Emission Reductions				Table ES.6 – Year 20 Emission Reductions			
Type of Emission	Daily Grams Reduced	Grams Conversion to Pounds Reduced	Annual Net Tons Reduced	Type of Emission	Daily Grams Reduced	Grams Conversion to Pounds Reduced	Annual Net Tons Reduced
		0.002205	365			0.002205	365
NOx	6,814.48	15.0232	2.7417	NOx	40,650.18	89.6174	16.3552
VOC	8,810.75	19.4242	3.5449	VOC	52,486.49	115.7117	21.1174
CO	57,303.45	126.3312	23.0554	CO	341,665.84	753.2365	137.4657
Total	72,928.67	160.779	29.3421	Total	434,802.50	958.566	174.9382

Measurable Economic Benefits

Economic benefits are derived from increases in property and sales taxes resulting from the increased values of real estate development associated with the mixed-use development contained in this project. The increases in value from the mixed-use program are presented in *Table ES.7*.

Table ES.7 – Added Value at Buildout	
Retail	\$17,031,144
Office	\$46,288,680
Services	\$46,288,680
Housing	\$84,208,762
Light Industry	\$15,835,065
Total	\$209,652,331

The total “real property added” value associated with the mixed-use program at buildout is over \$209 million. Income to the City, County, and a variety of agencies and departments will be realized through the property tax income created by this value. The anticipated income for each is presented in *Table ES.8*.

Table ES.8 – Annual Property Tax Revenue	
HISD	\$3,396,368
Harris County	\$838,316
Harris County Flood Control	\$69,647
Port of Houston	\$30,903
Harris Co. Hosp. Dist.	\$402,868
Harris Co. Educ. Dept.	\$13,187
Houston Comm. Coll.	\$200,784
City of Houston	\$1,357,499
Total	\$6,309,571

Annual sales tax income, based on an estimated level of sales per square foot, which averages \$250, is multiplied by the sales tax (capped at 0.0825 by the State of Texas). This source of revenue is distributed to three recipients: City of Houston, METRO, and the State of Texas.

Table ES.9 – Annual Sales Tax Income	
City of Houston	\$354,815
Houston METRO	\$354,815
State of Texas	\$2,217,594
Total	\$2,927,224

Annual sales tax at buildout will be \$2,927,224 in 2009 dollars. The total annual tax value added at buildout will be \$9,236,795.

Cost Estimates

Walkability Improvements

Costs for the pedestrian/transit access improvements total \$16,917,125 (including contingencies, standard soft costs, and fees) as delineated in *Table ES.10*. Additional detailed cost breakdowns are presented in Chapters 6, Improved Walkability and in Chapter 11, Costs.

Table ES.10 – Livable Centers Pedestrian/Transit Access Improvements Cost Summary		
Corridor/Area	Base Cost	Total Cost*
Navigation	\$1,519,332	\$1,975,132
Canal	\$1,981,366	\$2,575,776
Sampson	\$1,658,323	\$2,182,338
York	\$2,416,253	\$3,141,129
Side Streets	\$4,617,500	\$6,002,750
Other Treatments	\$800,000	\$1,040,000
Total	\$12,992,774	\$16,917,125
* Includes contingencies, standard soft costs, and fees.		

Guadalupe Park and Surrounding Area

The order of magnitude capital cost estimate for the recommended treatments in Guadalupe Park and the surrounding area including street realignments for each phase of development are presented in *Table ES.11*. When contingencies, standard soft costs, and fees are included the total order of magnitude cost estimate is \$40,661,637. Phasing cost details are presented in Chapter 11, Costs.

Table ES.11 – Guadalupe Park/Surrounding Area Construction Cost Summary by Phase	
Phase	Cost
1	\$6,289,310
2	\$6,000,000
3	\$17,740,000
4	\$2,500,000
Total	\$32,529,310
Total (Including Contingencies, Standard Soft Costs, Fees)	\$40,661,637

Federal, State, and Local Funding Sources and Successful Examples

Federal, State, and Local Funding Sources

Sources of applicable funding for the elements of the East End Livable Centers program include the following:

- Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- Community Development Block Grants (CDBG)
- FTA Section 5307 Urbanized Program
- FTA Section 5309 Discretionary Program
- FHWA Transportation and Community and System Preservation (TCSP) Program
- Statewide Transportation Enhancement Program (STEP)
- Surface Transportation Program (STP)

Each of these sources requires a 20% local match, in most cases. The following sources can be used to satisfy the local share requirement including funding, property and credits:

- Assessment/General
- Tax Increment Reinvestment Zone (TIRZ) Funds
- City of Houston General Fund or Capital Bond Funds
- Value of Qualifying Land Contributed to the Project
- Private Sector or Nonprofit Funds
- State Transportation Development Credits (TDC)
- Qualifying CDBG Funds

Successful Examples of Funding and Development of Improved Pedestrian/Transit Access

The use of these funding mechanisms has resulted in a significant number of pedestrian/transit access corridor developments in Houston. The improvements are similar to those recommended in this plan. The improvements would include funded projects already developed and those in development in the Greater Southeast Management District, Midtown Management District, Uptown Management District, Downtown Management District, and other applications in Harris, Galveston, and Montgomery counties.

Chapter 1 - Background **1**

H-GAC 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. The 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. Key features include the following:

- 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

Studies that examine specific areas with the potential to become true Livable Centers are being sought by H-GAC to foster the development of Livable Centers projects and to make strides toward meeting RTP goals. The East End Livable Centers study is the first of these.

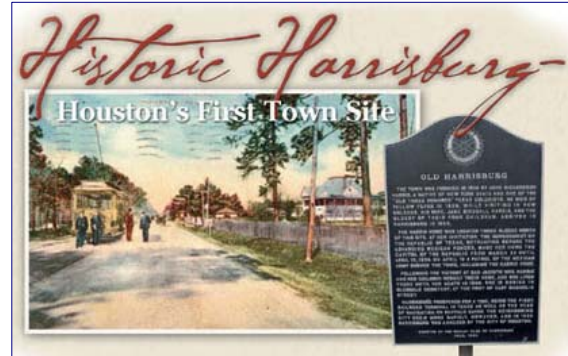
*History of the Greater East End*¹

The East End enjoys a rich history dating back to the origins of Houston itself. John Harris founded the town of Harrisburg at the confluence of Buffalo Bayou and Braes Bayou in 1826. The town thrived as a prosperous trading post and by 1829 was home to the first industry in what is today the Houston metropolitan area, a steam-operated saw mill. In 1836 Harrisburg became the capitol of the Republic of Texas and by 1853 Harrisburg had several stores, three hotels, and

¹ www.greateereastend.com, www.eecoc.org

a railroad terminal with shops and yards. With its crisscrossing railroads and proximity to the Port of Houston, Harrisburg was a key hub in this transportation network.

Always culturally diverse, the East End was a melting pot for the Germans, Italians, and Mexican-Americans that settled in areas near the port. The East End's Second Ward and Magnolia Park are two of Houston's oldest Hispanic neighborhoods. Developed in 1913, the Eastwood subdivision is considered one of the first master-planned communities in Houston.



The City of Houston annexed historic Harrisburg in 1926, and after World War II, Houston began its move westward and the East End began to experience a slow but steady decline. Today, however, the area is experiencing a renaissance, in spite of the current economic downturn. Downtown redevelopment and the opening of Houston's new baseball stadium created strong interest in properties east of US 59. Just under \$100 million in new loft apartments and townhomes are now under construction between US 59 and Dowling Street. Light and heavy industry and manufacturing abound and thrive in the East End and a significant number of businesses are adding manufacturing and warehousing space, or are buying adjacent property for future expansion. The East End is home to the nation's two largest coffee processing companies, employing hundreds of workers, and the Port of Houston is one of four "green coffee ports" in the U.S., and is the only one west of the Mississippi River. In the next few years, light rail will connect the East End to downtown Houston and points west and south, including the Museum District, Texas Medical Center, three universities, and The Galleria. Small to medium-size businesses serving the neighborhoods along the rail line are expected to flourish.

According to the Houston East End Chamber of Commerce, a survey of East End business owners and managers revealed that 20.4 percent credit access to transportation as the reason their business is located in East End. The large semi-skilled workforce and the excellent academic and recreational resources are also highly rated. Employment growth for the Greater East End for the past decade shows a gradual increase from 63,675 employees in 1990 to 78,595 in 2001, for a 20 percent increase. When the East End is placed on a list of the highest central business district employment numbers, based on the U.S. Census 1990, the East End ranks above San Antonio, Fort Worth, Miami and Salt Lake City, and is the 28th-largest central business district in the U.S.

Multimillion-dollar expansions are setting the trend for redevelopment. These include Oak Farms Dairy and Valero Refinery; Gulfgate Center redevelopment of an existing retail center totaling \$70 million; Central City Industrial Park, a \$20 million conversion of a Baker Hughes facility into an industrial park; Live Oak Lofts; Alexan Lofts; Perry Homes' Plum Creek Townhomes; and New Hope Housing's Canal Street Apartments.

The East End's history, cultural diversity, transportation infrastructure, proximity to Downtown and the Port of Houston, and renewed development interest make the East End an attractive candidate as a potential Livable Centers project. Capitalizing on the area's inherent strengths and developing new ones ultimately will lead to an area that has the attributes of a Livable Center – being compact and mixed use, walkable, connected, and accessible.

Chapter 2 - Existing Conditions **2**

Land Use

The East End study area has a diverse mix of land uses, as shown in *Figure 2.1*. There is a clear predominance of industrial and commercial land uses as well as a large amount of vacant land. However, tucked among the large swaths of industry and vacant land are also residential neighborhoods of varying age and quality.

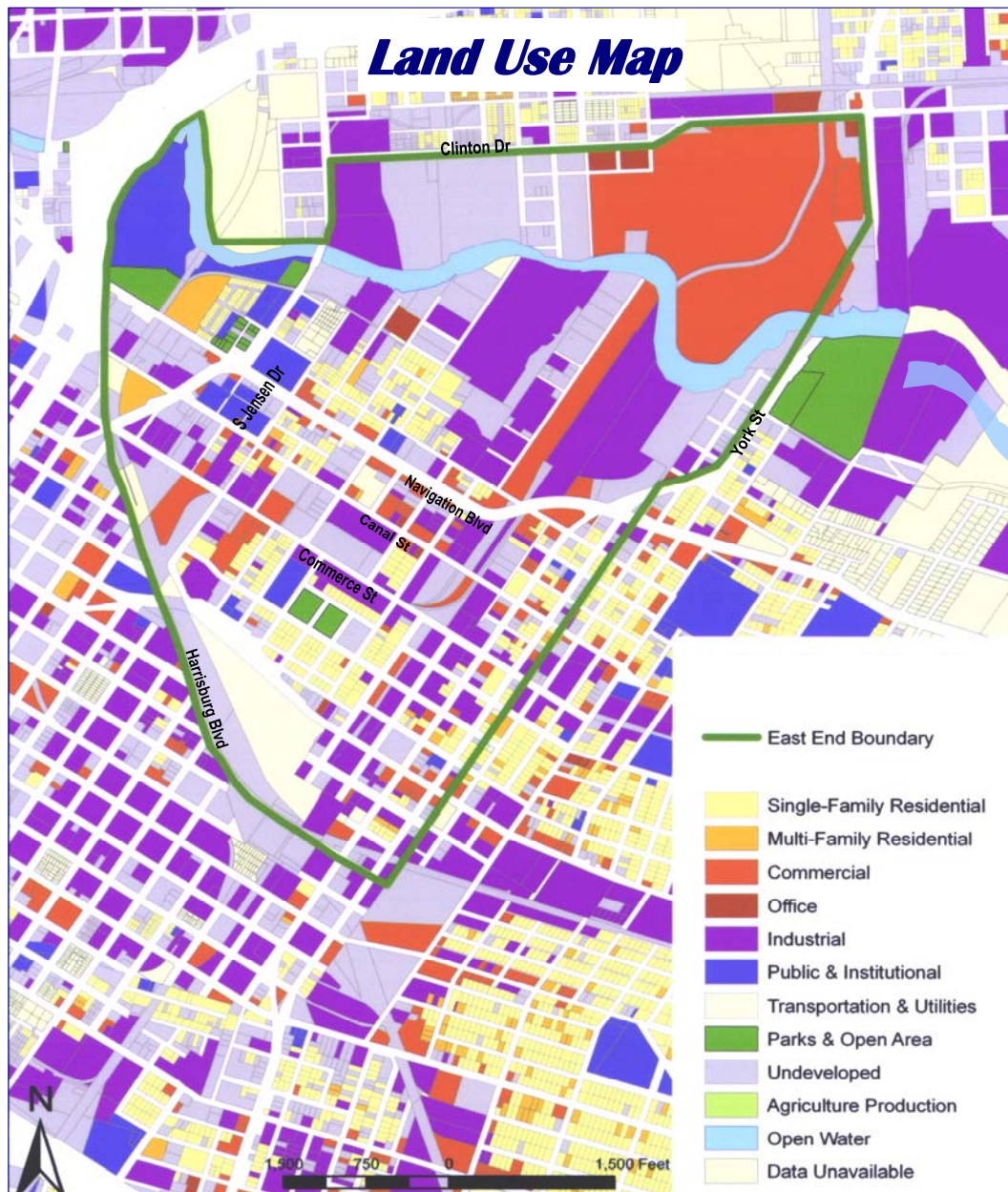


Figure 2.1 – East End Study Area Land Use

Despite the diversity of land uses shown below, the East End cannot truly be called a “mixed use” community, as the term is commonly used today. In a true mixed-use area, land uses are not only proximate, but also complementary. For instance, there may be restaurants and shopping areas frequented by workers who work in nearby office buildings and/or live in nearby housing. For the most part, this is not the case in the East End. Rather, as shown by examining the land use map, there are industrial areas with small pockets of residential within them, and even predominantly residential areas that have industrial within them. However, these are not complementary land uses. Similarly, on the main corridors such as Navigation and Canal, there is a mix of commercial and industrial uses; however, they are not of the type that typically foster interaction among the establishments. The improvements to be recommended as part of this study will serve, in part, to address this discontinuity and to make the area feel more like a single, coherent community.



A Peer Review was performed to seek guidance from a community of experts in transportation and urban design, who are qualified and able to perform impartial review. The peer review process is documented in *Appendix A*.

Industry

The East End's proximity to the Port of Houston (Figure 2.2) makes it a natural location for a large amount of industrial land uses.

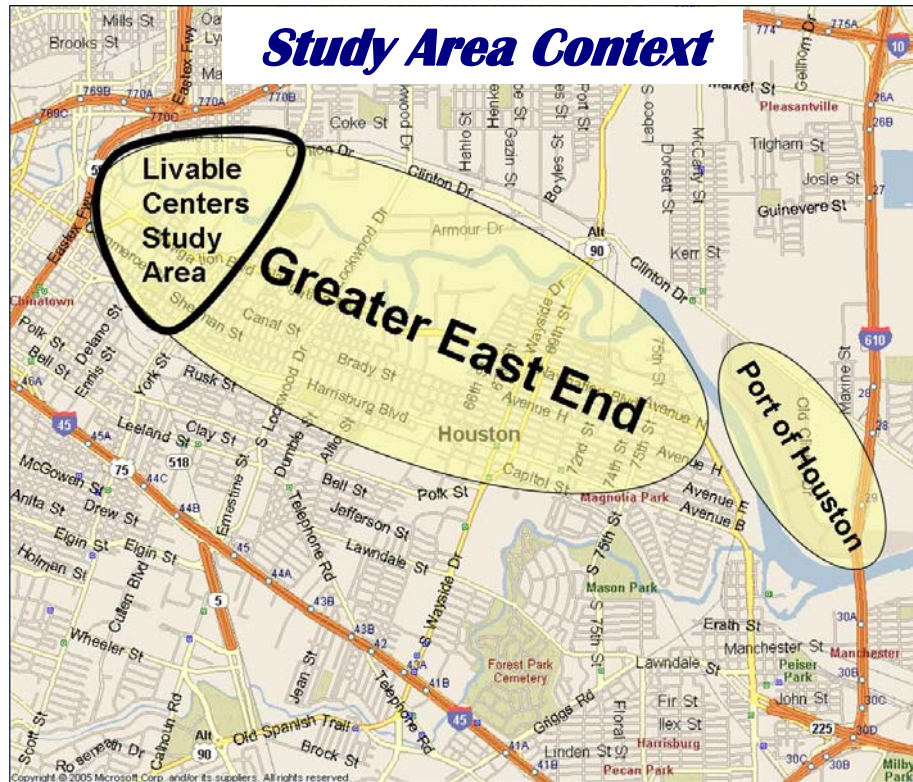


Figure 2.2 – East End Study Area

Industry, which comprises approximately 65 percent of the total land in the study area, primarily takes the form of light manufacturing, warehouses, and other Port-supporting uses. The presence of industry in the East End is a constant not likely to change anytime soon. This is an area of Houston where industry makes the most sense given the needs of the Port of Houston. Therefore, efforts to improve the area will not focus on trying to reduce or eliminate the amount of industry. Efforts will focus on attempts to “soften the edges” between the industrial and residential areas, and make them more compatible neighbors with one another. The industrial presence also means that there is a great deal of heavy truck traffic traversing the area, as shown below. Thus, improvement efforts also will focus on traffic calming and other tools that lessen the impact of the truck traffic on the neighborhoods and make the area safer for pedestrians.

Vacant Land

Figure 2.1 reflects the vacant land dispersed throughout the study area, approximated at 20 percent of the total land area. Vacant land presents an opportunity for economic development that can be spurred, in part, by the types of improvements recommended in this plan.

Housing

As an area that dates back to Houston's founding, the East End has an abundance of housing that is older and even some that may be approaching the end of its useful life. Conversely, there is an influx of new housing being built, mostly in the form of townhomes and luxury apartments. This is a common occurrence today in Houston's inner-loop neighborhoods, as high gas prices and other factors spur renewed interest in living closer to the center of the city rather than in the suburbs.

Further insight into the housing situation can be gained by examining selected housing-related demographics from the four census block groups that approximate the boundaries of the study area (Figure 2.3 and Table 2.1).

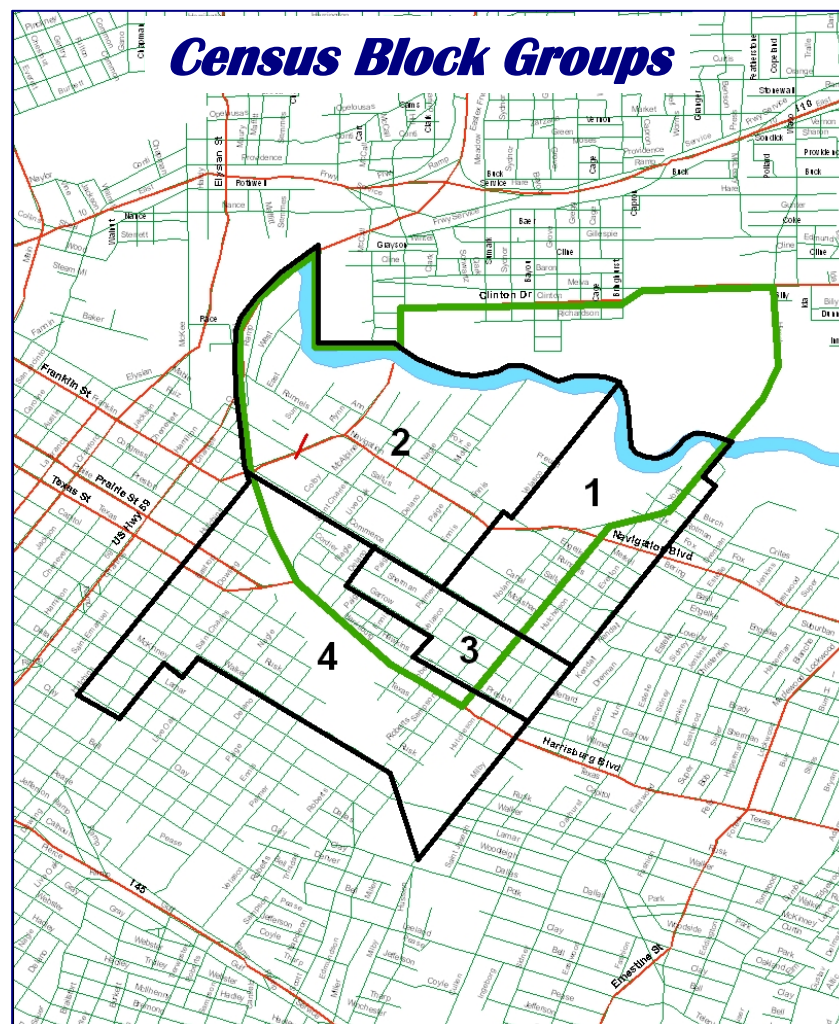


Figure 2.3 – Census Block Groups Approximating Boundaries of East End Study Area

Table 2.1 – Selected Housing-Related Demographics for East End Study Area

Census Block Group (Tract 3101)	Median Home Value	Total Housing Units	Vacant Housing	Occupied Housing that is Owned	Occupied Housing that is Rented	Housing Built 1969 or Earlier
1	\$44,200	223	5.83%	44.29%	55.71%	71.75%
2	\$40,500	630	5.56%	19.66%	80.34%	79.52%
3	\$39,200	179	12.85%	42.95%	57.05%	90.50%
4	\$30,200	208	6.25%	18.97%	81.03%	92.79%
<i>Source: U.S. Census 2000</i>						

The housing data show relatively low home values and relatively high rates of renting versus home ownership. The data also confirm that the majority of the housing stock is 40 years old or more. With the recent building trends previously discussed, however, the Census 2010 is likely to show increased percentages of newer homes and higher home values.

Residential land uses comprise approximately 15 percent of the total land in the study area. The residential neighborhoods generally found here can be grouped into several descriptive prototypes, as described below and shown in *Figure 2.4*.

Most in Need: These are areas where the housing is in very poor condition and may indeed be approaching the end of its useful life. Housing in such a state is common in the study area, perhaps as much as 50 percent of the total residences. While some of it is boarded up and clearly vacant, much of it remains occupied, despite its poor and perhaps unsafe condition. The surrounding streetscape is often lacking sidewalks and other pedestrian amenities.

Moderately in Need: These are areas with housing that is generally not in very good condition, but efforts are being made to maintain it. Continuing maintenance and/or upgrades can prolong the life of these structures significantly. However, should the ongoing maintenance cease, the housing could very easily fall into a state of irreversible disrepair. Again, more often than not, the streetscape in these areas has no sidewalks or other pedestrian amenities.

New: This refers to the spate of new townhomes and luxury apartments recently and continuing to be developed in the study area. The areas of new development generally also have new and well-maintained pedestrian infrastructure in place.

Mixed: These are areas where the three housing prototypes discussed above co-mingle in very close proximity. There may be a dilapidated, boarded-up home next to a home in moderate condition, with brand new housing directly across the street, for example. As such, these areas are not readily classified as solely one type or another. Much of the southern portion of the study area, near Settegast Park, is of this type.

Public/Low-income Housing: The study area includes a public housing development and a subsidized apartment complex for low-income families. They are well-maintained and in good condition.

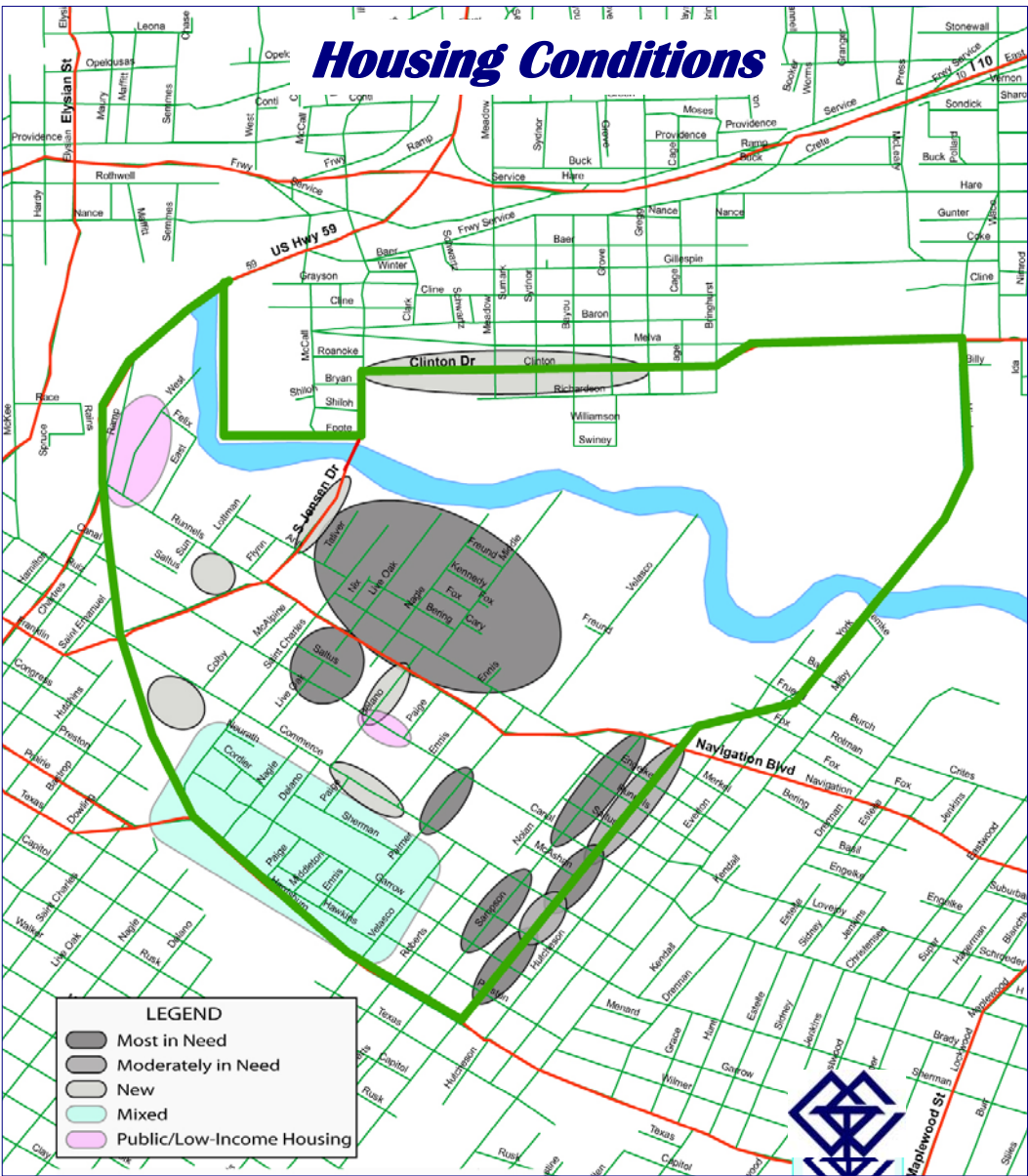


Figure 2.4 – Housing Conditions in East End Study Area

Pedestrian/Transit Accessibility Needs

An examination of selected transportation-related census demographics provides insight into the degree of need for transit and pedestrian accessibility in the study area (*Table 2.2*).

Table 2.2 – Selected Transportation-Related Demographics for East End Study Area						
Census Block Group (Tract 3101)	Median Household Income	Below Poverty Level	Age 60 and over	Disabled	Using Public Transportation to Work	Walking to Work
1	\$25,714	40.09%	13.55%	49.22%	6.84%	4.74%
2	\$17,333	47.29%	9.60%	51.12%	21.23%	7.63%
3	\$26,964	26.96%	24.26%	21.78%	16.89%	16.22%
4	\$16,477	46.36%	9.96%	32.69%	26.83%	4.47%
Source: U.S. Census 2000						

The demographics show the area to be characterized by several factors that typically contribute to high levels of transit usage. There is a relatively low median household income, high poverty rates, a high percentage of disabled residents, and up to a quarter of the population in certain areas that is elderly. The percentage of workers who use public transportation or walk to work is also far higher than the national averages of approximately five percent and three percent, respectively, which further bears out the aforementioned observations. The streetscape improvements recommended in this study will serve to make transit more accessible and pedestrian activity easier and safer in the area. This not only serves the transit-dependent, but can also make transit and/or walking attractive choices even for those who have access to an automobile and would otherwise drive. Replacing automobile trips with transit and walking leads to decreased vehicle emissions and improved air quality.

Crime Incidents

There are only two areas of noticeably high incidents of crime within the East End Livable Centers project area. Houston Police Department (HPD) reported 69 incidents of crime documented in the 1900 block of Runnels Street and 23 incidents at Canal Place Apartments in the 2100 block of Canal Street. Both of these locations are low-income residential areas specifically multi-unit housing developments. *Figure 2.7* presents the number of crime incidents by block in the project area. Incidences of burglary and auto theft comprise 68 percent of the crime at these two locations. *Tables 2.3 and 2.4* present a breakdown the types of crime in the two highest locations.

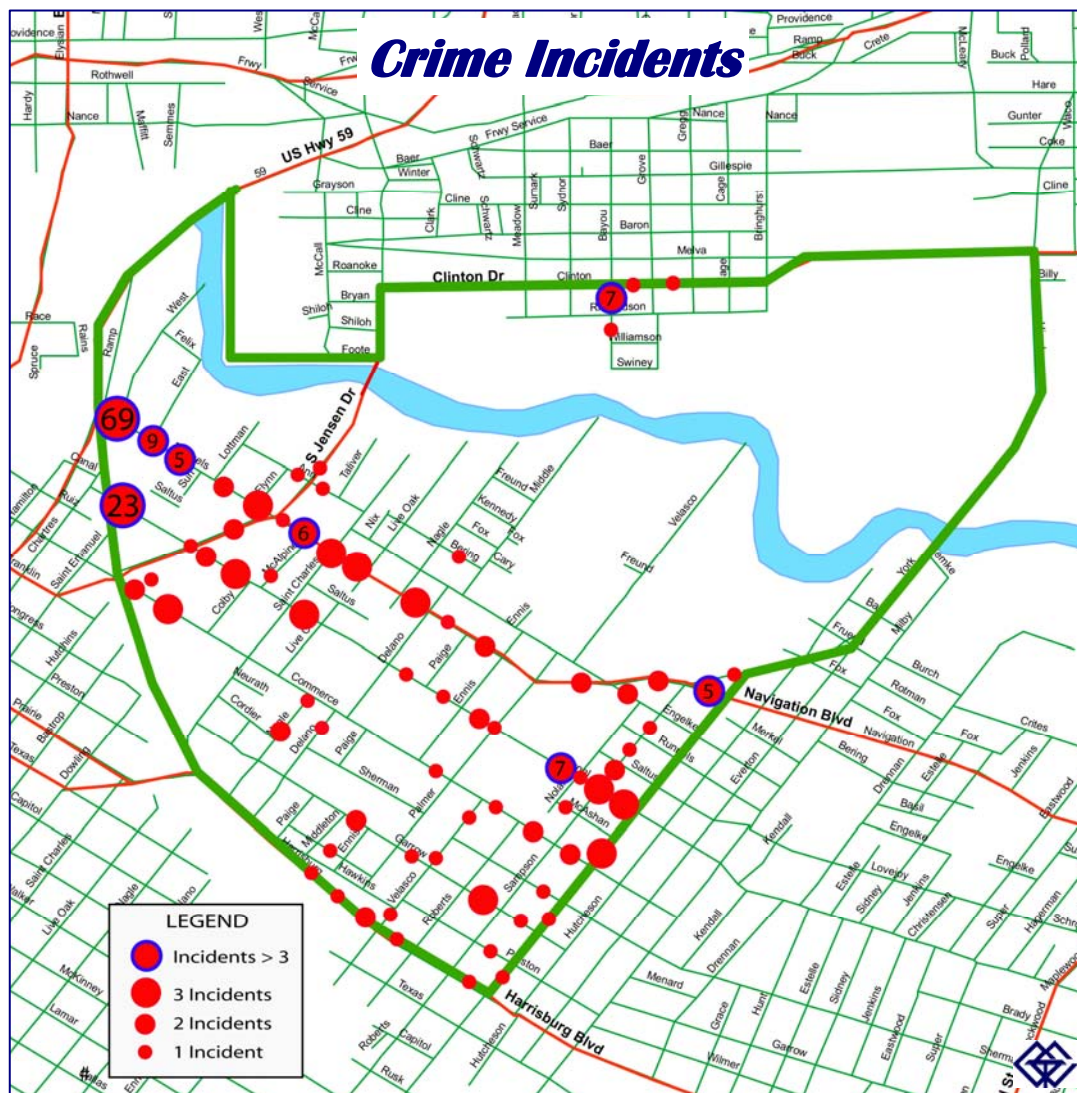


Figure 2.5 – Crime Statistics in East End Study Area

<i>Table 2.3 – Crime Reported at 1900 Block of Runnels</i>	
<i>Type of Crime</i>	<i>Number</i>
Aggravated Assault	11
Auto Theft	8
Burglary	35
Burglary of Motor Vehicle	5
Murder of Nonnegligent Manslaughter	1
Narcotics Drug Laws	2
Robbery	7
Total	69

<i>Table 2.4 – Crime Reported at 2100 Block of Canal</i>	
<i>Type of Crime</i>	<i>Number</i>
Aggravated Assault	1
Auto Theft	10
Burglary	3
Burglary of Motor Vehicle	9
<i>Total</i>	<i>23</i>

Crime and safety are priorities of area residents in the project area. Safety issues will direct the design of the East End Livable Centers project. The approach of Crime Prevention Through Environmental Design (CPTED) will be applied in the design to prevent and reduce crime and traffic accidents. Three CPTED strategies that can be employed in this design are natural surveillance, territorial reinforcement, and natural access control. (*See Chapter 10, Benefits, for quality of life benefits that provide safety.*)

Other Safety Issues

Lighting

Police officers pointed out the pedestrian difficulty traveling through the Navigation underpass. The underpass has no sidewalks and no pedestrian-oriented lighting for safety into the East End Livable Centers project area. In addition there is no flood gauge in this underpass to make drivers and pedestrians aware of the depth of the rising water.

Wayfinding Signage

Police officers interviewed suggested wayfinding signage to assist drivers and, therefore, vehicle traffic significantly. Based on the questions they have received from drivers, the officers recommended that wayfinding signage be placed in the project area for Downtown, US 59, and IH 10.

Parking

Police officers interviewed reported parking difficulties on St. Charles Street and other neighborhood streets southeast of the intersection of Navigation Boulevard and S. Jensen Drive. These neighborhood streets are narrow and there is parking demand associated with a doctor's office and a school in the vicinity.

Chapter 3 - Transit Services and Traffic 3

Transit is an integral part of the East End mobility system. The East End Livable Centers project area is well served by METRO bus routes. It soon will be served by the METRO Light Rail Transit (LRT) currently being constructed on Harrisburg Boulevard (*Figure 3.1*).

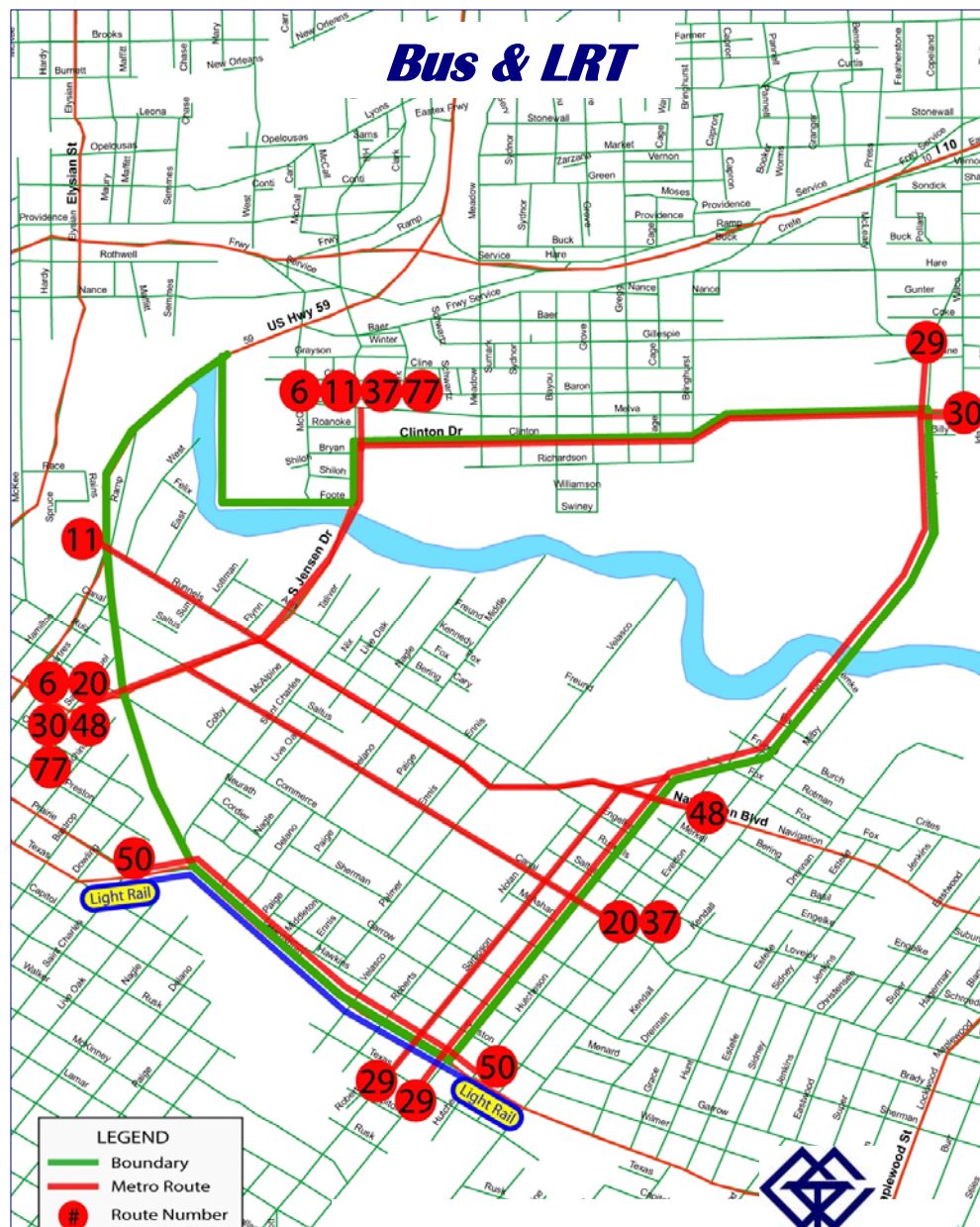


Figure 3.1 – Bus Routes and Planned LRT in East End Study Area

The East End project area currently is served by nine METRO bus routes operating on seven public streets (*Table 3.1*).

<i>Table 3.1 – METRO Bus Routes Serving East End Project Area</i>	
<i>Route</i>	<i>Type of Service</i>
6 Jensen/Tanglewood	Local
11 Alameda/Nance	Local
20 Canal/Long Point Limited	Local
29 TSU/UH Hirsch Crosstown	Local
30 Clinton/Cullen	Local
37 El Sol Crosstown	Local
48 Navigation/West Dallas	Local
50 Harrisburg/Heights	Local
77 Liberty/Martin Luther King	Local

As previously discussed, the demographics of the area suggest that the need for transit is great. Specifically, there is a relatively low median household income, high poverty rates, a high percentage of disabled residents, and up to a quarter of the population in certain areas that is elderly. Additionally, the percentage of workers in the project area who use public transportation to travel to work is far higher than the national average of 5 percent (up to 16 percent in some parts of the project area). For these reasons, the residents of the project area stand to greatly benefit from improved pedestrian access to existing and future transit services.

METRO Ridership

Houston METRO generously provided data for the number of passengers boarding and exiting (alighting) at each bus stop within the project area for a typical weekday in 2008. There are a total of 73 METRO bus stops and one planned light rail (LRT) station within the project area boundaries as depicted in *Figure 3.2*. METRO data indicate a total of 1,231 boardings and 1,169 alightings daily for all stops in the project area, or total passenger activity of 2,400. This equates to an average of approximately 17 customer boardings per bus stop per day. The single stop with the highest level of total activity (boardings and alightings) is Jensen at Ann (southbound), with 211 daily. This same stop (Jensen at Ann, southbound) also has the highest overall number of boardings (134). The highest number of alightings (83) occurs at Jensen at Navigation (northbound). Full ridership data is available in *Appendix B*.

Table 3.2 shows the total number of combined boardings and alightings on each of the seven streets served by transit in the East End project area, and the percentage of the total 2,400 daily boardings and alightings that each street's ridership represents.

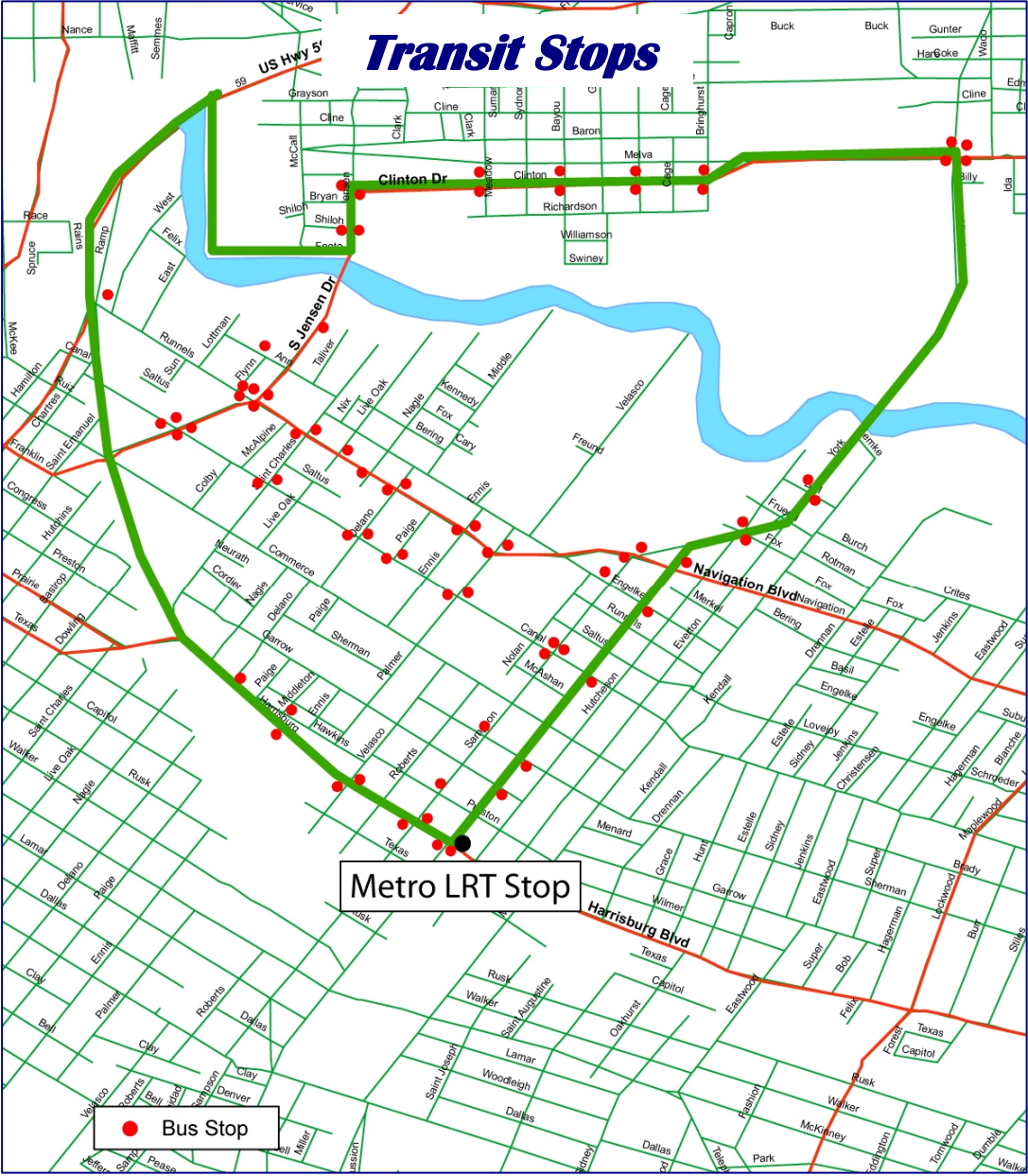


Figure 3.2 – Transit Stops in East End Study Area

Table 3.2 – METRO Ridership by Street		
<i>Street</i>	<i>Total Boardings and Alightings</i>	<i>Percentage of Total Activity in Project Area</i>
Navigation/Runnels	624	26%
Canal	567	24%
Jensen	567	24%
York/Hirsch	223	9%
Harrisburg	196	8%
Sampson	122	5%
Clinton	101	4%

In terms of boardings and alightings, it should be noted that the top ten bus stops account for 48 percent of the total ridership activity in the project area (*Table 3.3 and Figure 3.3*).

Table 3.3 – Top 10 METRO Bus Stops in Project Area	
<i>Location (direction)</i>	<i>Total Boardings and Alightings</i>
Jensen at Ann (SB)	211
Jensen at Navigation (NB)	188
Navigation at Canal (WB)	112
Jensen at Kennedy (NB)	108
Canal at Navigation (EB)	98
Canal at Sampson (WB)	95
Runnels at Jensen (SB)	89
Navigation at Canal (EB)	88
Runnels at Chartres (NB)	86
Sampson at Engelke (SB)	82

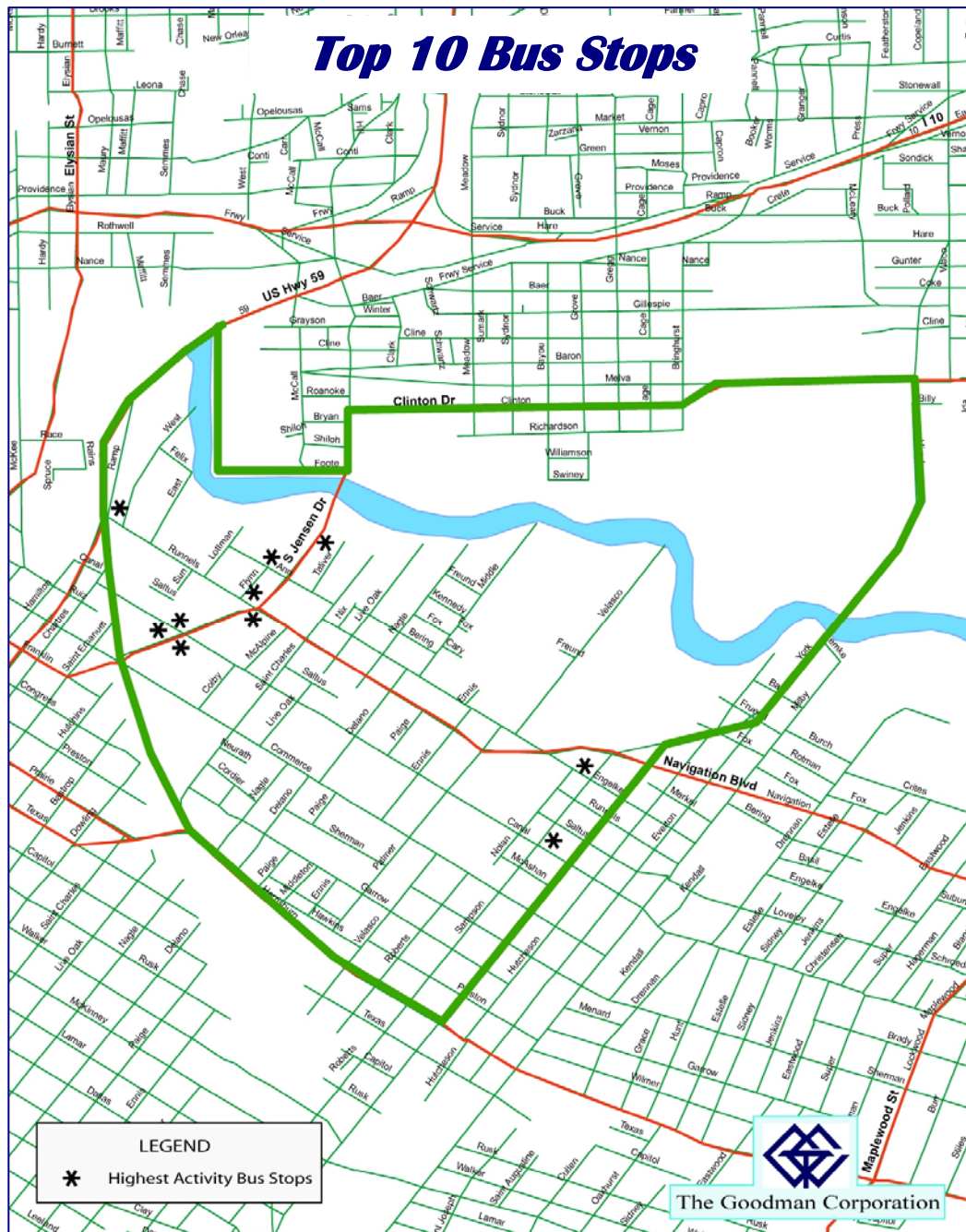


Figure 3.3 – Top 10 Highest Activity Bus Stops in East End Study Area

Existing bus routes sufficiently accommodate residents in the project area. All recommended design and safety treatments for the corridor encourage the use of public transit, as follows:

- Corridor enhancements should be provided along the corridor to complement the transit stops (e.g., shelters, benches, pavers) and to improve conditions for those utilizing public transit. The placement of trees and pedestrian-oriented lighting at transit stops will

improve pedestrian access, enhance the appearance of each corridor, and increase safety conditions for those utilizing public transit.

- Bicycle storage should be provided at selected stops and bike lanes or extra wide outside lanes are recommended wherever possible.

Traffic

Traffic, in terms of volume, is not a problem in the project area. Congestion and traffic-related delays are minimal. The most recent traffic counts taken by the Texas Department of Transportation (TxDOT) for the major corridors in the project area are shown in *Figure 3.4*. These volumes are reasonable and do not stress the capacity of the roadways.

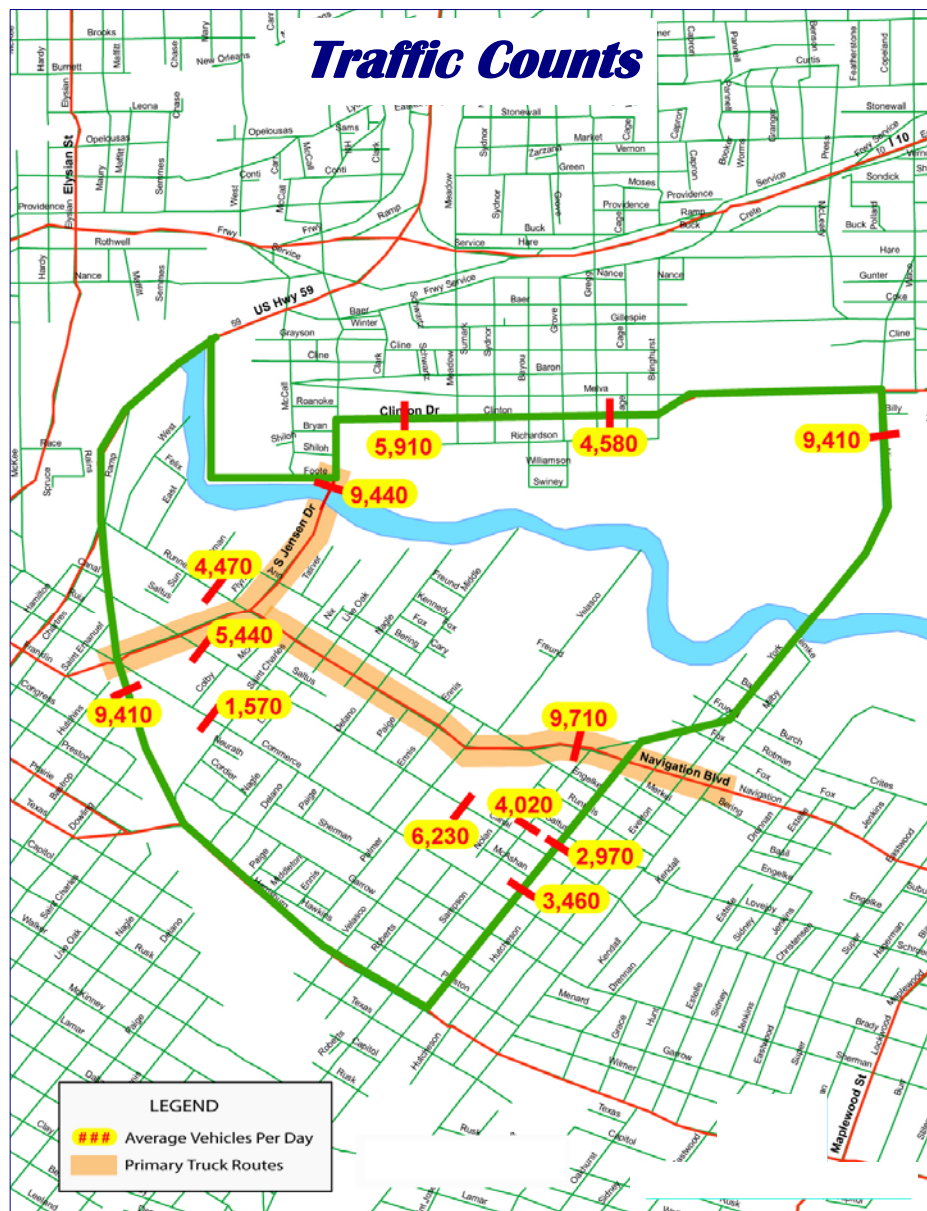


Figure 3.4 – Traffic Counts for Major Corridors in East End Study Area

Although traffic volume is not an issue, a traffic-related problem faced by the Greater East End is the large amount of truck traffic in the area. With its many industrial land uses and its proximity to the Port of Houston, the East End is a natural origin, destination, and pass-through for heavy truck traffic. *Figure 3.4* shows that the most heavily-utilized truck routes in the area are along Navigation and Jensen. The problem with truck traffic lies in the conflict that it creates with other vehicles and pedestrians. Other vehicles on the road must deal with the difficulties inherent in sharing the road with large trucks. These include the truck's blind spots, its large size, its lessened maneuverability, and the fact that it often blocks travel lanes and driveways. These problems affect pedestrians as well, and for all the same reasons. In addition, for an area such as this, that is already not very pedestrian-friendly, the added intimidation of having large trucks driving by at high speeds can be a deterrent to walking. Finally, in maneuvering in and out of properties, large trucks often inflict damage on the sidewalks, curbs, and medians.

Traffic calming efforts are recommended for slowing truck traffic and to make the area safer for motorists, bicyclists, and pedestrians. Re-routing truck traffic from the major corridors onto lesser-used roadways has been considered. However, given the geographic constraints and limitations of the roadway network between the East End and the Port of Houston, a major re-routing effort is likely not feasible.

Traffic Calming

Traffic calming devices were considered for application in the corridors where truck traffic is high, in this case, along Navigation and Jensen, with particular attention at their intersection. This need is discussed in detail with significant design recommendations in Chapter 8. These points are particularly problematic with respect to speeding. Some devices, such as speed humps, were eliminated because these streets are major arterials and play a major role in emergency situations for quick access needs of EMS, police, and fire services.

Alternatively, however, special striping or “jiggle bumps” could be put in place, along with raising some intersections, to reduce speed and improve safety for automobiles and pedestrians. The effectiveness of jiggle bumps as a traffic-calming device is stated in the report, *Traffic Calming: State of the Practice*—prepared by the Institute of Transportation Engineers (ITE). According to the report, jiggle bumps are a “vertical speed” control measure. The report also states the following:

“Vertical measures use forces of vertical acceleration to discourage speeding; this contrasts horizontal measures, which use forces of lateral acceleration to discourage speeding; and narrowings, which use a psycho-perceptive sense of enclosure to discourage speeding. Vertical and horizontal devices tend to be more effective in reducing speeds. Vertical traffic calming measures include raised intersections, textured pavements, and several anomalies such as raised crosswalk headers and intersection jiggle bumps.” Traffic Calming: State of the Practice—Institute of Transportation Engineers

Suggested locations for such treatment considerations would be on approaches to the Navigation/Jensen intersection and at other locations where traffic speeds need control. Warning

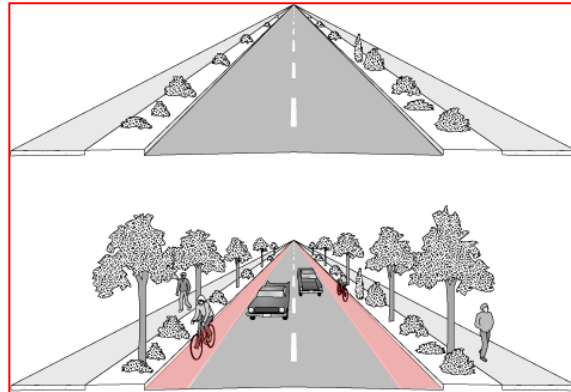
signs should be placed in advance of this and other appropriate intersections. Where appropriate, an 11-foot lane width is recommended for all inside travel lanes.

The addition of trees would serve traffic calming. Consider the following materials produced by the Oregon State Department of Transportation:

Reducing Traffic Speeds Through Adding Trees – Illusion of Less Space Creating Vertical Lines

Reducing traffic speeds can be accomplished through physical constraints on the roadway or by creating an "illusion of less space." Motorists typically drive at a speed they perceive as safe; this is usually related to the road design, especially available width.

By bringing buildings closer to the roadway edge, or by adding tall trees, the roadway appears narrower than it really is.



Trees and colored bike lanes make a roadway appear narrow

The recommendations for streetscaping and landscaping along the major traffic arterials in the project area will serve to not only increase walkability and to enhance transit access, but also to calm traffic.

Traffic Incidents

Traffic accident data for the East End Livable Centers project area was collected from the Houston Police Department (HPD). Two HPD sources were used, including interviewing officers assigned to the area and analyzing data from the Statistical Analysis Division. Officer Avery Huff, a Community Outreach officer, and Officer Larry Linquist, a patrol officer, indicated there were not many traffic accidents in the project area with the exception of Navigation Boulevard, S. Jensen Drive, and Runnels Street. The officers explained that this intersection is confusing to drivers and that better signage before the intersection and at the intersection likely would reduce confusion and the number of accidents. This is detailed in the recommendations presented in the conceptual design opportunities in Chapter 8.

Traffic Incident data obtained from the Statistical Analysis Division for January through September 2008 (*Appendix C*) included vehicle accidents and accidents involving pedestrians and bicyclists (*Figure 3.5*).

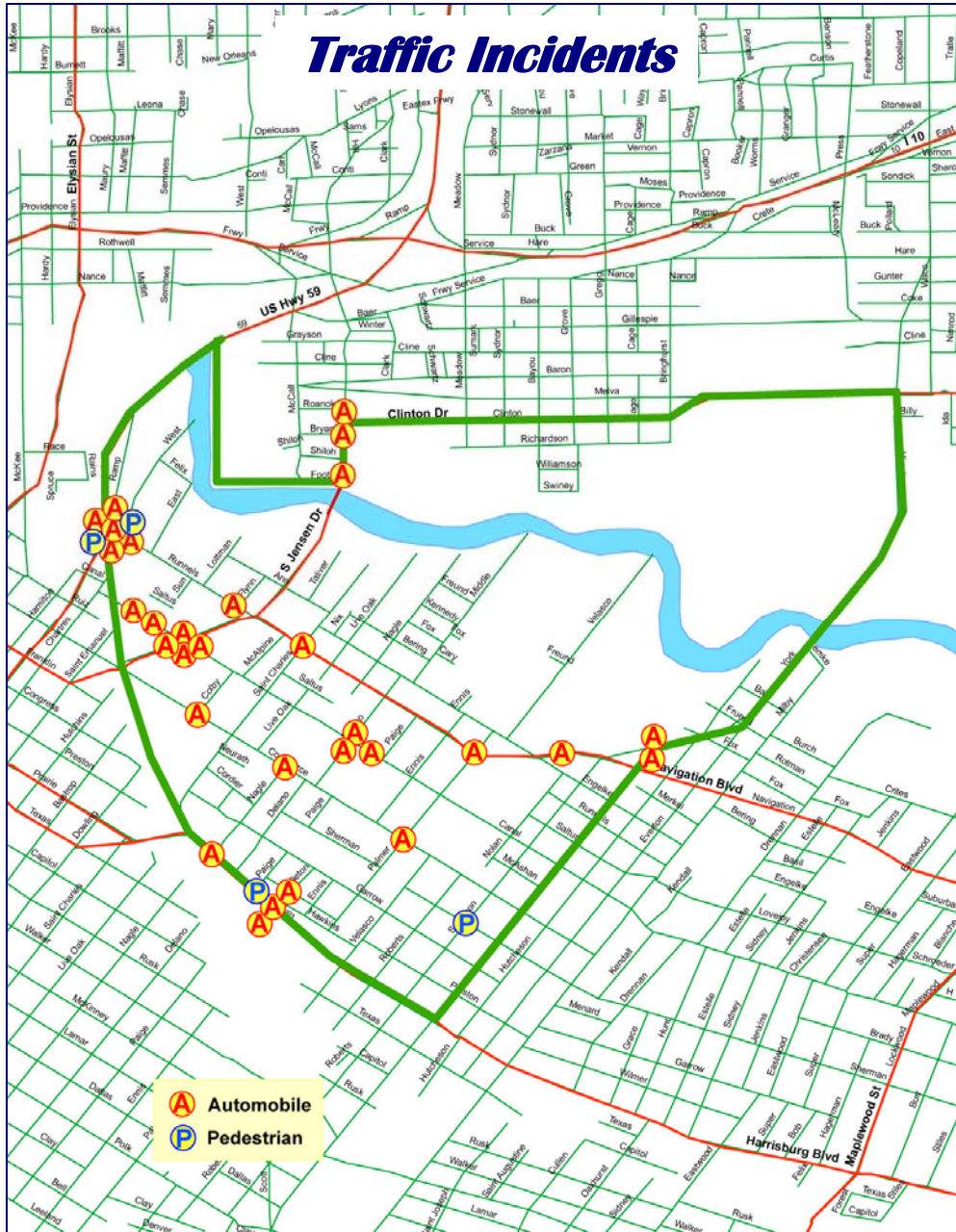


Figure 3.5 – Traffic Incidents Jan to Sep 2008 in East End Study Area

A traffic study is recommended along Canal Street between Navigation Boulevard and US 59 and at the intersection of US 59 and Runnels Street.

Chapter 4 - Community Outreach 4

The Community Outreach Program of the East End Livable Centers study included stakeholder input through an advisory committee and public meetings. These two approaches created a dialogue between stakeholders of the project area and the project team. The entire process included five advisory committee meetings and three public meetings (open houses) and is detailed in *Appendix D*.

East End Advisory Committee

Representatives of GEEMD identified individuals from the Greater East End stakeholder groups to represent the diverse community perspectives. The groups initially identified included representatives of community organizations, local land developers, businesses, churches, schools, and the four largest multi-unit housing developments. All City, County, and State elected officials associated with the East End Second Ward area were included. This comprehensive stakeholder list of over 70 individuals was narrowed to an invitation list of 20 key stakeholders. These identified representatives and the Houston-Galveston Area Council Livable Centers Group were invited to participate. The East End Livable Centers Study was explained, as well as the level of commitment and responsibilities for advisory committee members. The following representatives of diverse stakeholder groups were chosen and agreed to comprise the Advisory Committee.

East End Advisory Committee
Second Ward Super Neighborhood
East End Chamber of Commerce
Buffalo Bayou Partnership
Talento Bilingue de Houston
Ripley House, Neighborhood Centers
The Park People
New Hope Housing
Our Lady of Guadalupe Church
City of Houston Parks & Recreation Dept
City of Houston Planning Dept
City of Houston Public Works Dept.
City of Houston Traffic & Transportation
Commissioner Sylvia Garcia, Harris County Precinct 2
Metro Solutions East End Corridor
Senator Mario Gallegos, Jr. District 6
Developer, AVA Limited
Developer, Lovett Homes
City of Houston Councilman Adrian Garcia
City of Houston Councilman-at-Large
Texas Department of Transportation
Bayou Landing Townhomes

Chapter 5 - Conceptual Master Plan **5**

A conceptual Master Plan evolved over an eight-month study period. Development of the master plan went through several stages from early rough drafts through plan development and final design. Each stage received significant public input from both Advisory Committee participants and at public meetings held as open houses.

Existing conditions and opportunities were analyzed first. The project area is a mix of land uses as discussed in Chapter 2. This is not the same as a mixed-use urban setting where land uses have a symbiotic relationship of interconnected purposes and functional relationships. For the most part the challenge was to make good neighbors out of the industrial land uses and residential neighborhoods. The properties within the project area cover the spectrum from new residential development and successful well-maintained businesses to vacant structures and property. The variety offers the opportunity to build upon the successful properties and development, encourage revitalization of neighborhoods that have the opportunity to extend their useful life, and promote the new infill/mixed-use development presented in Chapter 7.

Project Area Urban Fabric Characteristics

- A Tapestry of Discontinuous Land Uses
- Incompatible Land Uses and Edge Conditions
- Not an Identifiable Place
- Major Truck Traffic Creating Barriers
- Inadequate Pedestrian Infrastructure
- Isolated Landmarks and Recreational and Social Opportunities
- Lack of Pedestrian Connectivity, Perception of Safety Problems
- Lack of Urban Structural Elements
- Poor Sidewalk Conditions
- Inadequate Access to Transit

These conditions are not unique, as many urban areas can be defined as being “in transition.” Such urban situations face the need to both preserve the past by encouraging treatment and policies that enhance the qualities that are still present, as discussed in Chapter 2 in the neighborhood revitalization discussion, and provide a structure for new and infill/mixed-use development cognizant of the newer urban forms characterized by “New Urbanism, Smart Growth, Mixed-Use and Sustainable” development that encourages walkability and transit use; minimizes the inefficient use of our urban land resources; and reduces the congestion and pollution associated with more undesirable land-use patterns.

The project area contains opportunities to achieve many of these benefits as presented in the list of opportunities presented next.

Project Area Opportunities

- New Development and Continuity Opportunities
- Rail Transit on Harrisburg
- Excellent Bus Transit
- Active, Successful Development District
- Perquisites of and Qualifications for Federal Funding
- Proximity to Downtown
- Opportunities for Connectivity
- Opportunities for Urban Structural Elements
- Pedestrian/Bicycle Linkages
- Corridors Enhancements
- Gateways
- Districts
- Growing Demand for Locally Oriented Retail

Many of the detailed components of the proposed master plan are presented in subsequent chapters, including the following:

- Improved walkability (Chapter 6)
- Specific pedestrian treatments, landscape and streetscape designs, infill/mixed-use development (Chapter 7)
- Infill opportunities and development of a land-use program that encourages the use of pedestrian infrastructure (Chapter 8)
- Mass transit and bicycle facilities and design of important community features such as the Guadalupe Park and Plaza and surrounding environment (Chapter 9)

The figures in this chapter address a variety of specific planning components associated with mobility in the form of walkability, multi-use trails, transit, biking and automobile modes; community features such as structuring, identity, and continuity; open space and green corridors; flood plains; land uses; mixed-use opportunities among others listed below. Planning components of the proposed Master Plan include the following:

- | | |
|--|---|
| • Arterial streets | • Trail Head opportunities |
| • East End LRT alignment | • Connection opportunities |
| • Southeast LRT alignment | • Future extensions of Columbia Tap Trail |
| • Bus service alignments | • Bikeways |
| • Recommended Green Corridor connections | • Talento Bilingue de Houston |
| • Existing multi-use trails | • Location of police facilities |
| • Recommended multi-use trails | • Location of schools (Rusk Elementary, Lady of Guadalupe |

- Church School, and Bruce Elementary School and Park)
- Open space opportunities
- Future boat landings
- Focus nodes
- Park space
- Open space opportunities
- Multi-family developments
- Retail/Commercial developments
- Mixed-use opportunities associated with vacant or underutilized property
- Primary pedestrian corridors
- Buffalo Bayou Partnership plans
- Wetlands
- Flood plains
- Important community features (Guadalupe Park/Plaza, Lady of Guadalupe Church School, Settagest Park, and Art Wall on Delano and Canal Streets)

Bikeways, Multi-Use Trails, and Columbia Tap Trail

Two existing bikeways currently traverse the project area. The first bikeway is along Navigation and the second bikeway is on a combination of east-west streets including Commerce, Garrow, and Sherman. Columbia Tap Trail has been completed from south to north ending at Texas at Dowling. It is proposed that this trail be extended northward along a combination of Dowling, Congress, Hutchins, and Navigation to the Guadalupe Park and Plaza and even farther north along Jensen to intercept the Buffalo Bayou Partnership's Multi-Use Trail network along Buffalo Bayou (*Figure 5.1*).

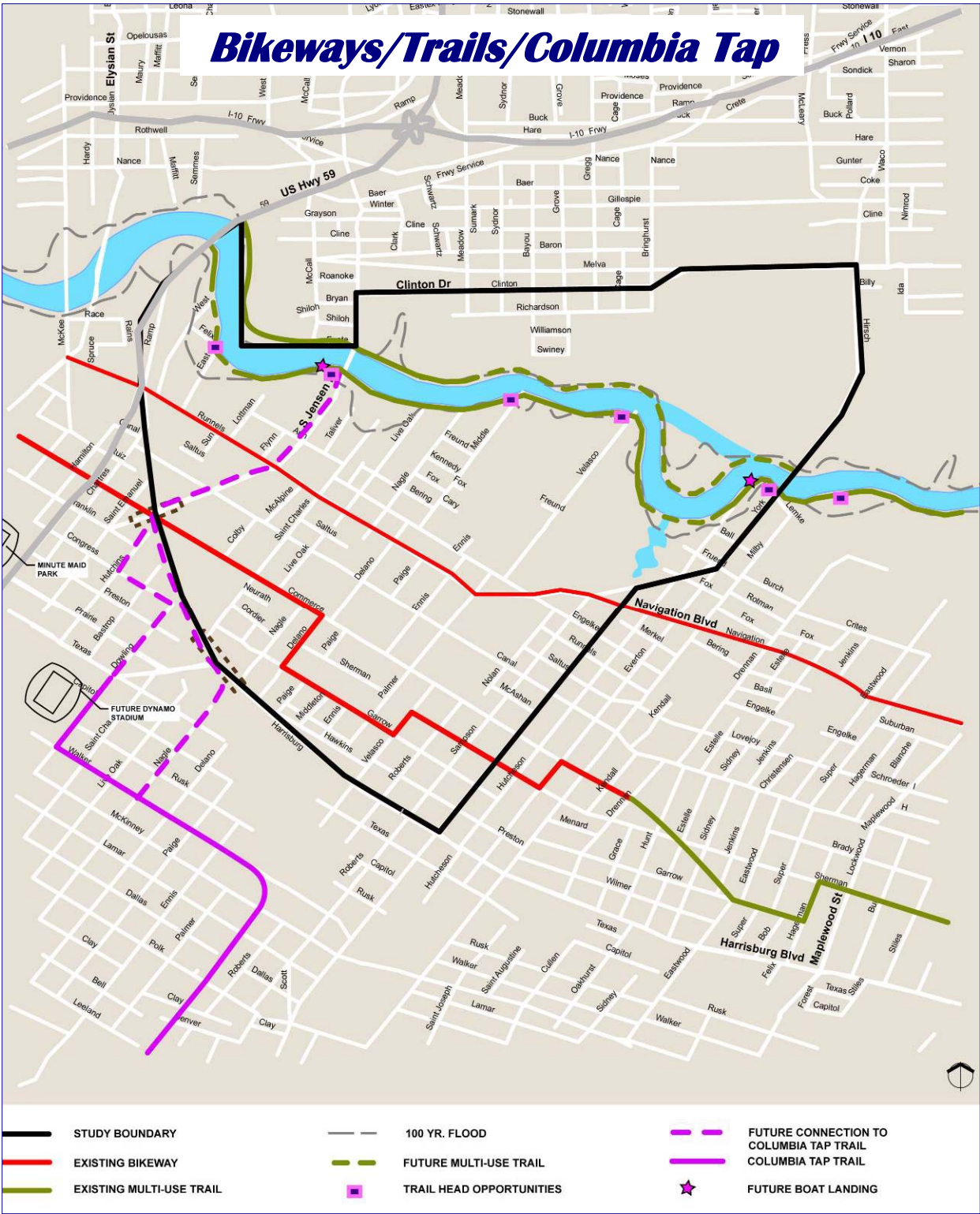


Figure 5.1 – Bikeways, Multi-Use Trails, Columbia Tap Trail

Parks, Open Space, Trails, and Green Corridors

The Greater East End District serves as a crossroads of history and culture in the Houston area. The district has numerous businesses, cultural, and civic destinations; however, these places have limited connection to each other due to diminished pedestrian infrastructure. Factors such as inferior sidewalks, limited or nonexistent wayfinding, street corridors with inadequate pedestrian right-of-way, and anti-pedestrian roadway design are some of the main reasons the district struggles with quality-of-life issues. It is critical that strong pedestrian connections are established between important district destinations to provide access to recreation, shopping, education, and other community resources.

The existing green infrastructure provides an excellent opportunity to facilitate these important pedestrian connections, including the Buffalo Bayou Corridor, existing city and county parks, and hike/bike trails. These linkage opportunities, combined with the introduction of designated green corridors along key roadways, create a network that connects people to desired destinations.

Green corridors are roadways that are improved with the pedestrian's needs in mind. These corridors promote safe pedestrian activity by providing continuous walking surfaces, accessible ramps, pedestrian-oriented lighting, and pavement finishes. Pedestrian comfort and convenience are addressed by providing tree canopy shade, site amenities including benches, waste receptacles, wayfinding signage, and connections to other pedestrian pathways.

The existing network of green corridors connects to existing and future hike/bike trails furthering the connectivity to local and regional destinations. The Columbia Tap, a "Rails to Trails project" that currently is four miles traveling from downtown to Dixie Drive past Polk, could potentially intersect the District by running through Guadalupe Park and extending to Buffalo Bayou trails. This important connection will tie GEEMD to the regional bikeway system and Buffalo Bayou, a natural resource that has yet to be fully tapped for its recreational uses.

These opportunities and planning recommendations are presented in *Figure 5.2*. Included is a broad expanse of possible green space along Buffalo Bayou. While it is acknowledged that this large area will not, in all probability, be preserved as open space, it does represent a unique opportunity given its proximity to downtown. The resulting Master Plan contains a recommended bayou edge open space that seeks to take advantage of this opportunity before it is consumed by other land uses likely to be located there due to its desirable location.

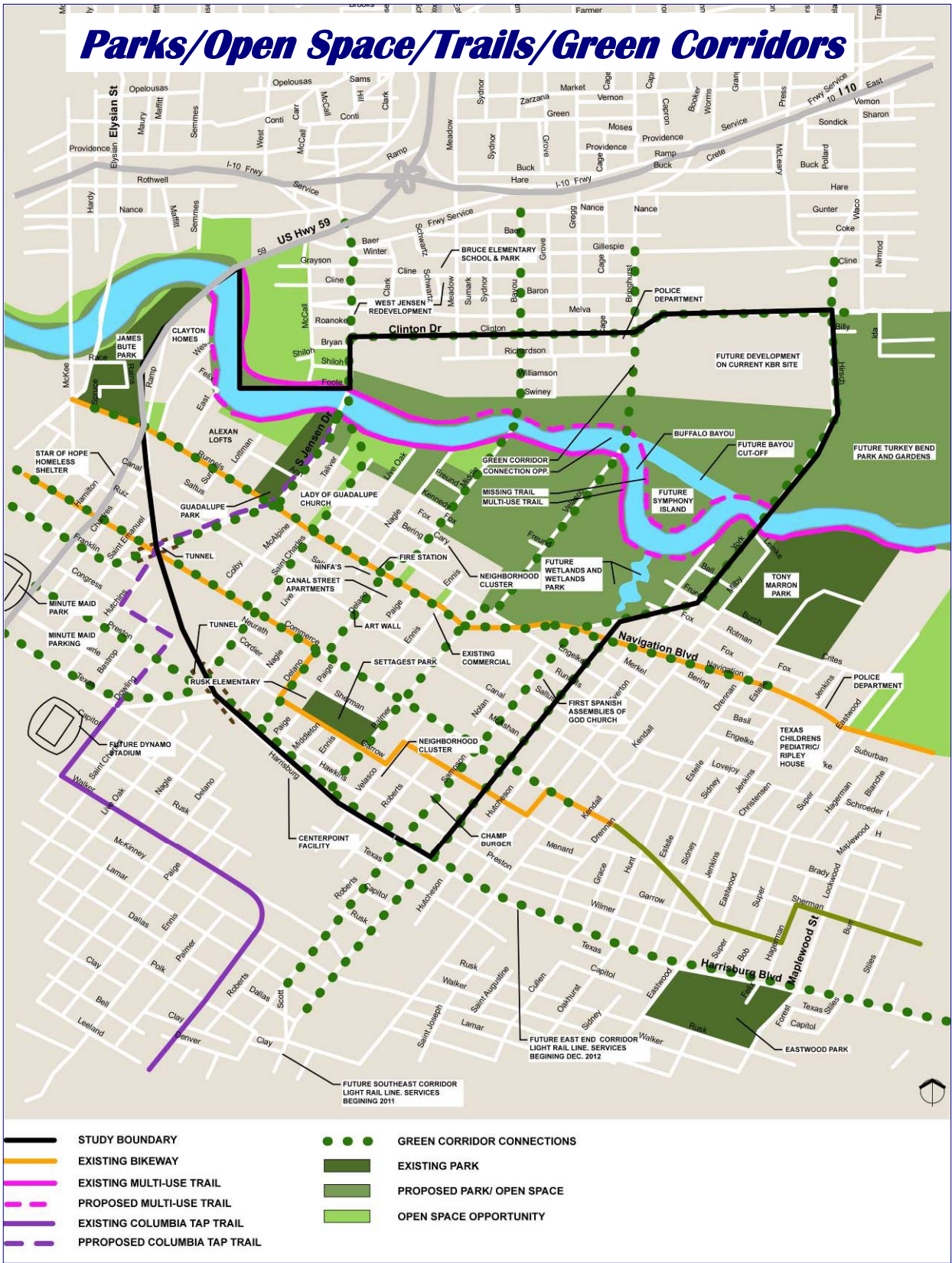


Figure 5.2 – Parks, Open Space, Trails, and Green Corridors

Connection Opportunities and Potential Gateways

A variety of connection problems and opportunities have been identified in the early stages of plan development. Connection opportunities or problems of focus within the Conceptual Master Plan respond to discontinuities in the urban fabric. Discontinuities may take several forms including conflicts between land uses, major changes in roadway or pedestrian infrastructure, shifts in the characteristics of the physical environment. Examples of these include the railroad underpasses on Navigation and Harrisburg southwest of the project area, or the bayou bridges located on Jensen or York north of the project area, or the barrier presented by US 59 west of the project area.



Figure 5.3 – Opportunities

In some cases these discontinuities can be addressed via design in the form of gateways such as those implemented by GEEMD on the railroad underpasses. The Master Plan recommends gateway treatments to sustain a smooth transition between discontinuities or to highlight a special place such as the intersection of Navigation and Jensen.

Green Corridors a Means to Achieve Integrated Modal Alternatives

This Master Plan addresses walkability needs by proposing green pedestrian corridors in addition to the pedestrian infrastructure recommendations on the project areas major arterials, presented in Chapter 6. The purpose of the green corridors is to provide pedestrian linkages designed to overcome the discontinuous street network from the southern portion of the project area to the northern portion and across the bayou as shown in *Figure 5.2*.



Figure 5.4 – Recommended Integrated Modal Mobility Alternatives

The green corridors also link the alternative mobility choices within the project area to the residential, commercial, and industrial land uses they serve. The combined recommendations in this plan result in a physical matrix of modal mobility alternatives comprising multi-use trails, advanced rail technology, bikeways, bus services, pedestrian corridors, and automobile infrastructures (*Figure 5.4*).

Proposed Master Plan

The proposed Master Plan represents a comprehensive synthesis of the planning components presented. This integration or synthesis provides for the required synergism between transportation infrastructure and land use thereby influencing higher densities, mixed uses and more walkable, sustainable urban situations characterized by H-GAC's Livable Centers program strategy. Combined in the context of carefully designed gateways and corridors it also leads to a more understandable, safer, functional, and aesthetically pleasing urban fabric, resulting in an improved quality of life for the residents who live there, the employees who work there, and the individuals passing through.

The proposed Master Plan integrates plan components from previous chapters on the following elements:

- Neighborhoods
- Land Uses
- Demographics
- Community outreach
- Existing and future bikeways, multi-use trails, and Columbia Tap Trail
- Parks, open space, trails and green corridors
- Connection opportunities and potential gateways
- Green corridors - A Means to Achieve Integrated Mobility Alternatives
- Recommended integrated modal alternatives

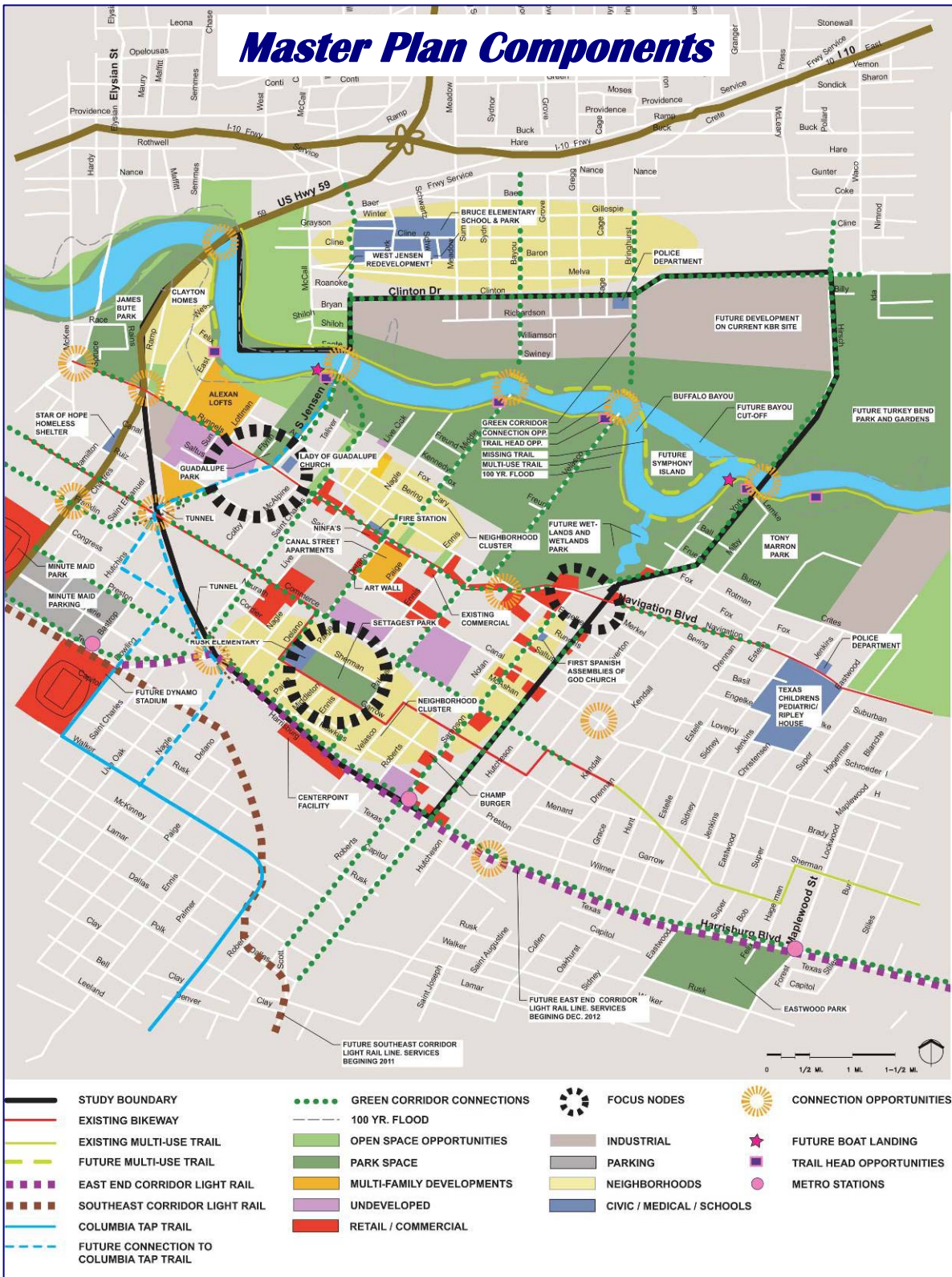


Figure 5.5 – Master Plan Components

Priority Pedestrian/Transit Corridor

Locations of major arterials, busiest pedestrian routes, and transit segments, identified in the Master Plan, combined with locations of the busiest transit stops and needs for traffic calming (Chapter 3), resulted in the establishment of major corridors wherein walkability improvements are recommended. These corridors, and the side streets serving them, underwent an extensive inventory of existing conditions (*Figure 5.5*). Additionally, these corridors were the basis of desired design treatments expressed by the Advisory Committee and the public at large at several open houses (Chapter 6).

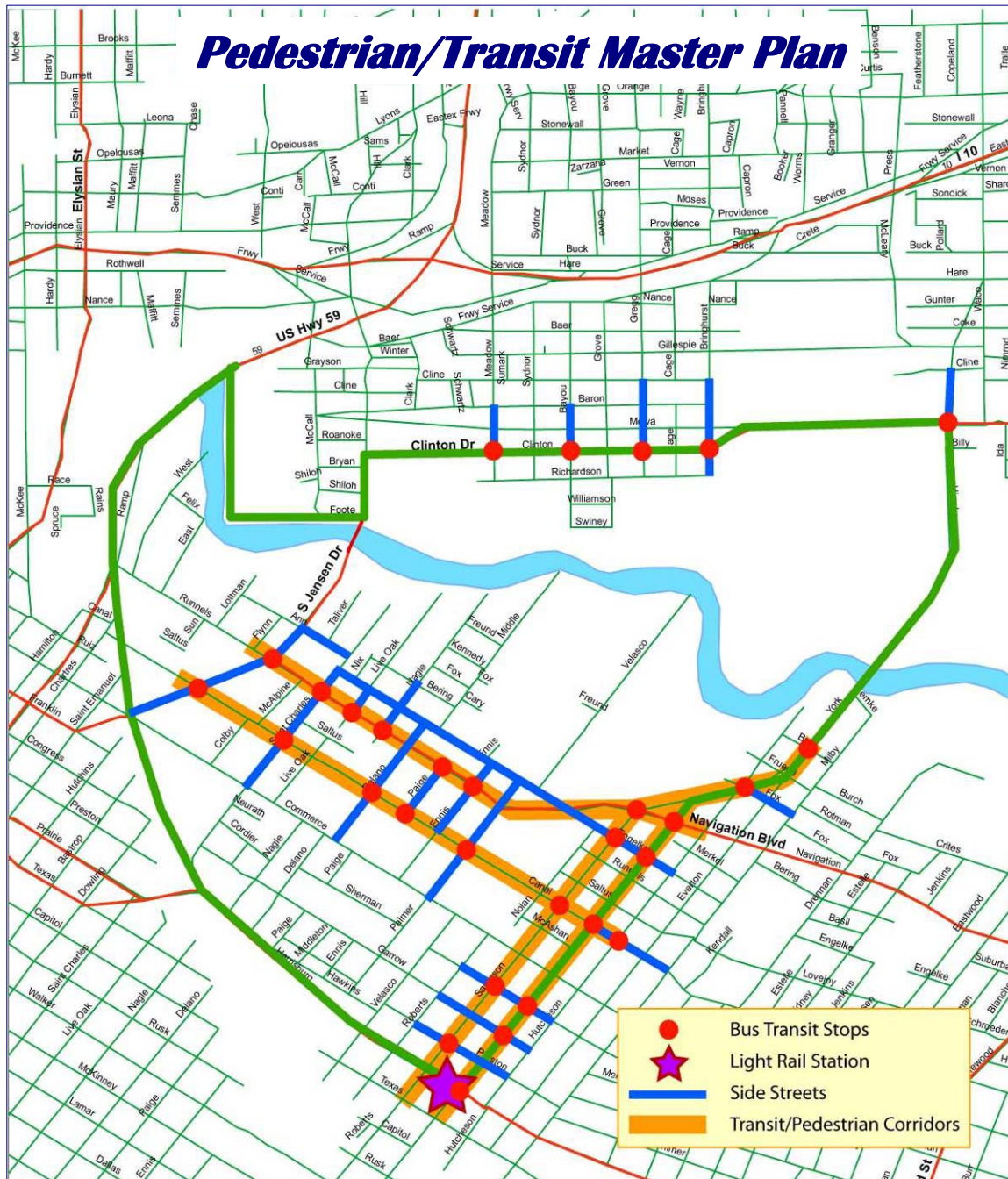


Figure 5.6 – Pedestrian/Transit Master Plan

Chapter 6 - Improved Walkability 6

Knowing the existing conditions of the pedestrian infrastructure as it relates to two of the primary goals of H-GAC's Livable Centers program (enhanced walkability and transit access) is important in selecting design treatments (both pedestrian and transit) because of the relationship between the pedestrian infrastructure and pedestrian and transit utilization, both of which affect ridership and environmental benefits. This pedestrian/transit interface is well documented in some of the most prestigious mobility organizations and publications. A report¹ prepared for the Transit Coordination Research Program, Transportation Research Board, and National Research Council, in association with the Texas Transportation Institute (TTI) states the following:

The passenger point of view, or quality of service, directly measures passengers' perception of the availability, comfort, and convenience of transit service. There are a number of factors that measure pedestrian and transit quality of service:

- *Service coverage (near one's origin and destination)*
- *Pedestrian environment*
- *Scheduling: Frequency of service*
- *Amenities*
- *Transit information*
- *Transfers*
- *Total trip time*
- *Cost*
- *Safety and security*
- *Passenger loads*
- *Appearance and comfort*
- *Reliability*

Of the factors listed above, the following items address pedestrian quality of service.

- ***Pedestrian Environment*** - Even if a transit stop is located within a reasonable walking distance of one's origin and destination, the areas around the transit stops must provide a comfortable walking environment in order for transit to be available.
- ***Amenities*** - The facilities that are provided within the walking distance of transit stops and stations help make transit more comfortable and convenient for transit users. Typical amenities include benches, shelters, informational signing, trash receptacles, and telephones.

¹ *Transit Capacity and Quality of Service Manual*, Kittelson and Associates, Inc.

- **Safety and Security** - Passengers' perceptions of safety must be considered in addition to actual conditions. Transit corridors and stops must be well lit. Planting strips, bollards, or on-street parking can provide barriers between pedestrians and vehicles.
- **Appearance and Comfort** - Having clean transit stops with pedestrian lighting and some landscaping improves transit's image, especially when attracting choice riders.

The close relationship between an improved pedestrian environment and its contribution to a better transit service and increased ridership has been documented in several studies nationwide. The most recent research addressing the relationship between the pedestrian environment, which is measured in Pedestrian Level of Service (PLOS), and the bus service performances, which is measured in BLOS, is contained in the 2002 *Quality and Level of Service Handbook*, prepared by the Florida Department of Transportation (FDOT). The handbook presents compelling evidence of a relationship between the quality of the pedestrian environment as PLOS, and the quality of the bus service as BLOS.

The following additional studies address the relationship between pedestrian conditions and transit utilization.

- A study of 400 Portland neighborhoods indicate that "households in pedestrian-friendly neighborhoods make over three times as many transit trips and nearly four times as many walk and bicycle trips as households located in neighborhoods with poor pedestrian environments."²
- "The analysis suggests that Vehicle-Miles Traveled (VMT) per household in pedestrian-hostile neighborhoods would be reduced by as much as 10% with a significant improvement in the pedestrian environment."³

Eight major pedestrian/transit corridors and selected side streets, serving the transit thereon, have been identified as in need of improvement to enhance their walkability and transit access, thereby increasing both pedestrian and transit use and resulting in a reduction in automobile emissions.

Of these corridors Clinton Street, Harrisburg Boulevard, Jensen Drive, and portions of Runnels Street and Navigation Boulevard present special cases and, therefore, will be treated uniquely. Clinton Street has large undeveloped segments that provide an opportunity to enlist private sector developers in enhancing the priorities of East End concerning walkability and transit access. The focus is to develop design guidelines for future development of the areas between the curb and the property line that are oriented toward achieving these goals. Capturing the future values associated with this private sector investment in the public infrastructure is discussed in the funding and implementation chapter.

The Harrisburg corridor is the alignment for METRO's Light Rail Transit (LRT) facility and the pedestrian/transit access improvements will be part of that project. The street segments surrounding Guadalupe Park and Plaza, Jensen Drive, and portions of Runnels Street and Navigation Boulevard, will be an integral part of the new design of the Park and its surroundings and will be addressed in the design phase of the project.

² Source: 1000 Friends of Oregon, 1994.

³ Source: 1000 Friends of Oregon, 1994.

The remaining corridors within the study area are analyzed using the following process:

- Scoring of Existing PLOS
- Recommended Treatments
- Costs of Recommended Treatments
- Revised Scoring of PLOS

Inventory Criteria

Each block face along each corridor was inventoried to determine the extent of needed treatment. Elements that were analyzed include the following:

- Sidewalks
- Curbs
- Driveways
- Ramps
- Crosswalks
- Pedestrian-oriented Lighting
- Landscaping
- Amenities

Each inventory item was given a score reflecting the extent of treatment needed: maximum, moderate, or minimum, as shown below.

2	=	Maximum Treatment Needed
1	=	Moderate Treatment Needed
0	=	Minimum Treatment Needed

Existing Conditions Scoring

An example showing block face scoring of Canal between St. Charles and Live Oak. The total score is “13” based on the combined scores of all items. Each block face on each corridor was scored in this manner and the combined rankings are presented in *Table 6.3*. The existing conditions leading to the scores presented then are summarized.

<i>Example Block Face Scoring</i>		
Canal North Side Between St. Charles and Live Oak		
<i>Criteria</i>	<i>Ranking</i>	<i>Explanation</i>
Sidewalks	2	Narrow with obstacles, in poor repair
Driveways	1	In poor repair
Curbs	1	Damaged
ADA	2	Not compliant
Crosswalks	1	Worn striping
Lighting	2	No pedestrian-oriented lighting
Landscaping	2	None
Amenities	2	None
Total	13	

Table 6.1 – Combined Rankings by Corridor

Navigation Boulevard	
Sampson and York plus 500 feet	13
RR Tracks to Sampson	13
Palmer to Nolan @ RR tracks	12
Ennis to Palmer	13
Paige to Ennis	10
Delano to Paige	11
Nagle to Delano	12
Live Oak to Nagle	11
St. Charles to Live Oak	11
Canal	
Navigation to McAlpine	10
McAlpine to St. Charles	10
St. Charles to Live Oak	13
Live Oak to Delano	9
Ennis to Palmer	11
Palmer to RR	12
Nolan to Sampson	13
Sampson to York	12
York plus 500 feet	12
Sampson	
Navigation to Engelke	14
Engelke to Runnels	11
Runnels to Saltus	13
Saltus to Canal	12
Canal to McAshan	14
McAshan to Commerce	14

Sherman to Garrow	14
Garrow to Preston	14
Preston to Harrisburg	13
York	
East of Harrisburg to Preston	13
Preston to Garrow	13
Garrow to Sherman	13
Sherman to Commerce	13
Commerce to McAshan	13
Canal to Saltus	13
Saltus to Runnels	13
Runnels to Engelke	14
Engelke to Navigation	13
Navigation to Hutcheson	11
Hutcheson to Freund	11
Freund to Ball	13
Ball to RR	13
RR to Lemke (@ Tony Marron Park)	11

Roberts at Railroad Crossing to Palmer

This block is primarily vacant with a sidewalk that is in satisfactory condition. However, approximately 25% of the sidewalk needs replacing; the narrow planting strip does not have trees for shade; there is no pedestrian-oriented lighting. There is one business at the west corner shown in the second photo that needs ramps for Americans with Disabilities Act (ADA) accessibility and compliance.



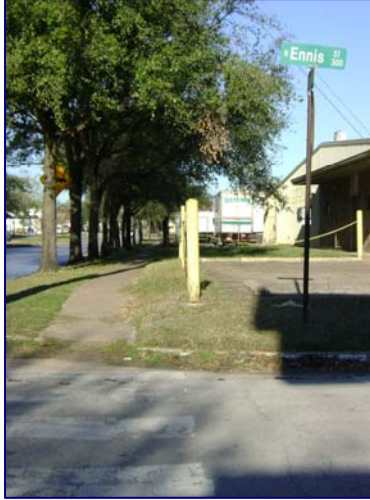
Palmer to Ennis

This block is commercial. Sidewalks are in satisfactory condition and some portions of the planting strip have trees providing shade. Approximately 25% of the block needs new sidewalk installed and trees planted. There is no pedestrian-oriented lighting.



Ennis to Paige

This block is commercial. The block needs weed maintenance. Sidewalks and ramps are otherwise in satisfactory condition. The planting strip provides adequate shade; however, there is no pedestrian-oriented lighting.



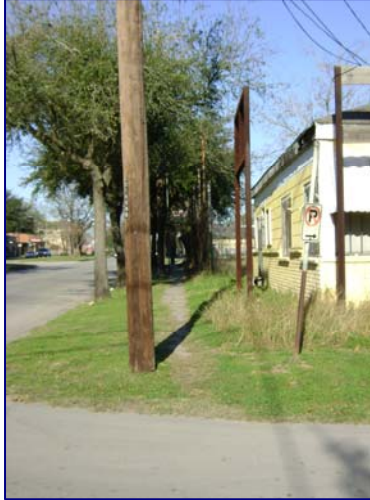
Paige to Delano

Approximately half of this block is vacant and the other half is occupied by the local Fire Department. The portion of the block near the fire station is in good condition with a sidewalk and a ramp. However, the east end, where the vacant property is, needs weed maintenance and sidewalk replacement to make it level.



Delano to Nagle

This block is industrial and commercial and has a decent planting strip with trees for shade. There is no pedestrian-oriented lighting and ramps are needed. Some weed maintenance is needed along this block.



Nagle to Live Oak

This block is industrial and commercial with a decent planting strip with trees for shade. There is no pedestrian-oriented lighting and ramps are needed. Some weed maintenance is needed along this block.



Live Oak to St. Charles

This block is industrial and commercial. It does not have a planting strip and there is no pedestrian-oriented lighting. Some weed maintenance is needed along this block.



St. Charles to McAlpine (Jensen)

This block is occupied by a church and therefore has satisfactory sidewalks and ramps. There is no planting strip and there is limited space for adding one or pedestrian-oriented lighting which the block also does not have. The intersection across McAlpine/Jensen is shown in the photo.



NAVIGATION BOULEVARD - SOUTH SIDE

St. Charles to Live Oak

This block is occupied by a single business, Crespo Funeral & Cremation Services. As a result, the sidewalk and driveway in this block are in satisfactory condition; however, there is only street lighting for vehicle traffic and no pedestrian-oriented lighting, which would enhance the walkability of the block. There is no planting strip or trees for shade.



Live Oak to Nagle

This is a mix-use block with business, residential, and vacant properties. A portion of the block has a planting strip with shade; however, most of the block does not. There is no pedestrian-oriented lighting. Ramps at both ends of the block need maintenance at the least and probably should be replaced.



Nagle to Delano

This block is commercial and completely occupied by the original Mama Ninfa's restaurant. While this study was underway, the block was undergoing renovations including portions of the sidewalk, driveway, and parking lot. It is, therefore, difficult to assess which improvements may be needed. However, it is clear the block does not contain pedestrian-oriented lighting or a planting strip for plants and trees for shade.



Delano to Paige

This block is commercial with businesses on both sides. Sidewalks are broken and uneven. Approximately half of the curbs need to be replaced.



Paige to Ennis

This block has an unoccupied business. Since the business is unoccupied, the entire block is in disrepair and needs pedestrian-oriented lighting, sidewalks, ramps, and a planting strip for shade.



Ennis to Palmer

This block is commercial and has adequate sidewalks and ramps along with a planting strip with some plants for shade. However, there is one portion of the block where the sidewalk is in disrepair and needs replacing. There is no pedestrian-oriented lighting which would improve the walkability of the block.



Palmer to Roberts

[This block is vacant and has not been maintained. Both the sidewalk and curb need to be replaced. While there is a planting strip, it is in disrepair and need replanting. There is no pedestrian-oriented lighting.



Roberts to Nolan

These short blocks are commercial and both the sidewalk and curb need to be replaced. There is no planting strip, but since the block is so short, one might not be needed.



Nolan to Sampson/York

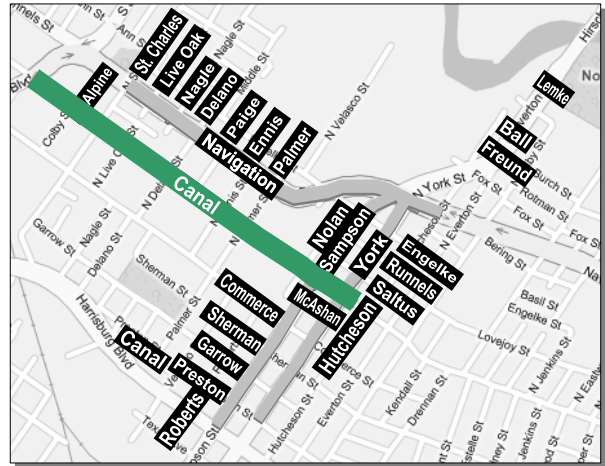
This segment of the Navigation corridor is commercial and vacant. Sidewalks and curbs are cracked and uneven. A large volume of traffic travels through these intersections and pedestrian safety needs special attention.



CANAL STREET CORRIDOR - NORTH SIDE

Navigation to McAlpine

The Canal corridor, between Navigation and McAlpine, is commercial. The sidewalks and curbs are not adequate and approximately half need to be replaced. Ramps are needed at the McAlpine intersection and at Navigation some maintenance is needed to make the ramp accessible. Street lighting currently exists; however, pedestrian-oriented lighting is recommended on the commercial corridor for pedestrian safety.



McAlpine to St. Charles

The Canal corridor, between McAlpine and St. Charles, is commercial. Sidewalks and curbs are inadequate and need to be replaced. Ramps are needed at both ends of the block. While street lighting currently exists, pedestrian-oriented lighting is recommended to enhance pedestrian safety.



St. Charles to Live Oak

The Canal corridor, between St. Charles and Live Oak, is commercial. Sidewalks and curbs are barely adequate and approximately half need to be replaced. It is important to note that the sidewalks in this block are extremely narrow (varies between 18 inches and 30 inches). Ramps are needed at both ends of the block. While street lighting currently exists, pedestrian-oriented lighting is suggested on the commercial corridor to enhance pedestrian safety.



Live Oak to Delano

The Canal corridor, between Live Oak and Delano, is commercial, approximately half of which is vacant. Sidewalks and curbs are barely adequate and approximately half need to be replaced. Ramps are needed at both ends of the block. While street lighting currently exists, pedestrian-oriented lighting is recommended to enhance pedestrian safety. In addition, there are driveways in this block which would need to be replaced when the sidewalks and curbs are replaced.



Delano to Paige

The Canal corridor, between Delano and Paige, has light industrial on the south side and residential on the north side. Sidewalks and curbs are cracked and approximately half need to be replaced.



Paige to Ennis

The Canal corridor, between Paige and Ennis, is commercial. Of the existing sidewalks and curbs along this block, approximately half need to be replaced. The block offers no trees for shade and although there are street lights, there is no pedestrian-oriented lighting.



Ennis to Palmer

The Canal corridor, between Ennis and Palmer, is commercial. Sidewalks and curbs need to be replaced. All driveways need replacing when the sidewalks are redone. Two ramps are needed. There are no trees for shade and no pedestrian-oriented lighting, both of which are recommended.



Palmer to RR

The Canal corridor, between Palmer and the railroad tracks, is commercial. Approximately 75 percent of the sidewalks and curbs need to be replaced. Ramps are needed at both ends of the block. Since there is only street lighting in this block, pedestrian-oriented lighting is recommended.



From RR to Nolan

The Canal corridor, from the railroad tracks to Nolan, is primarily commercial with some adjacent vacant property. The block lacks sidewalks, curbs, and driveways. At a minimum, sidewalks, curbs, and ramps need to be installed. There is no planting strip and no trees for shade. Although there are street lights, installation of pedestrian-oriented lighting is recommended to enhance the walkability of this block.



Nolan to Sampson

This block is commercial and sidewalks and curbs need to be replaced. There is no planting strip or trees for shade. Pedestrian-oriented lighting is recommended since only street lighting currently exists.



Sampson to York

This block is commercial with inadequate sidewalks and curbs which all need replacing. Sidewalks and ramps need maintenance. This block offers no shade or pedestrian-oriented lighting.



CANAL STREET CORRIDOR - SOUTH SIDE

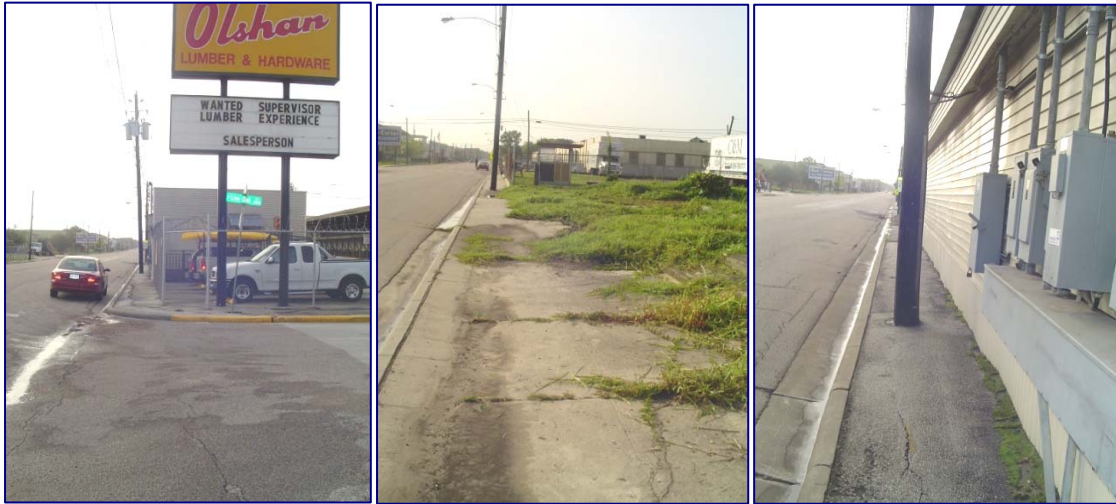
Franklin to St. Charles

The Canal corridor, between Franklin and Colby, is predominately vacant. Sidewalks and curbs are barely adequate and approximately half need to be replaced. Ramps are accessible and in good condition. However, wherever new sidewalks are installed, new ramps will need to be added. Street lighting currently exists; however, pedestrian-oriented lighting is recommended for pedestrian safety. The Canal corridor, between Colby and St. Charles, is mixed-use commercial and shops. Sidewalks and curbs are barely adequate and half need to be replaced. Pole obstacle appears near the end of curb. Wherever new sidewalks are installed, ADA improvements need to be added. Landscaping, trees, and benches are nonexistent and need to be added to improve pedestrian comfort.



St. Charles to Live Oak

The Canal corridor, between St. Charles and Live Oak, has a high percentage of commercial land use. No planting strips exist to improve pedestrian comfort and pole obstructions appear within the sidewalks. The sidewalk and curbs are barely adequate and approximately half need to be replaced. Pole obstruction appears near the end of curb. Wherever new sidewalks are, ADA improvements need to be added. Pedestrian-oriented lighting and trees need to be installed in order to raise the existing Pedestrian Level of Service (PLOS) and transit ridership.



Live Oak to Delano

The Canal corridor, between Live Oak and Delano, is mixed-use vacant and commercial. Sidewalks are paved with asphalt and are not adequate; approximately half need to be replaced. No planting strips exist to improve pedestrian comfort and pole obstructions appear within the sidewalks.



Delano to Ennis

The Canal corridor, between Delano and Ennis, is predominately industrial. No planting strips exist to improve pedestrian comfort and several pole obstructions appear within the three-foot wide sidewalks. The sidewalk and curbs are barely adequate and approximately half need to be replaced. Ramps need to be added wherever new sidewalks are installed. Landscaping, trees, and benches are nonexistent and need to be added to improve pedestrian comfort.



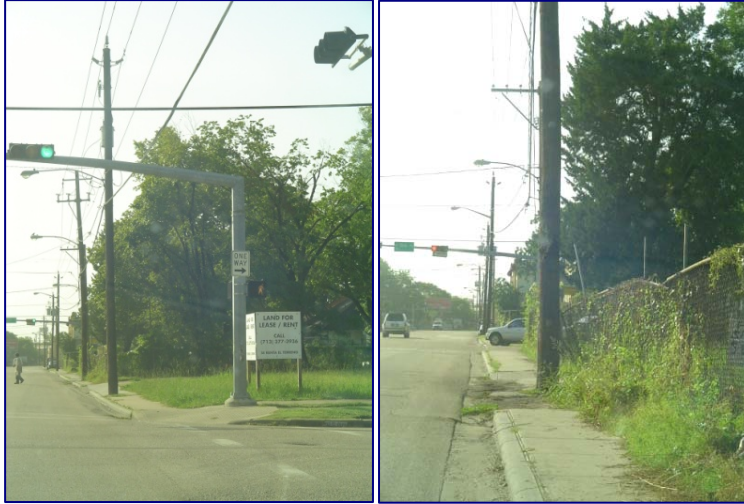
Ennis to Palmer

The Canal corridor, between Ennis and Palmer, is predominately commercial and shops. Approximately 25 percent of sidewalks need to be replaced. No planting strips exist to improve pedestrian comfort and several pole obstructions appear within the sidewalks. Ramps need to be added wherever new sidewalks are installed. Where there is adequate easement space available, pedestrian-oriented lighting and trees need to be added.



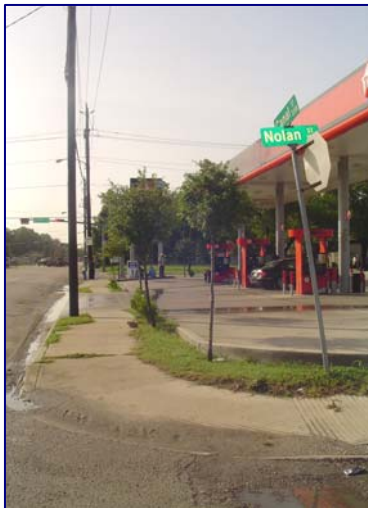
Palmer to Nolan

The Canal corridor, between Palmer and Nolan, is predominately industrial. Sidewalks and curbs are barely adequate and half of them need to be replaced. Pole obstruction appears and there is no planting strip. There are no sidewalks, curbs, or ramps near the railroad tracks and need to be added.



Nolan to Sampson

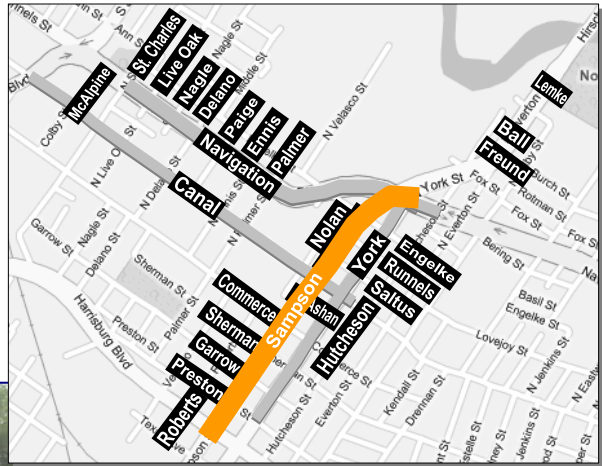
The Canal corridor, between Nolan to Sampson, is predominately vacant. Approximately 25 percent of sidewalks and curbs need to be replaced. Ramps are in good condition.



SAMPSON STREET CORRIDOR - EAST SIDE

Navigation to Engelke

This block is predominately commercial. Sidewalks and curbs are adequate; however, one ramp is needed.



Engelke to Runnels

This block is predominately residential. Sidewalks are adequate; however, approximately half of the curbs need to be installed. Approximately 25 percent of the single-lane driveways are damaged and need to be replaced. Landscaping and trees are nonexistent and need to be added to improve pedestrian comfort.



Runnels to Saltus

This block is predominately commercial. Sidewalks and curbs are barely adequate and approximately half need to be replaced. Ramps are in good condition. Landscaping and trees are nonexistent and need to be added to improve pedestrian comfort.



Saltus to Canal

This block is mixed-use commercial and residential. Sidewalks and curbs are barely adequate and half need to be replaced. Approximately 25 percent of the single-lane driveways are damaged and need to be replaced. Ramps need to be installed. Pedestrian-oriented lighting needs to be installed to improve pedestrian safety.



Canal to McAshan

This block is predominately vacant. Sidewalks are inadequate and need to be replaced. Approximately 50 percent of the curbs need to be replaced. Ramps need to be installed. Pedestrian-oriented lighting is recommended on the commercial corridors for pedestrian safety.



McAshan to Commerce

This block is predominately residential. The sidewalks are barely adequate and approximately half need to be replaced. The entire curb will need to be replaced. Ramps need to be installed.



Commerce to Sherman

This block is mixed-use vacant, residential, and commercial. Sidewalks, curbs, and ramps are inadequate and need to be installed. Landscaping and trees are nonexistent and need to be added to improve pedestrian comfort.



Sherman to Garrow

This block is mixed-use vacant, residential, and commercial. Sidewalks and curbs are inadequate and need to be replaced.



Garrow to Preston

This block is predominately commercial. Sidewalks and curbs are barely adequate and approximately 75 percent need to be installed. Ramps need to be installed.



Preston to Harrisburg

The Sampson corridor, between Preston and Harris, is predominately commercial. Approximately 50 percent of the sidewalks and curbs need to be replaced. Approximately 25 percent of the double-lane driveways are damaged and need to be replaced. Ramps need to be installed.



SAMPSON STREET CORRIDOR - WEST SIDE

Navigation to Engelke

This block is comprised solely of a gas station and a convenience store. Sidewalks and ramps are in good shape. There is an adequate planting strip; however, it has no trees for shade. It also does not have pedestrian-oriented lighting; however, the lights from the station might be adequate for walking safety.



Engelke to Runnels

This is a commercial block where at least half of the sidewalk and driveways need replacing. The planting strip needs trees planted for shade. There is no pedestrian-oriented lighting for walkability and safety.



Runnels to Saltus

This block of the Sampson corridor contains a vacant industrial building which is next to vacant land. While the sidewalk and ramps are in satisfactory condition, weeding maintenance is needed. A curb is needed to make the planting strip more appealing once it is planted with trees for shade. There is no pedestrian-oriented lighting.



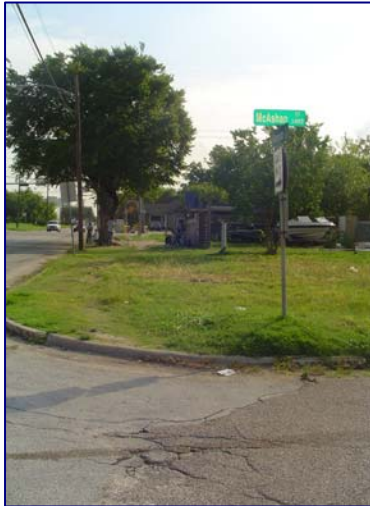
Saltus to Canal

This is a residential block where the sidewalk needs replacing. There are no ramps at either end of the block or trees in the planting strip. There is no pedestrian-oriented lighting.



Canal to McAshan

This side of the street is occupied by a gas station. Approximately half of the sidewalks and curbs need to be replaced.



McAshan to Commerce

This block of the Sampson corridor is commercial. While the sidewalk is in satisfactory condition along with the planting strip, there are no ramps. The planting strip provides adequate shade; however, there are no pedestrian-oriented lighting for walking and safety.



Commerce to Sherman

This block is commercial. However, at least half of the sidewalk and driveways need replacing. There is no planting strip as it is currently designed though there is room for one. There is no pedestrian-oriented lighting.



Sherman to Garrow

This is primarily a residential block which has a narrow sidewalk with ramps. While the planting strip does not have trees, there is adequate space for planting. Pedestrian-oriented lighting is needed to increase the walkability of the block.



Garrow to Preston

This block is mostly commercial and contains the area's well known Champs' Burger joint. The sidewalk, curb, and lighting are sufficient because of the block's commercial use.



Preston to Harrisburg

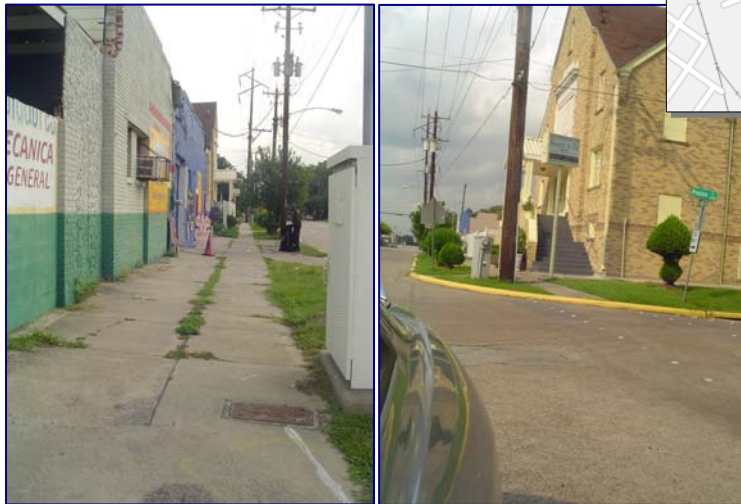
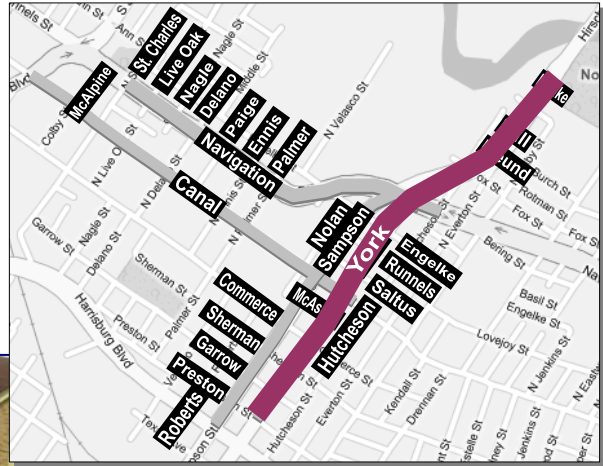
This is primarily a vacant block in which the sidewalk, ramp, and planting strip need maintenance if not complete replacement.



YORK STREET CORRIDOR - EAST SIDE

Harrisburg to Preston

The York corridor, between Harrisburg and Preston, is predominately commercial. Approximately 25 percent of the sidewalks and curbs need to be replaced. Ramps need to be installed.



Preston to Garrow

The York corridor, between Preston and Garrow, is predominately residential. Approximately 50 percent of the sidewalks needs to be replaced. Ramps need to be installed.



Garrow to Sherman

The York corridor, between Preston and Sherman, is predominately mixed-use residential and commercial. The sidewalks, curbs, and ramps are in adequate conditions (the ramps appear to have been installed recently).



Sherman to Commerce

The York corridor, between Sherman and Commerce, is predominately residential. Sidewalks and curbs are barely adequate and approximately half need to be replaced. No ramps are present and need to be installed.



Commerce to McAshan

The York corridor, between Commerce and McAshan, is predominately residential. The sidewalks and curbs are barely adequate and approximately half need to be replaced. Ramps are not present and need to be installed. However, wherever new sidewalks are installed, new ramps need to be added. Street lighting currently exists; however, pedestrian-oriented lighting is recommended on the commercial corridors for pedestrian safety.



McAshan to Canal

The York corridor, between McAshan to Canal, is predominately residential. Sidewalks and curbs are barely adequate and approximately 25 percent need to be replaced. One ramp needs to be installed.



Canal to Saltus

The York corridor, between Canal and Saltus, is commercial. Approximately 75 percent of the sidewalks need to be replaced. Approximately 25 percent of the curbs need to be replaced. The ramps are accessible and in good condition; however, one ramp needs to be installed.



Saltus to Runnels

The York corridor, between Saltus and Runnels, is commercial. The sidewalks and curbs are barely adequate and approximately 25 percent need to be replaced. Ramps need to be installed.



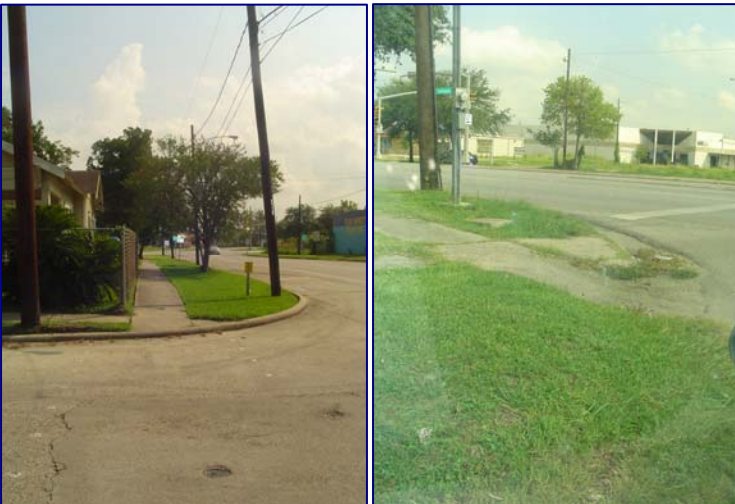
Runnels to Engelke

The York corridor, between Runnels and Engelke, is predominately residential. Sidewalks are barely adequate and all need to be replaced. Approximately 50 percent of the curbs need to be replaced. Ramps are nonexistent and need to be installed.



Engelke to Navigation

The York corridor, between Engelke and Navigation, is mixed-use residential and vacant land. The sidewalks are barely adequate and approximately half need to be replaced. Approximately 25 percent of the curbs need to be replaced. One ramp needs to be installed.

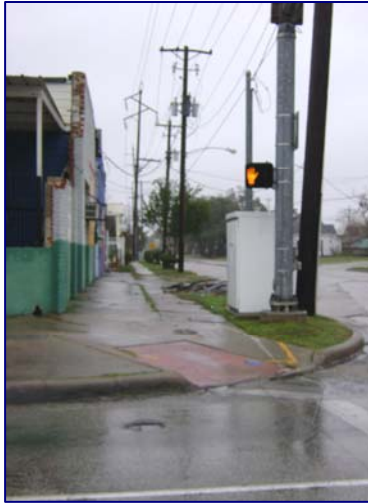


YORK STREET CORRIDOR – WEST SIDE

This block is mostly commercial and contains the area's well-known Champs' Burger joint. The sidewalk, curb, and light are sufficient because of the block's commercial use.

Harrisburg to Preston

This is a commercial block with a sidewalk that is in satisfactory condition; however, the planting strip needs maintenance, trees planted for shade, and pedestrian-oriented lighting installed.



Preston to Garrow

This is a residential block where the sidewalk needs weed maintenance but otherwise is in satisfactory condition. The curb and planting strip are adequate, although the planting strip does not have any trees for shade. There is no pedestrian-oriented lighting.



Garrow to Sherman

This is a commercial block where the sidewalk and planting strip are in satisfactory condition, but is in need of some weeding. The planting strip is large, but does not have any trees for shade or pedestrian-oriented lighting for walking.



Sherman to Commerce

This is a residential block. The sidewalk and planting strip are in satisfactory condition; however, the planting strip has no trees. Both ends of the block need ramps installed and there is no pedestrian-oriented lighting.



Commerce to McAshan

This is a mixed-use block with a sidewalk and planting strip that are in satisfactory condition. However, there are no ramps at either end of the block and there is no pedestrian-oriented lighting.



McAshan to Canal

This block of the York corridor is residential and, while the sidewalk is in satisfactory condition, there are no ramps at either end of the block. The large planting strip has no tree for shade and there is no pedestrian-oriented lighting.



Canal to Saltus

This is a residential block where approximately 25 percent of the sidewalk needs replacing. Ramps at both ends of the block need replacing. The planting strip is large and does have trees for shade; however, there is no pedestrian-oriented lighting.



Saltus to Runnels

This is a residential block. Sidewalks, curbs, and ramps need to be replaced once maintenance has taken place.



Runnels to Engelke

This block is residential with a need for new sidewalks. Some of the curb is adequate; approximately half need to be replaced. The distance from the curb to the property line is six feet.



Engelke to Navigation

This is a residential block where the sidewalk and planting strip are in good condition and there are trees for shade. However, there are no ramps or pedestrian-oriented lighting.



Navigation to Lemke (Tony Marron Park)

This long stretch of corridor crosses Hutcheson, Freund, and Ball to connect Navigation to Tony Marron Park and Buffalo Bayou. It is mixed-use residential and commercial. There is adequate room for a planting strip that would soften the streetscape. Most of the sidewalk and curb needs replacing.



Advisory Committee/Public Preferences

In order to gather feedback from the community as to their preferences for streetscape treatments, the Advisory Committee and members of the public were taken through an exercise in which they were shown a set of conceptual renderings and photos representative of various types of streetscape treatments that may be applied in the East End. These renderings depicted various elements of the pedestrian realm, including sidewalk size and construction, pedestrian-oriented lighting, landscaping, street furniture, crosswalks, and other elements. Participants were asked to indicate which renderings they liked and which they did not, by way of placing green and red dots on the photos. Photos were grouped by corridor, with individual sets of photos for Navigation, Canal, and the one-way pair of Sampson and York. The following figures are the same photos that were used to gather input as to preferences, along with the reasons given for the rankings as revealed by the Advisory Committee members. When the exercise was conducted at the Public Open House held on February 4, 2009, the results were extremely similar in terms of the design elements that were preferred and those that were not.

NAVIGATION BOULEVARD



Figure 6.1 – Concept 1 for Navigation (Cooper Carry Design in Fort Worth, Texas)

The concept in *Figure 6.1* was well liked by the committee members, receiving a total of 10 green dots. It was stated that it looks welcoming, creates a sense of community, and looks like a gathering place. The sidewalk pavers were well-received, although one committee member noted that the pavers could become a trip hazard. It was noted that the particular type of low, dense hedges shown in the rendering have a tendency to trap trash and require a significant amount of maintenance. One member noted that it would be nice to have a tree close to the bench to provide shade.



Figure 6.2 – Concept 2 for Navigation

The concept in *Figure 6.2* received 7 green dots. Committee members stated they liked the overall greenery, and the curved lines of the landscaping and the sidewalk make the streetscape more aesthetically pleasing than a straight sidewalk.



Figure 6.3 – Concept 3 for Navigation

Committee members commented that the landscaping in the photo in *Figure 6.3* looks like it would get in the way of pedestrian mobility, and like it might be high maintenance. Therefore, it received 7 red dots.

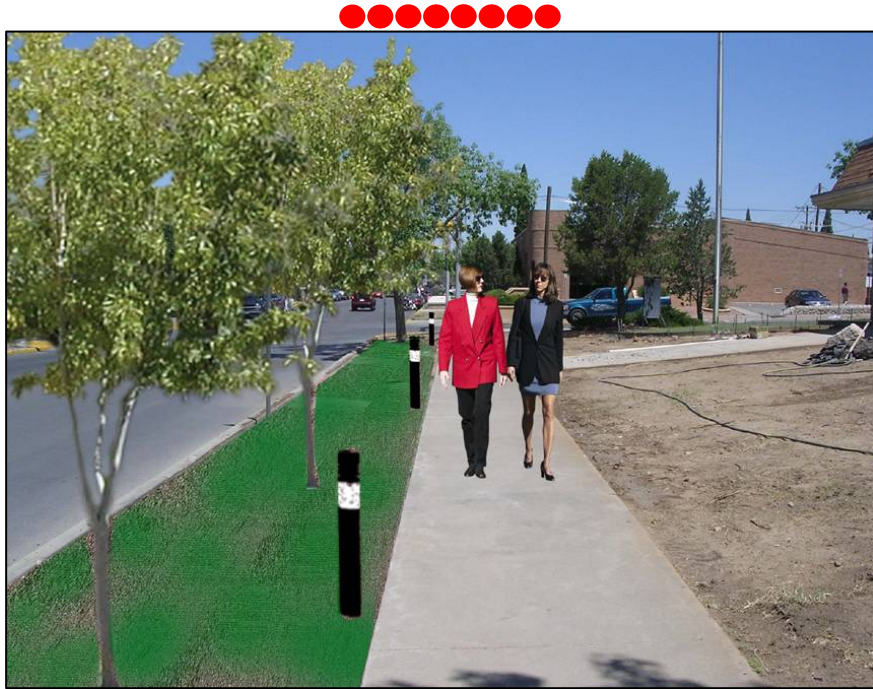


Figure 6.4 – Concept 4 for Navigation

The concept in *Figure 6.4* was not well-received. One committee member commented that it looked too “Uptown” (apparently in reference to the lighted bollards) and, as such, did not look like it would “fit” in the East End. Committee members gave it 8 red dots.

Other photos and renderings for Navigation Boulevard were presented and ranked; however, specific discussions about them did not occur, as presented below.



Navigation - Received 3 Red Dots



Navigation - Received 3 Red Dots



Navigation - Received 2 Green Dots



Navigation - Received 4 Green Dots

CANAL STREET



Figure 6.5 - Concept 1 for Canal

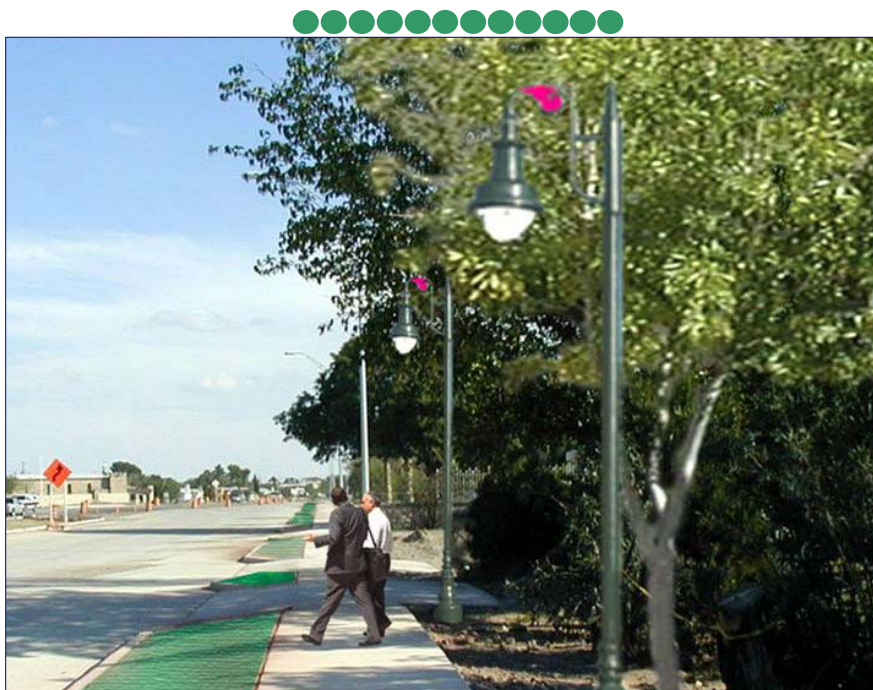


Figure 6.6 - Concept 2 for Canal

In the concepts in *Figures 6.5 and 6.6*, committee members appreciated the wide sidewalks, pedestrian-oriented lighting, trees, and planting strip. *Figure 6.5* received 8 green dots and 1 red dot, while *Figure 6.6* received 12 green dots.

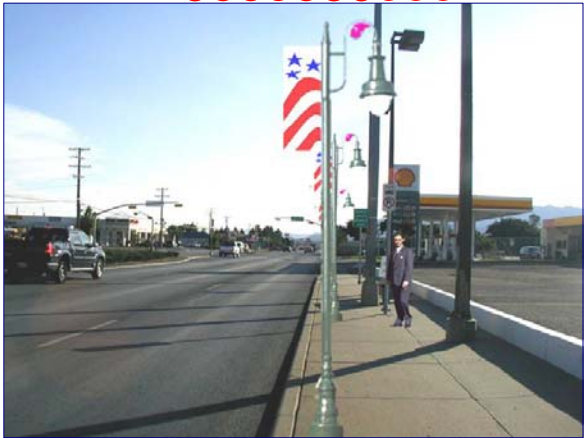
Other photos and renderings for Canal were presented and ranked; however, specific discussions about them did not occur, as presented below.



Canal – Received 2 Green Dots



Canal – Received 10 Red Dots, 1 Green Dot



Canal – Received 10 Red Dots

SAMPSON/YORK STREETS



Figure 6.7 – Concept 1 for Sampson/York (Clark Condon design in Austin, Texas)

Regarding the concept in *Figure 6.7*, committee members liked the wide sidewalks, planting strip, and, particularly, the wide, well-marked crosswalks. The rendering received 12 green dots.

Other photos and renderings for Sampson/York were presented and ranked; however, specific discussions about them did not occur, as presented below.



Sampson/York – Received 10 Green Dots



*Sampson/York – Received 11 Red Dots,
2 Green Dots*



Sampson/York – Received 9 Red Dots

Design Guidelines

After examining all of the advisory committee member and public comments, a set of design guidelines emerged that can serve to direct the choice of streetscape treatments for the East End. Clear, expressed priorities included the following:

- Landscaping that is low maintenance
- Inviting gathering places
- Wide sidewalks
- Brick pavers
- Pedestrian-oriented lighting
- Benches, other street furniture (e.g., clock)
- Greenery (e.g., planting strips, trees)
- Sidewalk bulb-outs
- Appropriateness to East End
- Sense of community

Having received feedback in this meeting from the Advisory Committee, and the larger community via the public meetings, a design program can be created that is in keeping with the preferences of the East End residents, as discussed in Chapter 6. Other considerations, including maintenance and placement of trees, are discussed next.

- **Maintenance.** Maintenance of each enhanced corridor will be the key to its sustained beauty and resilience. In particular, trees and vegetation must be maintained. The community has voiced considerable interest in implementing measures that require low maintenance. Therefore, it is important to consider the following factors.
 - Trees recommended for the corridors should require little maintenance.
 - It must be noted that all landscape will require irrigation.
 - A maintenance agreement is in place between the Greater East End Management District and the City of Houston that defines the roles and responsibilities of each in maintaining the streetscape and the landscape treatments recommended in the plan.
 - An *Adopt-A-Block* initiative could serve to preserve each corridor's appearance and generate lasting community pride and participation in keeping the corridors well maintained.
- **Placement of Trees in Corridors.** The use of different species of trees in each corridor should be considered to match their surroundings. The trees along the residential streets, York and Sampson, should reflect those that might be found in a neighborhood. The trees in the mixed-use/commercial corridors, Navigation, Canal, and Jensen, should be selected to minimize impacts on identifying businesses and to be placed in areas both under utility wires and in areas with no overhead wires. Adding trees in areas with overhead wires, utility poles, and other detracting objects would make these items less

noticeable. The addition of trees will beautify the corridors, calm traffic, and promote the corridors as pedestrian-friendly environments. This pedestrian-friendly design approach is defined in ITE's *Context Sensitive Design* literature (*also see Chapter 10*).

- **Lighting.** The use of solar lighting is recommended with spacing no closer than 20 feet and no farther apart than 40 feet, averaging 30 feet on center. Solar lighting will reduce costs for power and maintenance charges by Center Point Energy. The design of the selected fixtures should match the characteristics of the corridors in which they will be placed.
- **Wayfinding Signage.** A successful wayfinding design serves several purposes. It includes enhanced safety by identifying upcoming major streets in advance of the intersection, therefore, allowing extra time for changing lanes and being warned that you may need to stop ahead. This is particularly important at the intersection of Navigation and Jensen. Police interviews revealed the need for a major traffic study to improve pedestrian and vehicle safety at this intersection. A successful wayfinding design can incorporate design elements that call attention to the districts or adjacent neighborhoods that abut the corridors. It can be used to highlight and inform observers of significant historical/cultural sites within a particular district. A good wayfinding design can draw energy from important places close to the corridors. Pointing out major institutions, for example, makes them easier to find and engenders pride in the residents, business owners, and customers that regularly use the corridor.

Recommended Livable Centers Treatments, Costs, and Revised Scores

The recommended Livable Centers treatments for each block face are those that will bring the score from its current result, based on existing conditions, to an improved score of zero across all inventoried items. To accomplish this, the inventoried items are reformatted into a form useful for itemized construction cost estimating (*Table 6.2*). The construction costs associated with improving each item that needed treatment to raise it from its existing condition (score) to its recommended condition (score) are then computed. *Table 6.2* presents this process as it moves from the existing condition score to the amount of construction needed (either the number of square feet for sidewalk or cost per tree) multiplied by the unit construction cost to the revised score that will exist after construction. *Table 6.2* uses the north side of Canal between St. Charles and Live Oak (used as a previous example).

Table 6.2 – Example Recommended Livable Centers Treatments, Cost, and Revised Score						
Canal	Score	Qty.	Unit	Unit Cost	Cost	Revised Score
Canal, north side of street, between St. Charles and Live Oak						
Land Use	Commercial					
Sidewalks (width)	2					0
Demolition		2,304	SF	\$5	\$11,520	
Installation		2,304	SF	\$12	\$27,648	
Driveways (depth)	1					0
Demolition		0	SF	\$3	\$0	
Installation		0	SF	\$9	\$0	
Curbs	1					0
Demolition		264	LF	\$4	\$1,056	
Installation		264	LF	\$14	\$3,696	
Ramps	2					0
Demolition		2	EA	\$100	\$200	
Installation		2	EA	\$1,500	\$3,000	
Striping	1		Budget	\$3,000	\$3,000	
Lighting (spacing)	2	8	EA	\$3,000	\$24,000	0
Landscaping	2					0
Trees (spacing)		8	EA	\$400	\$3,200	
Curb-to-sidewalk treatment		0	SF	\$9	\$0	
Irrigation/Tree		8	EA	\$100	\$800	
Street Amenities	2					0
Seating		1	EA	\$2,000	\$2,000	
Bike Racks		1	EA	\$1,000	\$1,000	
Waste Receptacles		1	EA	\$1,500	\$1,500	
Bus Shelters			EA	\$6,000	\$0.00	
Total	13				\$82,620	0

The same process was applied to each block face along each corridor inventoried in the project area. The resulting analysis is presented in *Appendix E*. The following tables present a summary of the existing score, construction costs, and revised scores for each block face analyzed.

Navigation North Side	<i>Existing Score</i>	<i>Cost</i>	<i>Revised Score</i>
St. Charles to Live Oak	11	\$50,248	0
Live Oak to Nagle	11	\$61,730	0
Nagle to Delano	12	\$59,529	0
Delano to Paige	11	\$47,140	0
Paige to Ennis	10	\$69,630	0
Ennis to Palmer	13	\$55,706	0
Palmer to Nolan @ RR tracks	12	\$84,500	0
RR Tracks to Sampson	13	\$140,396	0
Sampson to York plus 500 feet	13	\$141,757	0
<i>Total</i>		\$710,636	

Navigation South Side	<i>Existing Score</i>	<i>Cost</i>	<i>Revised Score</i>
St. Charles to Live Oak	11	\$69,208	0
Live Oak to Nagle	11	\$71,550	0
Nagle to Delano	13	\$56,739	0
Delano to Paige	12	\$67,793	0
Paige to Ennis	13	\$69,732	0
Ennis to Palmer	11	\$54,590	0
Palmer to Nolan @ RR tracks	10	\$104,656	0
RR Tracks to Sampson	12	\$161,811	0
Sampson to York plus 500 feet	12	\$152,617	0
<i>Total</i>		\$808,696	

Canal North Side	<i>Existing Score</i>	<i>Cost</i>	<i>Revised Score</i>
Navigation to McAlpine	10	\$134,120	0
McAlpine to N. St. Charles	10	\$74,542	0
N. St. Charles to N. Live Oak	13	\$82,620	0
N. Live Oak to N. Delano	9	\$118,704	2
Delano to Ennis	11	\$166,950	0
Ennis to Palmer	11	\$60,660	2
Palmer to RR	12	\$103,616	2
RR to Nolan	12	\$59,628	4
Nolan to Sampson	13	\$51,762	0
Sampson to York	12	\$67,980	2
York plus 500 feet	12	\$103,300	2
<i>Total</i>		\$1,023,882	

Canal South Side	Existing Score	Cost	Revised Score
Navigation to McAlpine	10	\$142,020	0
McAlpine to N. St. Charles	10	\$66,678	0
N. St. Charles to N. Live Oak	11	\$78,652	0
N. Live Oak to N. Delano	10	\$135,224	2
Delano to Ennis	13	\$101,788	4
Ennis to Palmer	11	\$68,992	0
Palmer to RR	11	\$58,540	2
RR to Nolan	12	\$54,628	4
Nolan to Sampson	13	\$43,862	0
Sampson to York	12	\$75,700	0
York plus 500 feet	12	\$131,400	0
Total		\$957,484	

Sampson East Side	Existing Score	Cost	Revised Score
Navigation to Engelke	14	\$97,448	0
Engelke to Runnels	11	\$66,215	2
Runnels to Saltus	13	\$80,131	2
Saltus to Canal	12	\$75,301	2
Canal to McAshan	14	\$69,425	2
McAshan to Commerce	14	\$95,488	2
Commerce to Sherman	13	\$91,471	2
Sherman to Garrow	14	\$92,821	2
Garrow to Preston	14	\$97,515	2
Preston to Harrisburg	13	\$91,920	2
Total		\$857,735	

Sampson West Side	Existing Score	Cost	Revised Score
Navigation to Engelke	14	\$92,851	0
Engelke to Runnels	10	\$53,768	2
Runnels to Saltus	13	\$75,325	2
Saltus - Canal	12	\$72,370	2
Canal - McAshan	13	\$60,760	2
McAshan - Commerce	14	\$93,075	2
Commerce - Sherman	12	\$84,796	2
Sherman - Garrow	13	\$90,348	2
Garrow - Preston	14	\$92,395	2
Preston - Harrisburg	13	\$84,900	2
Total		\$800,588	

York East Side	<i>Existing Score</i>	<i>Cost</i>	<i>Revised Score</i>
EAST of Harrisburg to Preston	13	\$87,405	2
Preston to Garrow	13	\$88,990	2
Garrow to Sherman	13	\$92,275	2
Commerce to McAshan	13	\$87,345	2
Canal to Saltus	13	\$76,425	2
Saltus to Runnels	13	\$77,310	2
Runnels to Engelke	14	\$69,573	2
Engelke to Navigation	13	\$97,833	2
Navigation to Hutcheson	11	\$132,200	0
Hutcheson to Freund	11	\$108,375	0
Freund to Ball	13	\$72,408	2
Ball to RR	13	\$69,450	0
RR to Lemke (@ Tony Marron Park)	11	\$78,630	0
<i>Total</i>		\$1,234,741	

York West Side	<i>Existing Score</i>	<i>Cost</i>	<i>Revised Score</i>
EAST of Harrisburg to Preston	13	\$85,510	2
Preston to Garrow	13	\$72,340	2
Garrow to Sherman	13	\$89,195	2
Sherman to Commerce	13	\$92,311	2
Commerce to McAshan	13	\$87,345	2
Canal to Saltus	13	\$73,765	2
Saltus to Runnels	12	\$74,860	2
Runnels to Engelke	13	\$71,500	2
Engelke to Navigation	13	\$96,272	2
Navigation to Hutcheson	13	\$123,050	0
Hutcheson to Freund	13	\$106,145	0
Freund to Ball	12	\$69,509	0
Ball to RR	12	\$70,440	0
RR to Lemke (@ Tony Marron Park)	11	\$69,270	0
<i>Total</i>		\$1,181,512	

Side Streets Serving Transit											
	Block Length	Existing Score	Existing PLOS	Cost/LF	Total cost	Revised PLOS	Existing Score	Existing PLOS	Cost/LF	Total cost	Revised PLOS
		East Side					West Side				
Canal											
Franklin-Comm to Canal	500	6	C	n/a	n/a	C	10	E	200	\$100,000	C
Navig - Canal to Jensen	500	12	E	\$200	\$100,000	C	8	D	150	\$75,000	C
St Charles-Canal to Comm.	500	8	D	\$150	\$75,000	C	11	E	200	\$100,000	C
St. Charles-Canal to Navig.	425	13	F	\$250	\$106,250	C	13	F	250	\$106,250	C
Delano-Canal to Comm.	500	12	E	\$200	\$100,000	C	9	D	150	\$75,000	C
Delano-Canal to Navig.	450	12	E	\$200	\$90,000	C	12	E	200	\$90,000	C
Paige- Canal to Navig.	450	7	D	\$150	\$67,500	C	8	D	150	\$67,500	C
Palmer-Canal to Comm.	520	6	C			C	8	D	150	\$78,000	C
Palmer-Canal to Navig.	450	13	F	\$250	\$112,500	C	13	F	250	\$112,500	C
Navigation		East					West				
St. Chas.-Navig. to Engelke	220	6	C	n/a	n/a	C	14	F	250	\$55,000	C
Live Oak - Navig to Engelke	220	14	F	\$250	\$55,000	C	14	F	250	\$55,000	C
Delano-Navig to Engelke	220	16	F	\$250	\$55,000	C	10	E	200	\$44,000	C
Ennis -Navig. to Engelke	220	14	F	\$250	\$55,000	C	14	F	250	\$55,000	C
Palmer-Navig to Engelke	220	6	C			C	8	D	150	\$33,000	C
Nagle - Navig. to Bering	460	14	F	\$250	\$115,000	C	14	F	250	\$115,000	C
Engelke		North					South				
Ann -Jensen to St. Chas.	440	16	F	\$250	\$110,000	C	16	F	250	\$110,000	C
Engelke-St. Chas to Delano	800	16	F	\$250	\$200,000	C	16	F	250	\$200,000	C
Engelke-Delano to Paige	600	16	F	\$250	\$150,000	C	16	F	250	\$150,000	C
Engelke-Paige to Palmer	250	16	F	\$250	\$62,500	C	16	F	250	\$62,500	C
Engelke-Palmer to Navig.	400	16	F	\$250	\$100,000	C	16	F	250	\$100,000	C
Clinton		East					West				
Meadow- Clinton to Baron	430	5	C	n/a	n/a	C	5	C	n/a	n/a	C
Bayou- Clinton to Baron	430	6	C	n/a	n/a	C	6	C	n/a	n/a	C
Gregg- Baron to Cline	200	14	F	\$250	\$50,000	C	6	C	n/a	n/a	C
Gregg - Cline to Clinton	430	4	C	n/a	n/a	C	4	C	n/a	n/a	C
Bringham- Clinton to Baron	430	14	F	\$250	\$107,500	C	14	F	250	\$107,500	C
Bringham- Baron to Cline	200	14	F	\$250	\$50,000	C	14	F	250	\$50,000	C
Bringham- Clinton to Dead End	200	14	F	\$250	\$50,000	C	14	F	250	\$50,000	C
Hirsch- Clinton to Cline	450	11	E	\$200	\$90,000	C	11	E	200	\$90,000	C
Hirsch- Clinton to Dunn	500	12	E	\$200	\$100,000	C	12	E	200	\$100,000	C
York/Sampson		North					South				
Sherman - York to Sampson	290	16	F	\$250	\$72,500	C	16	F	250	\$72,500	C
Garrow - Sampson to York	290	14	F	\$250	\$72,500	C	14	F	250	\$72,500	C
Preston - York to Sampson	290	14	F	\$250	\$72,500	C	14	F	250	\$72,500	C
Total	12,485				\$2,218,750					\$2,398,750	

Cost Summary

Table 6.2 presents the cost summary for the Livable Centers pedestrian/transit access improvements for the streets analyzed above. Further discussion is provided in Chapter 11.

Table 6.3 – Livable Centers Pedestrian/Transit Access Improvements Cost Summary		
Corridor/Area	Base Cost	Total Cost*
Navigation	\$1,519,332	\$1,975,132
Canal	\$1,981,366	\$2,575,776
Sampson	\$1,658,323	\$2,182,338
York	\$2,416,253	\$3,141,129
Side Streets	\$4,617,500	\$6,002,750
Other Treatments	\$800,000	\$1,040,000
Total	\$12,992,774	\$16,917,125
* Includes contingencies, standard soft costs, and fees.		

Conclusion

The results of the existing conditions inventory indicate that the pedestrian infrastructure is generally in poor condition and in some cases impassable. Americans with Disabilities Act (ADA) requirements are unmet, disability access is denied on Clinton and portions of Navigation, Sampson, and York. A direct result of the deteriorated conditions of the sidewalks and an absence of pedestrian-oriented lighting, landscaping, and other pedestrian amenities transfers a direct negative impact on walkability and transit access as discussed in the introduction to this chapter. The design examples selected by the Advisory Committee and the public will address these inadequacies revealed in the inventory. In addition, design guidelines will address general design issues associated with tree types, lighting selection, and other elements. Combined, these will give direction to and provide a basis for the design phase. The costs associated with each block face and by corridor will provide a budget upon which the designs can be intelligently based and supported. The benefits of increased ridership and the related reduced VMT, cold starts, and emissions will be based on the before and after conditions presented in this plan as measured by the score assigned each block face.

Chapter 7 - Mixed-Use Revitalization **7**

The project area, located immediately adjacent to downtown, has led to great interest in its redevelopment, much of which already has begun. New townhouse development has been constructed on Navigation, Clinton, Commerce, Canal, and at dispersed locations throughout the area. Most of the vacant property is currently in the hands of developers who are waiting for the appropriate moment to develop. In addition to the proximity to a growing and prosperous downtown, METRO has begun construction on the Harrisburg LRT line on Harrisburg, linking downtown with the Magnolia Street Transit Center located to the east of the project area.

There are no land use controls in Houston; therefore, future uses of vacant and underutilized property within the project area will be decided by the private sector. To the extent possible, the future land development pattern will be influenced by GEEMD, East End Chamber of Commerce, East End Super Neighborhood Group, Houston City Department of Planning and other related agencies and institutions. All of these organizations have been a part of the planning process. The results of the planning process are presented in this plan. Investments to the public infrastructure recommended in this plan will enhance the focus of and resulting pace of the future revitalization of this portion of the East End. Development of a future infill/mixed-use development program requires the following three steps.

- ***Amount of Vacant Property.*** Estimate the amount of property available for infill/mixed-use development. In this case the amount of vacant property located along the corridors in which public infrastructure improvements will take place.
- ***Mix of Uses.*** Define the ideal mix of uses that will best meet current market conditions, while promoting and facilitating pedestrian and transit utilization. This will incorporate data and recommended practices of the ITE, *Trip Generation*, 7th Edition.
- ***Amount of Development.*** Evaluate the building footprint upon which development can take place on the identified vacant property allowing open space, pedestrian access, on-site parking and trash removal (as required). Design recommendations are for building locations abutting the property line on the corridors that receive pedestrian improvements with parking and other required ground floor uses provided in the rear. This is compatible with the guidelines presented in Chapter 10. Estimate the building heights appropriate for each corridor.

Harris County Appraisal District records of properties abutting the corridors selected for improvements were used as a guide to establish the amount of vacant property located on each.

Amount of Vacant Property

The following tables present the location and amount of non-exempt vacant property located along the improvement corridors based on Harris County Appraisal District records.

Navigation Non-Exempt Vacant Properties Between US 59 and York					
Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
2402 NAVIGATION BLVD	77003	0	Pending	Pending	5,300
2240 NAVIGATION BLVD	77003	0	\$418,668	\$418,668	34,889
2929 NAVIGATION BLVD	77003	0	\$401,544	\$401,544	33,462
2707 NAVIGATION BLVD	77003	0	\$252,000	\$252,000	21,000
3407 NAVIGATION BLVD	77003	0	\$190,272	\$190,272	15,856
2432 NAVIGATION BLVD	77003	0	\$161,112	\$161,112	13,426
2501 NAVIGATION BLVD	77003	0	\$129,544	\$129,544	10,200
2600 NAVIGATION BLVD	77003	0	\$123,600	\$123,600	10,300
2332 NAVIGATION BLVD	77003	0	\$115,000	\$115,000	11,905
2929 NAVIGATION BLVD	77003	0	\$95,760	\$95,760	7,980
2606 NAVIGATION BLVD	77003	0	\$62,856	\$62,856	5,238
2412 NAVIGATION BLVD	77003	0	\$47,844	\$47,844	3,987
2302 NAVIGATION BLVD	77003	0	\$26,520	\$26,520	2,210
2412 NAVIGATION BLVD	77003	0	\$17,052	\$17,052	1,421
				\$2,041,772	177,174

Canal Non-Exempt Vacant Property Between Navigation and York					
Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
2311 CANAL ST	77003	0	Pending	Pending	12,072
2311 CANAL ST	77003	0	Pending	Pending	21,270
2311 CANAL ST	77003	0	Pending	Pending	43,939
2111 CANAL ST	77003	0	\$2,241,680	\$2,241,680	112,084
2600 CANAL ST	77003	0	\$592,800	\$592,800	59,280
2005 CANAL ST	77003	0	\$553,228	\$553,228	42,556
2005 CANAL ST	77003	0	\$489,600	\$489,600	24,480
2714 CANAL ST	77003	0	\$379,620	\$379,620	31,635
2005 CANAL ST	77003	0	\$182,400	\$182,400	9,120
3311 CANAL ST	77003	0	\$177,912	\$177,912	14,826
3326 CANAL ST	77003	0	\$145,600	\$145,600	13,000
3402 CANAL ST	77003	0	\$132,000	\$132,000	10,000
2727 CANAL ST	77003	0	\$124,721	\$124,721	10,192
2302 CANAL ST	77003	0	\$119,952	\$119,952	9,996
2314 CANAL ST	77003	0	\$98,400	\$98,400	8,200
3328 CANAL ST	77003	0	\$85,800	\$85,800	6,500
2515 CANAL ST	77003	0	\$66,000	\$66,000	5,500
2308 CANAL ST	77003	0	\$60,000	\$60,000	5,000
2324 CANAL ST	77003	0	\$60,000	\$60,000	5,000
2318 CANAL ST	77003	0	\$58,800	\$58,800	4,900
2615 CANAL ST	77003	0	\$38,500	\$38,500	5,000
2318 CANAL ST	77003	0	\$37,560	\$37,560	3,130
				\$5,644,573	457,680

N Sampson Non-Exempt Vacant Property between Navigation and Harrisburg					
Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
0 N SAMPSON	77003	0	Pending	Pending	5,600
320 N SAMPSON	77003	0	\$132,480	\$132,480	11,040
320 N SAMPSON ST	77003	0	\$96,120	\$96,120	8,010
304 N SAMPSON	77003	0	\$93,744	\$93,744	7,812
102 N SAMPSON ST	77003	0	\$60,000	\$60,000	5,000
0 N SAMPSON	77003	0	\$55,690	\$55,690	9,465
0 N SAMPSON ST	77003	0	\$46,915	\$46,915	3,712
0 N SAMPSON ST	77003	0	\$46,368	\$46,368	3,712
6 N SAMPSON ST	77003	0	\$41,869	\$41,869	5,875
0 N SAMPSON	77003	0	\$38,500	\$38,500	5,000
320 N SAMPSON ST	77003	0	\$34,716	\$34,716	2,893
320 N SAMPSON ST	77003	0	\$14,485	\$14,485	1,126
				\$660,887	69,245

S Sampson Non-Exempt Vacant Property Between Harrisburg and Navigatio					
Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
0 SAMPSON ST	77003	0	\$371,692	\$371,692	29,885
100 SAMPSON ST	77003	0	\$278,688	\$278,688	23,224
0 SAMPSON	77003	0	\$150,000	\$150,000	10,000
0 SAMPSON	77003	0	\$100,000	\$100,000	5,000
0 SAMPSON	77003	0	\$68,400	\$68,400	10,200
0 SAMPSON ST	77003	0	\$44,100	\$44,100	3,150
0 SAMPSON ST	77003	0	\$41,520	\$41,520	3,460
0 SAMPSON ST	77003	0	\$40,980	\$40,980	3,415
0 SAMPSON ST	77004	0	\$40,000	\$40,000	5,000
114 SAMPSON ST	77003	0	\$38,500	\$38,500	5,000
0 SAMPSON ST	77004	0	\$37,125	\$37,125	
0 SAMPSON ST	77004	0	\$17,325	\$17,325	1,980
0 SAMPSON ST	77004	0	\$17,325	\$17,325	1,980
0 SAMPSON ST	77004	0	\$17,325	\$17,325	1,980
0 SAMPSON ST	77003	0	\$472	\$472	420
				\$1,263,452	104,694

N York Non-Exempt Vacant Property Between Harrisburg and Navigation

Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
0 N YORK ST	77003	0	Pending	Pending	14,100
0 N YORK ST	77003	0	Pending	Pending	14,100
312 N YORK ST	77003	0	\$140,625	\$140,625	18,750
312 N YORK ST	77003	0	\$112,500	\$112,500	15,000
132 N YORK ST	77003	0	\$112,000	\$112,000	11,200
0 N YORK ST	77003	0	\$66,240	\$66,240	5,520
0 N YORK	77003	0	\$48,799	\$48,799	7,675
312 N YORK ST	77003	0	\$47,000	\$47,000	4,700
312 N YORK ST	77003	0	\$47,000	\$47,000	4,700
0 N YORK ST	77003	0	\$43,312	\$43,312	6,250
138 N YORK ST	77003	0	\$40,810	\$40,810	5,600
20 N YORK ST	77003	0	\$38,500	\$38,500	5,000
19 N YORK ST	77003	0	\$36,458	\$36,458	3,881
204 N YORK ST	77003	0	\$35,655	\$35,655	3,675
0 N YORK	77003	0	\$35,035	\$35,035	3,500
0 N YORK ST	77003	0	\$32,537	\$32,537	3,040
0 N YORK	77003	0	\$5,084	\$5,084	16,945
				\$841,555	143,636

S York Non-Exempt Vacant Property Between Harrisburg and Navigation

Address	Zip	Imp Size	Appraised Val	Market Val	Land Size(SF)
407 YORK ST	77003	0	Pending	Pending	2,500
500 YORK ST	77003	0	Pending	Pending	26,167
0 YORK ST	77003	0	\$376,000	\$376,000	25,000
315 YORK ST	77587	0	\$80,600	\$80,600	14,200
109 YORK ST	77003	0	\$50,000	\$50,000	5,000
111 YORK ST	77003	0	\$50,000	\$50,000	5,000
0 YORK ST	77003	0	\$38,500	\$38,500	5,000
231 YORK ST	77003	0	\$38,500	\$38,500	5,000
102 YORK ST	77587	0	\$16,839	\$25,968	9,230
113 YORK ST	77587	0	\$22,507	\$22,507	7,100
204 YORK ST	77587	0	\$22,507	\$22,507	7,100
206 YORK ST	77587	0	\$22,507	\$22,507	7,100
218 YORK ST	77587	0	\$22,507	\$22,507	7,100
0 YORK ST	77396	0	\$21,553	\$21,553	15,500
315 YORK ST	77587	0	\$21,412	\$21,412	4,500
0 YORK ST	77003	0	\$1,878	\$1,878	313
				\$794,439	145,810

Jensen Non-Exempt Vacant Property RR Underpass to Bayou Bridge

Address	Improvements	Size (sq. ft.)
400 Jensen	0	145,577
301 Jensen	0	69,334
0 Jensen	0	62,726
2240 Navigation	0	34,889
2332 Navigation	0	11,905
2302 Canal		2,210
Total		326,641
Based on an analysis of property estimated to receive an economic benefit from the improvement without street realignments recommended in Chapter 8.		

Table 7.1 presents a summary of the vacant property located along the corridors that will receive public infrastructure improvements as recommended in this plan.

Table 7.1 – Vacant Property	
Corridor	Sq. Ft.
Navigation	177,174
Canal	457,680
York	289,446
Sampson	173,939
Jensen	326,641
Total	1,424,880

Mix of Land Uses

Table 7.2 presents the mix of land uses recommended for each corridor recognizing their exiting distribution of uses, their future role within the market place over the next 20 years and the desire to promote pedestrian and transit utilization. This table presents the distribution of the amount of vacant land between the five land uses addressed.

Table 7.2 – Recommended Mix of Land Uses							
Corridor	Vacant Property (Sq. Ft.)	Retail	Office	Services	Light Industry	Housing	
Navigation	177,174	40%	20%	10%	10%	20%	100%
		70,870	35,435	35,435	8,859	26,576	
Canal	457,680	15%	15%	10%	40%	20%	100%
		68,652	45,768	45,768	228,840	68,652	
York	289,446	10%	10%	10%	10%	60%	100%
		28,945	28,945	28,945	28,945	173,668	
Sampson	173,939	10%	10%	10%	10%	60%	100%
		17,394	17,394	17,394	17,394	104,363	
Jensen	326,641	40%	20%	10%	10%	20%	100%
		97,992	65,328	65,328	32,664	65,328	
Total	1,424,880	283,853	192,870	192,870	316,702	438,587	
Site Coverage		50%	50%	50%	50%	50%	
Building Floors		1	4	4	1	4	

Amount of Development

Table 7.3 presents the total building square footage that would be developed on the vacant property presented in Table 7.2 for each type of land use along each corridor.

Table 7.3 – Mixed-Use Development Program at 20-Year Buildout					
Corridor	Retail (sq. ft.)	Office (sq. ft.)	Services (sq. ft.)	Light Industry (sq. ft.)	Housing (units*)
Navigation	35,435	70,870	70,870	4,429	43
Canal	34,326	91,536	91,536	114,420	110
York	14,472	57,889	57,889	14,472	278
Sampson	8,697	34,788	34,788	8,697	167
Jensen	48,996	130,656	130,656	16,332	105
Total	141,926	385,739	385,739	158,350	703
* Assumes 1,500 sq. ft. average.					

The total infill/mixed-use development to be built over the next 20 years is estimated at 1,071,754 square feet, plus 703 units at an average 1,500 square feet each. The amount of mixed-use development presented in Table 7.3 would result in the addition of more than 3,000 jobs in the East End project area. In addition, it would enhance pedestrian and transit utilization with resulting reductions in automobile use, congestion, and emissions. A significant amount of property and sales taxes would be realized from the development. A discussion of these benefits is provided in Chapter 10, Benefits.

Chapter 8 - Design Opportunities/Recommendations **8**

The conceptual design task in the East End Livable Centers effort focused on Guadalupe Park and Plaza and its surroundings and along Navigation between the Guadalupe Park and Plaza area and York Street to the east. The Guadalupe Park and Plaza vision was designed to take place in four phases, presented next, with the first phase beginning as early as 2009. Any changes to the Park will require the support of the City's Parks and Recreation Department and any changes to the area surrounding the Park will require the approval of the City's Department of Public Works and Engineering. Representatives from both City departments have participated in the East End Livable Centers planning process, although no official approval of the conceptual design recommendations presented in this plan has been requested or granted at this writing.

The conceptual designs are presented with the full recognition that they are conceptual visions and, as such, they represent physical concepts that are designed to both direct and inspire the future physical form of the most important urban attributes of the study area, Guadalupe Park and Navigation Boulevard.

The steps leading to the conceptual designs presented in this chapter involved engaging the public and community stakeholders by first gathering their interest and desires and then addressing the physical constraints, in this case the intersection of Jensen Drive and Navigation Boulevard. This was followed by the design of a phased plan for the Park that would provide immediate community use and support and set the stage for longer-term development of the Park, its surroundings, and, ultimately, Navigation Boulevard.

This chapter presents the conceptual designs for Guadalupe Park and surrounding area, including an evaluation of alternative adjustments to the Jensen/Navigation intersection, and conceptual designs and documentation of design precepts for the Navigation corridor and surrounding area, focused on a vision of a new major urban boulevard.

The Parks/Need for Active Uses/Short-Term Design

The first step in the design process for Guadalupe Park was to gather community input focused on Guadalupe Park's strengths and weaknesses. The results were that Guadalupe Park was seldom used by the public because there were no active park uses there. For example, there are no places for children to play; no provisions for a dog walk, and no area for community events. In addition, the homeless use the park on a continuous basis since it is located near community support for the disadvantaged and those in need.

There were several advisory committee meetings and public meetings where concepts and direction were presented and discussed. The overriding feedback from the community participants was that the existing park design was not necessarily a beloved community element and modifications to the park design and structures were desirable.

Initial design discussions with stakeholders and the public focused on building a consensus and a new vision for which program elements might be included in future park redesign. Conceptual imagery of varied active and passive park elements were exhibited and comments were requested. An exercise of placing green and red dots on liked (green dot) and disliked (red dot)

images was held to obtain opinions and direction from the advisory and public meeting groups. Based on the comments received, the design team generated a preliminary site plan incorporating the desired program elements as identified by the stakeholders (*Figure 8.1*).

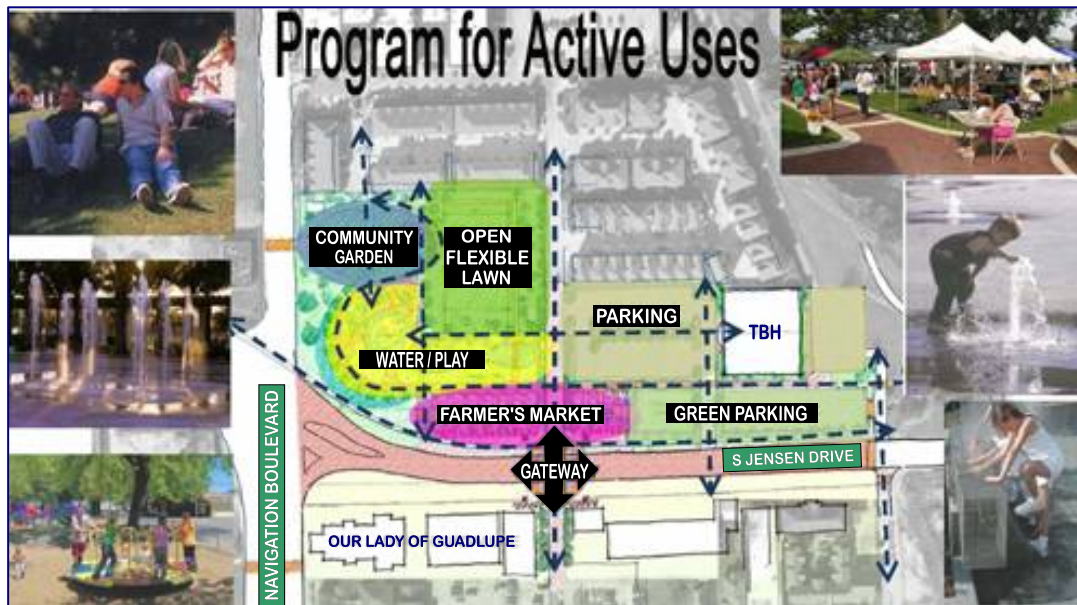


Figure 8.1 – Conceptual Landscape Imagery

The Barrier/Intersection of Navigation and Jensen

In addition to expressing a need for more active park uses, there was universal agreement that access to Guadalupe Park was made difficult by the design and location of the Navigation/Jensen intersection. A conceptual design study was performed to investigate the strengths and weaknesses associated with alternative intersection designs. The existing intersection and two alternatives were investigated and the strengths and weaknesses of each are presented next.



Figure 8.2 – Existing Navigation/Jensen Intersection

Due to the awkward alignment of the existing intersection, the amount of space required to accommodate turns results in long distances between approach lanes, difficulty in merging movements, confusion concerning which lanes go through the intersection from south to north versus those that accommodate a right turn from the southern approach to the eastern direction on Navigation. Police representatives who participated in the crime and traffic accidents interview indicated that this intersection is the most confusing for drivers. Because of the large area needed to accommodate traffic, pedestrian crossing is unsafe. One public comment was the observation that you just cannot get to Guadalupe Park because of this intersection's design and traffic flows.

Traffic Circle Alternative

Traffic circles are designed to provide intersections that function without signals. This approach would improve the flow of automobile and truck traffic by removing the need to stop. It does however increase the number and complexity of merging movements. Representatives from the Department of Public Works and Engineering indicated that the nearest signal to a traffic circle could be located no closer than 300 feet away. The result is that this alternative would smooth the flow of automobile and truck traffic but would eliminate pedestrian access to Guadalupe Park, Our Lady of Guadalupe Church, and other properties located at this intersection.



Figure 8.3 – Traffic Circle Alternative

Double T Alternative

While providing the best pedestrian crossing configuration, combined with the most desirable land planning and urban design impact on adjacent property, the Double T alternative is the most difficult for automobile and truck traffic to negotiate. Property impacts include providing four “corner properties” for development and two “view corridors” offering urban design gateway opportunities. It is not that it is unsafe for automobile traffic, but it requires that traffic negotiate two intersections in moving north or south through the intersection. While problematic for automobile and truck traffic, this alternative also has a major “traffic calming impact” on the excessive speed and negative noise and safety conflicts currently experienced by pedestrians at this intersection. Although no decision has been made to date, the design team, supported by Advisory Committee input, has included this alternative as part of the conceptual design development of Guadalupe Park and Plaza and Navigation Boulevard.

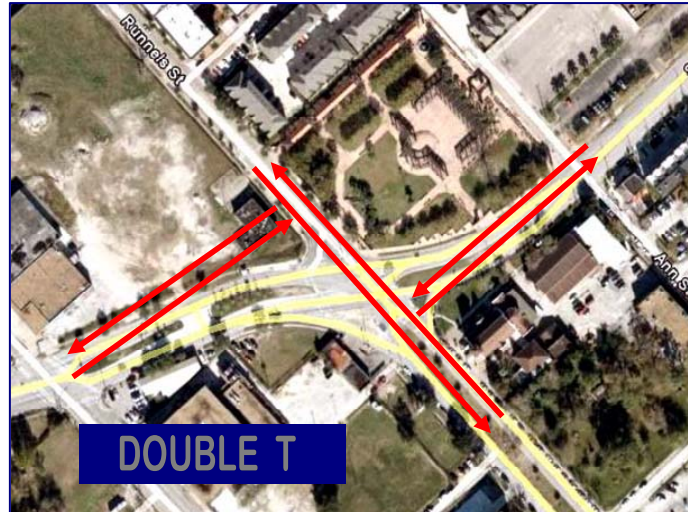


Figure 8.4 - Double T Alternative

Long-Term Guadalupe Park and Surrounding Area Phased Plan

The short-term re-use of Guadalupe Park represents a point of departure for more dramatic design recommendations developed by the design team. A long-term plan to be developed in four phases is presented next. Improvements are described in each phase and figures are presented showing the conceptual design development at each phase.

Conceptual Design Precepts

- Realign street system around the park to allow for creation of a true neighborhood square. This will allow for safer traffic movement, pedestrian experiences, and enhanced development park frontage opportunities.
- Redesign Guadalupe Park to include a home for cultural institutions, such as a cultural center or a new museum. Engage the streets on all sides to activate the park space and pull the neighborhood into the space.
- Envision Guadalupe Park and the surrounding area as a Gateway for the East End through grand design treatments and context-sensitive urban form development.
- Realign street patterns to create a widened center space between the travel lanes of Navigation and improve the pedestrian experience. This will allow for stronger engagement with the development opportunities along the edges, and offer a varied landscape/café public facilities opportunity in the space itself.

- Recognize Guadalupe Park and the surrounding area as one of the East End's most significant gathering places and spaces for leisure, recreation, and community events.
- Bring a unity of urban form and visual relationships between Guadalupe Park, Our Lady of Guadalupe Church and the anticipated new development south of the Jensen/Navigation intersection encouraged by the street realignment and public improvements.

Phase 1

Phase 1 consists of demolition of the existing park and its structures to create open lawn, community garden, water feature, and community market. In addition pedestrian improvements will occur along Navigation and Jensen by redesigning the street texture and creating opportunities for the use of a median on Navigation (*Figure 8.5*).

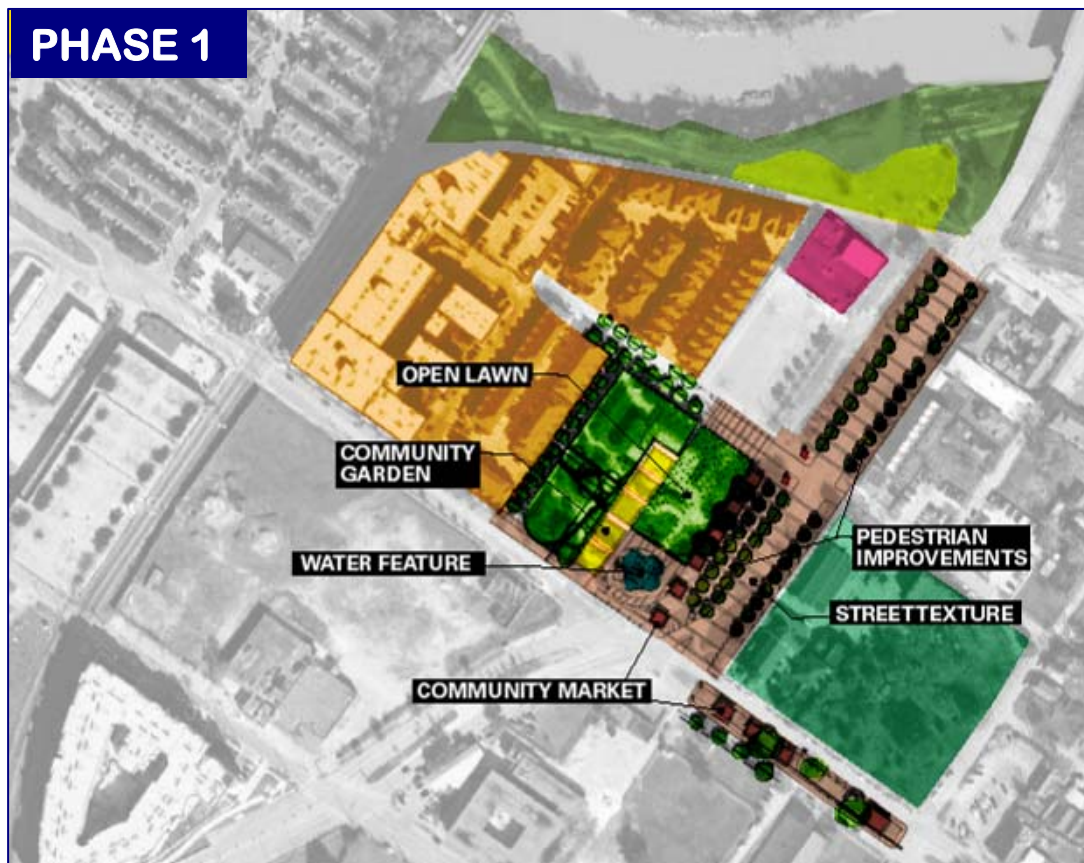


Figure 8.5 – Phase 1 Improvements

Phase 2

Phase 2 consists of a new and improved Navigation/Jensen intersection to create pedestrian accessibility to the park and plaza. A double T intersection gives the right-of-way to pedestrians (with clear, safe, and short/direct crossings) above cars and trucks (*Figure 8.6*).

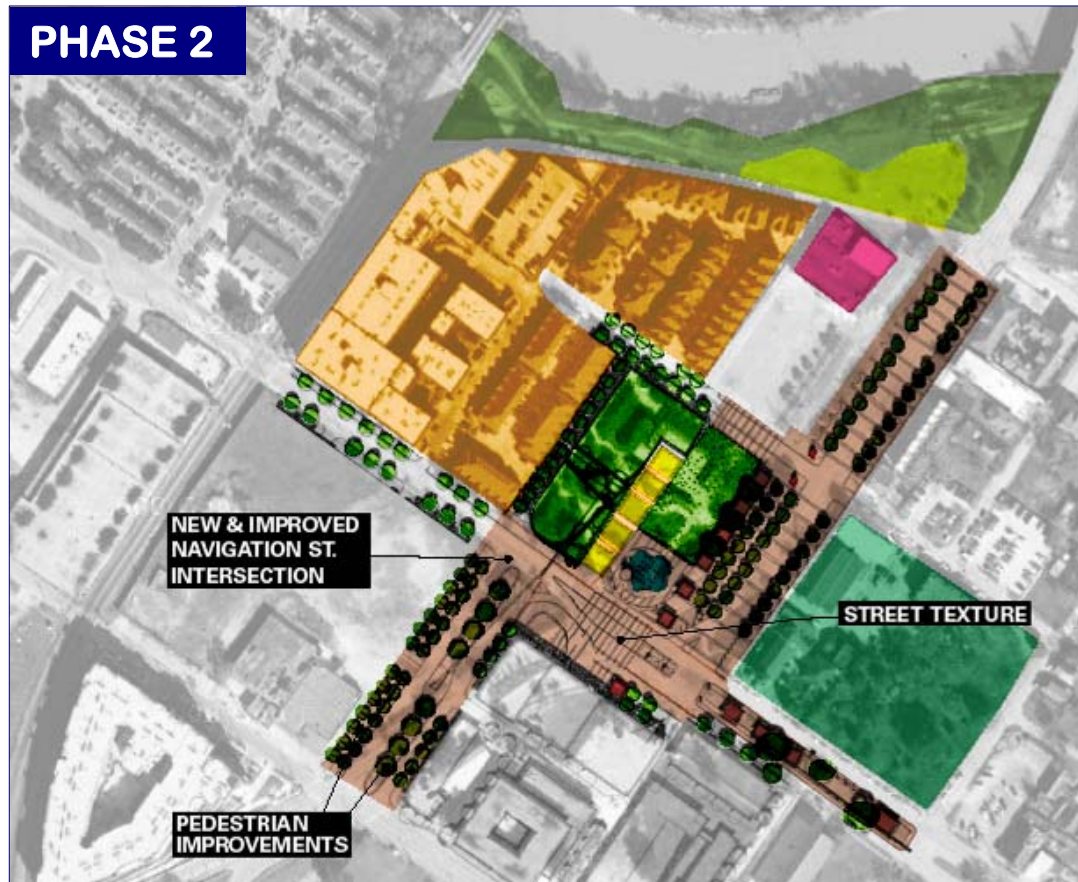


Figure 8.6 – Phase 2 Improvements

Phase 3

Phase 3 consists of demolition of the existing Talento Bilingue Building to be able to connect the park with the Bayou. A new Museum/Visitor Center and new building for Talento Bilingue, including structured parking and/or partially subsurface parking, will be realized along an improved Navigation/Jensen intersection (*Figure 8.7*).



Figure 8.7 – Phase 3 Improvements

Phase 4

Phase 4 consists of the addition of a pedestrian bridge across Navigation (*Figure 8.8*), adding to the bold design improvements and development strategies for Guadalupe Park resulting from the preceding three phases require concurrent momentum and success of other development initiatives around the park. The symbolic bridge between public and private cooperation can literally reach out to the surroundings by the realization of a pedestrian bridge crossing Navigation.

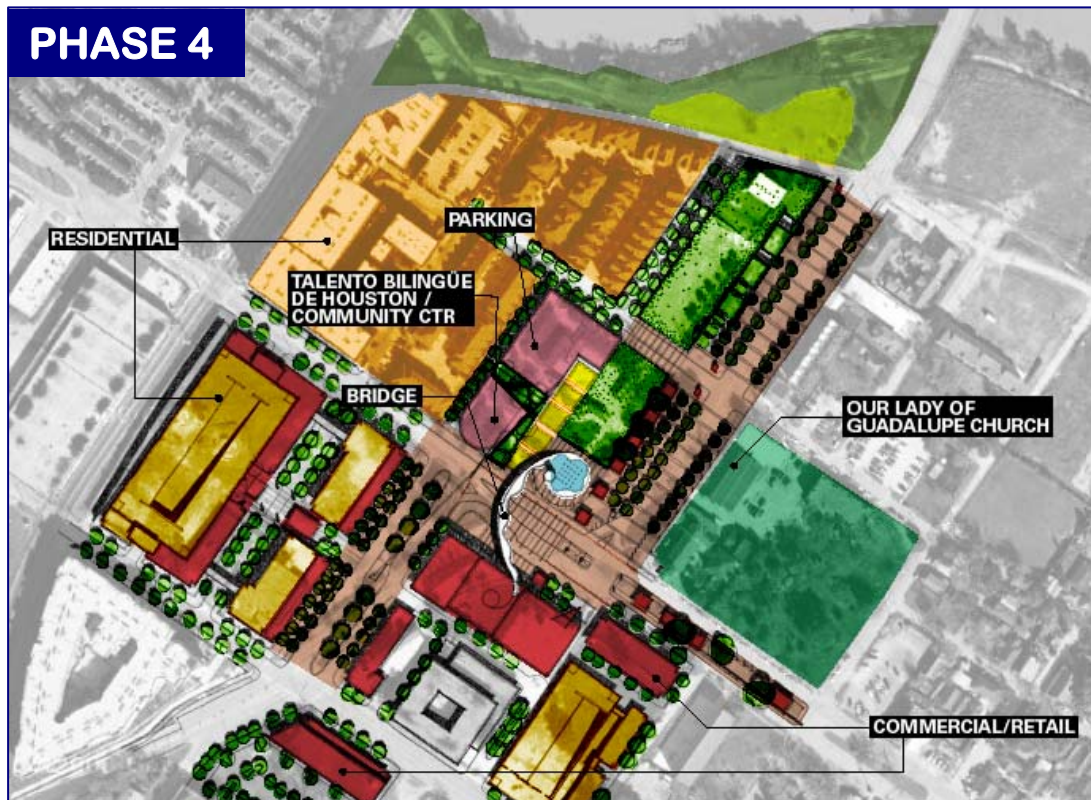


Figure 8.8 – Phase 4 Improvements

Resulting Program

- Museum/Visitor Center
- New building for Talento Bilingue, combined with build parking (partially subsurface)
- Green Lawn, partially elevated for scenic views looking at Downtown Houston and the Bayou
- Exhibits/Markets/Festivals
- Community Garden
- Water Feature
- Boardwalk/Bridge
- Children's Area
- Dog Park

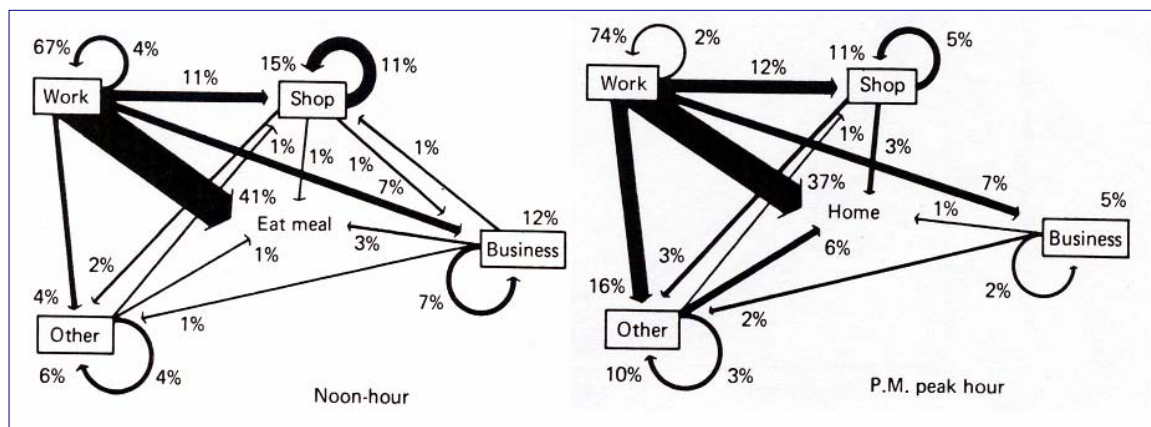
The land planning and urban design advantage of the double T intersection is revealed in the resulting conceptual design presented in *Figure 8.8*.

A series of design charrettes were held with design team members, private landowners, and urban designers to identify larger vision opportunities for this area of East End and to formulate development strategies that would bring improvements to the park and surrounding development in a phased approach. The refined conceptual plan for the Guadalupe Park and Plaza and surrounding area was presented at both advisory and public meetings including concepts for Guadalupe Park and the larger issue of the district gateway.

Conceptual Design for Navigation Boulevard

Conceptual Design Precepts

- Redesign Navigation to create a grand avenue running from gateway place to gateway place. The center median should be activated with new landscape, open areas, art work, and in strategic locations, cafés with dining areas.
- Encourage a mixture of uses (shown in the figure below) designed to maximize interaction between uses within easy (under ¼ mile) walking distances and direct access to adjacent transit services. The percentages presented represent the percentage distribution of originating trips destined for each land use during the noon hour and PM peak hour each weekday.



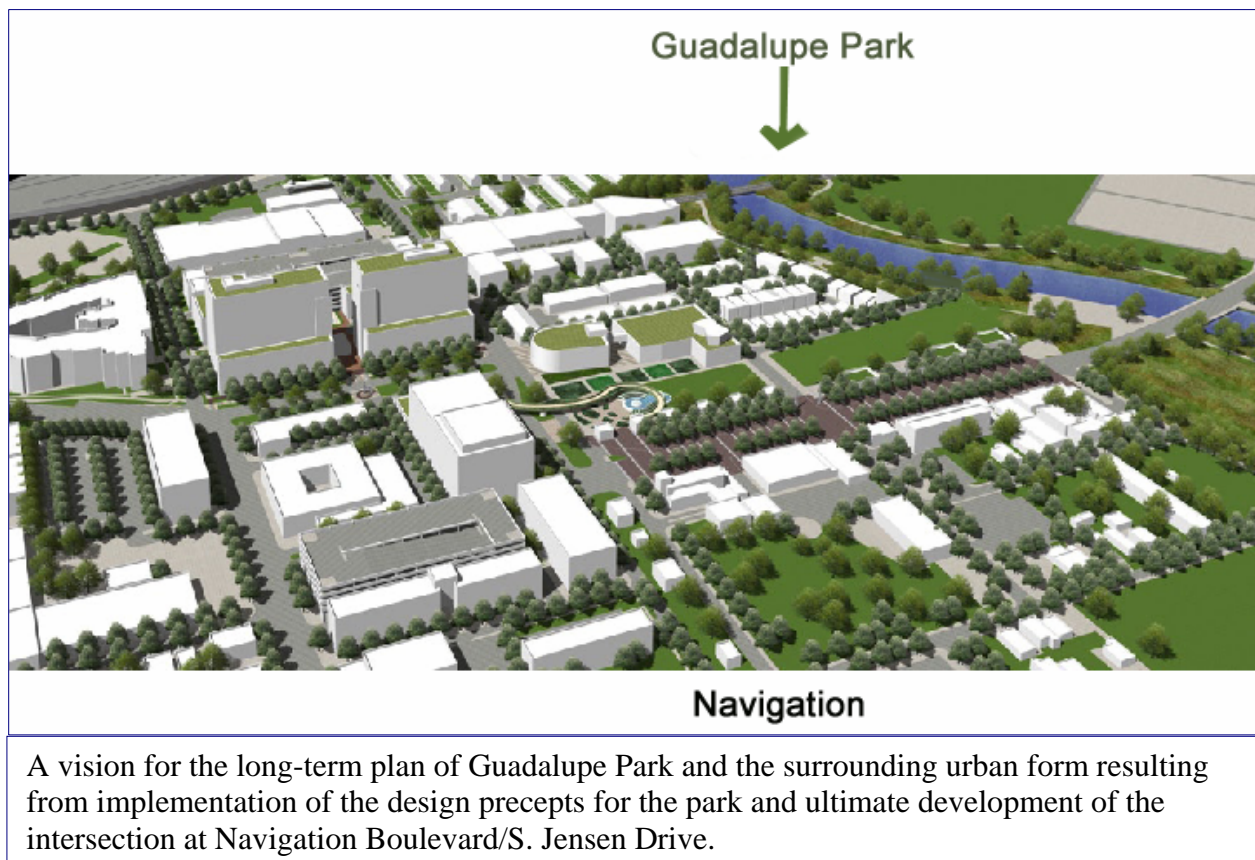
- Provide a seamless pedestrian network that provides safety and comfort, linking a suitable mixture of land uses that are highly interdependent.
- Integrate strategically located, well designed public spaces (i.e., parks, plaza space) into a context of calmed traffic patterns, surrounded by quality new development that is designed as an integral part of pedestrian linkages and activates.
- Integrate a significant streetscape program that connects strategic corridors into nearby neighborhoods. The sidewalks and bikeways must be improved to allow for residents of the neighborhoods, as well as those that work and visit the area, to move seamlessly between locations.
- Connect directly and seamlessly between the gateway and the public spaces via a quality pedestrian experience to direct access to the Buffalo Bayou trail and park system.
- Follow the recommendations in ITE's *Context Sensitive Solution* literature by observing suggested building locations, heights in proportion to street types, and functioning of the pedestrian infrastructure (for all priority transit/pedestrian corridors).
- Promote quality mixed-use development at each of the Gateway places, presented in Chapter 5, Conceptual Master Plan, as exemplified in the Guadalupe Park and surrounding area conceptual design. The development should address the public space with activated ground floor uses that contribute to the activation of the sidewalk as well as related public spaces.
- Encourage artfulness in the planning and design of the buildings and encourage developers to bring buildings up to the ROW with parking hidden from view within the block.
- Create artistic design in all elements for each development whether it is public realm, parks, plazas, boulevards, or private buildings. Artists should play a role in the character of all street furniture, café spaces, lighting, and other areas.
- Set design guidelines and standards for development quality, especially for land uses centered around the public realm components addressing the scale, façade articulation, orientation, and other elements of physical building form to determine and define the character of the public realm buildings.
- Change the Navigation corridor into the “Corazon” (Spanish for Heart) of the community. People should begin to migrate to the spaces along the Navigation corridor for everyday life enhancement. Night lighting, activated street uses lit at night, transparency of storefronts and restaurants from the sidewalk, interesting and well-lit signage all add to the vibrancy of the area both day and night.
- Incorporate an eclectic mix of street furniture, plant materials, wide variety of tree types, etc. in an effort to provide a contextually rich corridor that is unique block to block, street to street, space to space.

Example Navigation Median Treatments

The Advisory Committee reviewed several alternatives for treating the median on Navigation. The committee decided that the median could support a variety of uses depending upon the activities on the blocks along its length. Three examples were selected as representative of this variety in conceptual design. The idea of varying the cross-section of the median was presented and positively received. Therefore, the roadway might narrow or widen to accommodate different uses within the median. The design ideas below are conceptual but should be considered during the design phases concurrently with the design of the pedestrian treatments on Navigation. Considerations should include bulb-outs, street narrowing, and median or sidewalk widening.

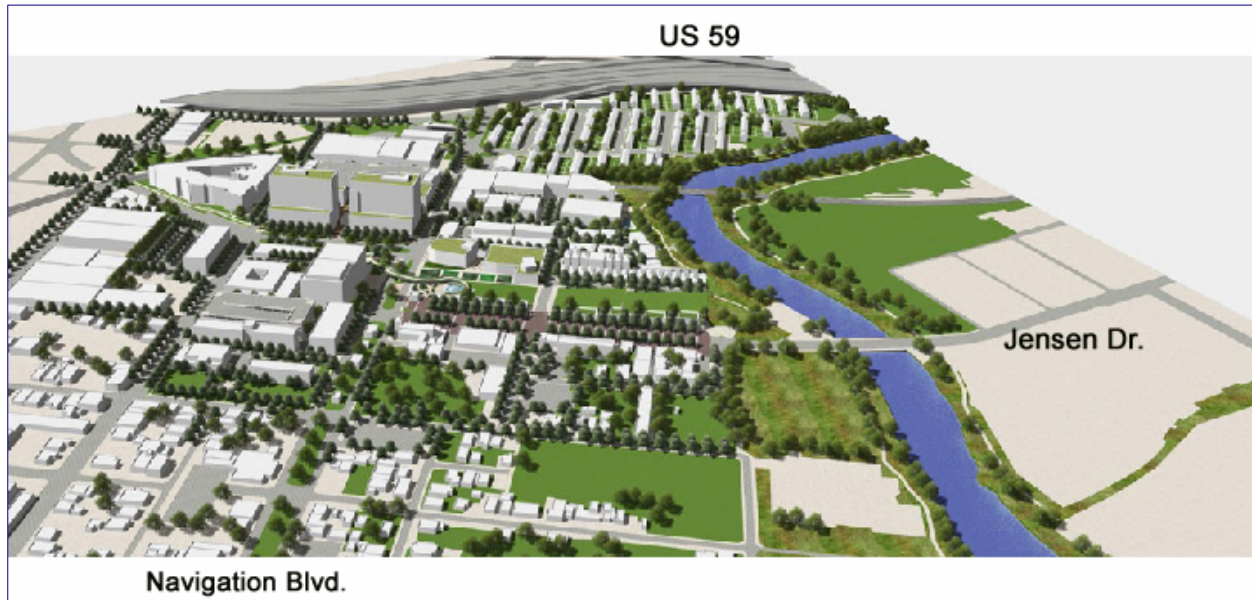


The conceptual urban form that follows gives physical expression to these precepts and other forces that could shape the future urban form of this part of the East End. These figures represent a physical manifestation of how this project area could develop in the long term. They represent the physical expression of goals and objectives of H-GAC's Livable Centers program and the expressed desires of East End stakeholders and the public at large as obtained in several Advisory Committee meetings and open house sessions.

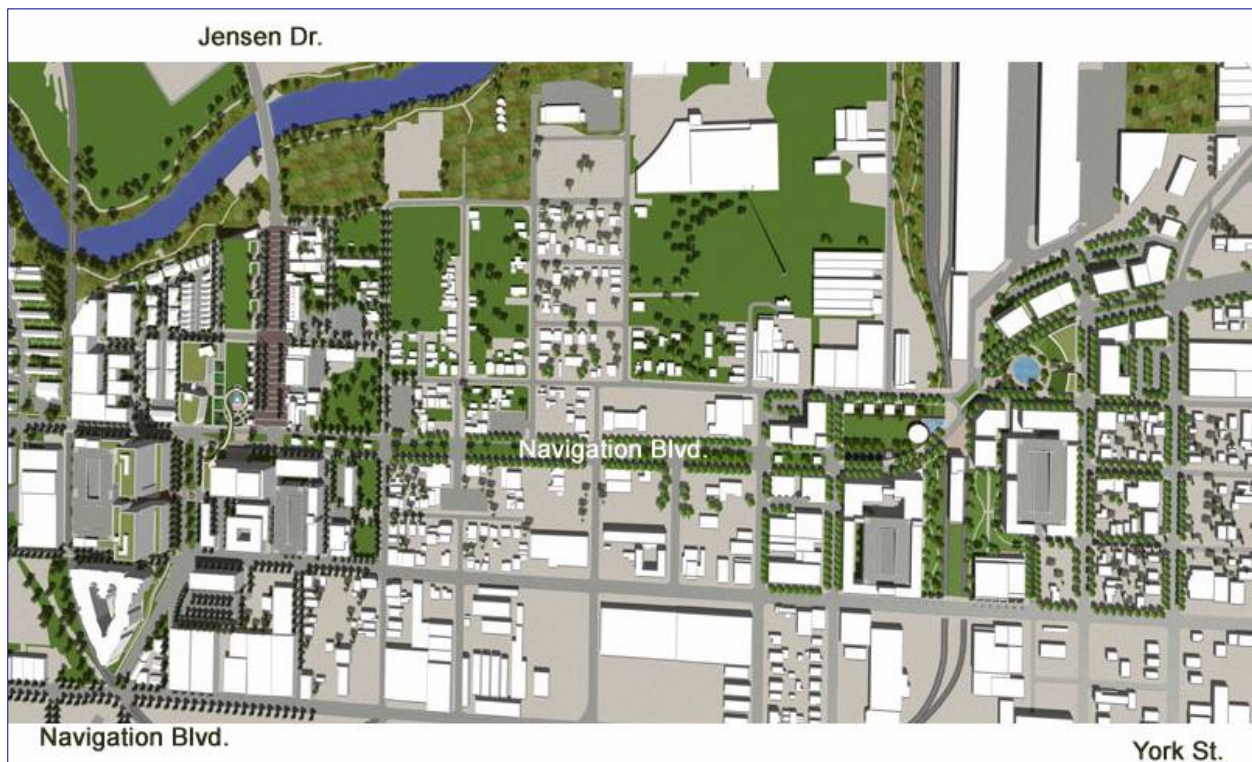




The gateway effect of the realignment of Navigation Boulevard focuses on public institutions and spaces associated with the redevelopment of Guadalupe Park and surrounding area. The treatment of S. Jensen Drive, between Navigation and the bayou, will make the street a part of the park space, a “place maker” that both expands the public space perception of the area and calms traffic on Jensen.



A larger view of the same intersection and park combined with treatments to the neighborhood pedestrian linkages and connection to and development of the bayou.



The large plan view illustrates a second gateway of urban form located on Navigation Boulevard at the curve just west of York Street. The curve will focus the view of both drivers and pedestrians on the added public spaces as it traverses Navigation. Also shown are the multiple uses of the Navigation medium for both passive and active uses.

Chapter 9 - Increased Pedestrian/Transit Travel 9

Reduced Vehicle-Miles Traveled (VMT)

A primary goal of H-GAC's Livable Centers program is to encourage pedestrian and transit activity, thereby, reducing vehicle use and the resulting congestion, emissions, and energy use. The corridors selected for the recommended access improvements are those that have transit service and that are abutted by commercial activities that can attract pedestrian/transit patronage or that possess opportunities for infill/mixed-use development. The availability of transit and improved pedestrian access, combined with existing and future activities that can best be served by transit and pedestrian access, will result in the benefits sought by H-GAC's Livable Centers program. These are the attributes that led to the selection of the Navigation, Canal, York, and Sampson corridors and related side streets as suitable candidates for the recommended improvement presented in Chapter 6.

This chapter focuses on estimating the benefits that will be derived from the investments and related improvements recommended on these corridors. These benefits are in two forms. First, there are benefits from increases in transit ridership due to improvements in pedestrian access and safety. This result has been studied by a variety of nationally recognized authorities, including the Transit Coordination Research Program, Transportation Research Board, and National Research Council, where methods have been developed for predicting the ridership benefits associated with these types of improvements. This chapter presents the methods used and resulting benefits. Second, there are benefits from increased pedestrian activity and transit ridership associated with infill/mixed-use development as reported by ITE in its Recommended Practices report.

VMT Savings from Pedestrian /Transit Access Improvements

Knowing the existing conditions of the pedestrian infrastructure and the Bus Level of Service (BLOS) is important in selecting priority projects (both pedestrian and transit) because of the relationship between the pedestrian infrastructure and the transit level of service, both of which affect ridership and environmental benefits. A report¹ prepared for the Transit Coordination Research Program, Transportation Research Board, and National Research Council, in association with Texas Transportation Institute (TTI), states the following:

The passenger point of view, or quality of service, directly measures passengers' perception of the availability, comfort, and convenience of transit service. There are a number of factors that measure pedestrian and transit quality of service:

- *Service coverage (near one's origin and destination)*
- *Pedestrian environment*
- *Scheduling: Frequency of service*
- *Amenities*

¹ *Transit Capacity and Quality of Service Manual*, Kittelson and Associates, Inc.

- *Transit information*
- *Transfers*
- *Total trip time*
- *Cost*
- *Safety and security*
- *Passenger loads*
- *Appearance and comfort*
- *Reliability*

Of the factors listed above, the following items address pedestrian quality of service.

- ***Pedestrian Environment*** - Even if a transit stop is located within a reasonable walking distance of one's origin and destination, the areas around the transit stops must provide a comfortable walking environment in order for transit to be available.
- ***Amenities*** - The facilities that are provided within the walking distance of transit stops and stations help make transit more comfortable and convenient for transit users. Typical amenities include benches, shelters, informational signing, trash receptacles, and telephones.
- ***Safety and Security*** - Passengers' perceptions of safety must be considered in addition to actual conditions. Transit corridors and stops must be well lit. Planting strips, bollards, and/or on-street parking can provide barriers between pedestrians and vehicles.
- ***Appearance and Comfort*** - Having clean transit stops with pedestrian lighting and some landscaping improves transit's image, especially when attracting choice riders.

The close relationship between an improved pedestrian environment and its contribution to a better transit service and increased ridership has been documented in several studies nationwide. The most recent research addressing the relationship between the pedestrian environment, which is measured in Pedestrian Level of Service (PLOS), and the bus service performances, which is measured in BLOS, is contained in the 2001 *Quality and Level of Service Handbook*, prepared by the Florida Department of Transportation (FDOT). The handbook presents compelling evidence of a relationship between the quality of the pedestrian environment as PLOS, and the quality of the bus service as BLOS.

Additional studies address the relationship between the pedestrian conditions and transit utilization.

- A study of 400 Portland, Oregon, neighborhoods indicated that "households in pedestrian-friendly neighborhoods make over three times as many transit trips and nearly four times as many walk and bicycle trips as households located in neighborhoods with poor pedestrian environments."²

² Source: 1000 Friends of Oregon, 1994.

- “The analysis suggests that vehicle-miles traveled per household in pedestrian-hostile neighborhoods would be reduced by as much as 10% with a significant improvement in the pedestrian environment.”³

Similarly, the proposed pedestrian-oriented streetscape improvements along the four corridors will enhance overall pedestrian environment and bus access from adjacent land uses to bus stops, thereby increasing bus ridership, improving BLOS, reducing VMT, and stimulating higher-density, mixed-use development.

Methodology

The first step in estimating increased transit ridership associated with pedestrian access improvements is to convert the current existing conditions score into a corresponding PLOS. This conversion is presented in *Table 9.1*.

<i>Table 9.1 – Block Face Level of Treatment Score and Pedestrian LOS</i>	
<i>Score</i>	<i>PLOS</i>
1,2,3	A
4,5	B
6,7	C
8,9	D
10,11,12	E
13,14,15	F

The Florida Department of Transportation study, reported in the Transportation Research Record 1773, Paper No. 01-0511: *Modeling the Roadside Walking Environment – Pedestrian Level of Service*, 2002, provides the following list of measurements for a pedestrian’s sense of safety and comfort within a roadway corridor:

- Presence of pathway or sidewalk;
- Architectural interest;
- Pedestrian-oriented lighting and amenities;
- Presence of other pedestrians;
- Barriers or buffers between pedestrians and motor vehicle traffic;
- Conditions at intersections; and
- Motor vehicle composition, volume, and speed.

The PLOS measurements (*Table 9.1*) have been selectively modified to fit into the uniqueness of the four corridors. Since the proposed GEEMD improvements are restricted only within the public rights-of-way between the curb and the property line (with no buildings involved) and the four corridors are all major commercial corridors with different land uses (commercial, office/retail/residential, industrial residential or mixed-use), the PLOS measurements for the GEEMD program are as follows:

³ Source: 1000 Friends of Oregon, 1994.

- **PLOS A and B (Score 1-5):** Wide sidewalks (5 to 6 feet); sidewalks and curbs are in good condition and PLOS B may only need minor repair; sidewalks and curbs meet ADA standards at driveways and intersections; sidewalks are lined with trees; planting strips or on-street parking are used as buffers to protect pedestrians from motor vehicles; and abundant pedestrian-scale lighting and amenities are present.
- **PLOS C and D (Score 6-9):** Sidewalks are present (some areas may need to be widened to 5 or 6 feet, if permitted); sidewalks and curbs need some repair; some ADA ramps need to be installed where there are none or they are broken; some landscaping needed; some planting strips or on-street parking needed; and insufficient pedestrian-scale lighting and amenities exist.
- **PLOS E and F (Score 10+):** Sidewalks and curbs are in bad shape (some areas there are none); few or no ADA ramps exist; little to no landscaping or planting strips exist; little to no pedestrian-scale lighting and amenities exist.

The following photographs demonstrate the correlation between existing conditions described in narrative above and level of treatment needed.



The second step in estimating increased ridership associated with pedestrian access improvements is to relate the PLOS to the BLOS as recommended in the same FDOT study. This conversion is presented in *Table 9.2*.

Table 9.2 – Pedestrian LOS Adjustment Factors on Bus LOS

<i>PLOS</i>	<i>Adjustment Factor on BLOS</i>
A	1.15
B	1.10
C	1.05
D	1.00
E	0.80
F	0.55

The difference between a PLOS A (1.15) and a PLOS B (1.10), as shown in *Table 9.2*, is a BLOS adjustment of five percent. The conversion used in this analysis assumes that enhanced pedestrian access will increase the BLOS by five percent, which means a five percent increase in transit ridership. Similarly, as PLOS increases from D to A, it would result in a 15 percent BLOS adjustment.

The last step in estimating increased ridership associated with improvements in pedestrian access (these improvements are reflected in the “before” PLOS and “after” PLOS) is to multiply the change in the BLOS, presented in *Table 9.2*, associated with the changes in before and after PLOS by the existing ridership. This reflects the expected percent increase in ridership due to the percent increase in BLOS resulting from improved pedestrian access as measured by the before and after PLOS.

The following tables present the existing score PLOS and revised score PLOS, based on the inventory reported in Chapter 6. The existing transit ridership from each block segment is provided with the ridership adjustment factor in BLOS from *Table 9.2*, to derive the estimate of new ridership that will result from the pedestrian access improvements. These new transit riders represent reductions in vehicle use that would otherwise result from making the same trip.

	Navigation						
	NORTH SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
Navigation between St. Charles - Live Oak							
	11	E	0	A	16	35%	6
Navigation between Live Oak - Nagle							
	11	E	0	A	5	35%	2
Navigation between Nagle - Delano							
	12	E	0	A	2	35%	1
Navigation between Delano - Paige							
	11	E	0	A		35%	0
Navigation between Paige - Ennis							
	10	E	0	A	2	35%	1
Navigation between Ennis - Palmer							
	13	F	0	A	4	60%	2
Navigation between Palmer - Nolan @ RR tracks							
	12	E	0	A		35%	0
Navigation between RR Tracks - Sampson							
	13	F	0	A	54	60%	32
Navigation between Sampson and York plus 500 feet							
	13	F	0	A	5	60%	3
TOTAL							
					88		47
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							
	Navigation						
	SOUTH SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
Navigation between St. Charles - Live Oak							
	11	E	0	A	5	35%	2
Navigation between Live Oak - Nagle							
	11	E	0	A	2	35%	1
Navigation between Nagle - Delano							
	13	F	0	A	6	60%	4
Navigation between Delano - Paige							
	12	E	0	A		35%	0
Navigation between Paige - Ennis							
	13	F	0	A	3	60%	2
Navigation between Ennis - Palmer							
	11	E	0	A		35%	0
Navigation between Palmer - Nolan @ RR tracks							
	10	E	0	A	2	35%	1
Navigation between RR Tracks - Sampson							
	12	E	0	A		35%	0
Navigation between Sampson and York plus 500 feet							
	12	E	0	A	31	35%	11
TOTAL							
					49		19
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							

	Sampson						
	EAST SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
		There are no stops on the East Side of this street					
Sampson between Navigation - Engelke							
	14	F	0	A			
Sampson between Engelke - Runnels							
	11	E	2	A			
Sampson between Runnels to Saltus							
	13	F	2	A			
Sampson between Runnels - Saltus							
	0	A	0	A			
Sampson between Saltus - Canal							
	12	E	2	A			
Sampson between Canal - McAshan							
	14	F	2	A			
Sampson between McAshan - Commerce							
	14	F	2	A			
Sampson between Commerce - Sherman							
	13	F	2	A			
Sampson between Sherman - Garrow							
	14	F	2	A			
Sampson between Garrow - Preston							
	14	F	2	A			
Sampson between Preston - Harrisburg							
	13	F	2	A			
TOTAL							
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							
	Sampson						
	WEST SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
Sampson between Navigation - Engelke							
	14	F	0	A	82	60%	49
Sampson between Engelke - Runnels							
	10	E	2	A			
Sampson between Runnels to Saltus							
	13	F	2	A			
Sampson between Runnels - Saltus							
	9	D	0	A			
Sampson between Saltus - Canal							
	12	E	2	A	34	35%	12
Sampson between Canal - McAshan							
	13	F	2	A			
Sampson between McAshan - Commerce							
	14	F	2	A			
Sampson between Commerce - Sherman							
	12	E	2	A	4	35%	1
Sampson between Sherman - Garrow							
	13	F	2	A			
Sampson between Garrow - Preston							
	14	F	2	A	2	60%	1
Sampson between Preston - Harrisburg							
	13	F	2	A	17	60%	10
TOTAL							
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							

	Canal						
	NORTH SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
Canal between Navigation - Mcalpine							
	10	E	0	A	79	35%	28
Canal between Mcalpine - N. St. Charles							
	10	E	0	A	33	35%	12
Canal between N. St. Charles - N. Live Oak							
	13	F	0	A			
Canal between N. Live Oak - N. Delano							
	9	D	2	A	23	15%	3
Canal between Delano - Ennis							
	11	E	0	A	29	35%	10
Canal between Ennis - Palmer							
	11	E	2	A	34	35%	12
Canal between Palmer - RR							
	12	E	2	A			
Canal between RR - Nolan							
	12	E	4	B			
Canal between Nolan - Sampson							
	13	F	0	A	95	60%	57
Canal between Sampson - York							
	12	E	2	A			
Canal between York plus 500 feet							
	12	E	2	A			
TOTAL					293		122
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							
	Canal						
	SOUTH SIDE OF STREET						
	Existing	Existing	Revised	Revised	Existing	Ridership	Added
	Score	PLOS	Score	PLOS	Ridership	Adjustment	Ridership
Canal between Navigation - Mcalpine							
	10	E	0	A	98	35%	34
Canal between Mcalpine - N. St. Charles							
	10	E	0	A	31	35%	11
Canal between N. St. Charles - N. Live Oak							
	11	E	0	A			
Canal between N. Live Oak - N. Delano							
	10	E	2	A	38	35%	13
Canal between Delano - Ennis							
	13	F	4	B	16	55%	9
Canal between Ennis - Palmer							
	11	E	0	A			
Canal between Palmer - RR							
	11	E	2	A	29	35%	10
Canal between RR - Nolan							
	12	E	4	B			
Canal between Nolan - Sampson							
	13	F	0	A	62	60%	37
Canal between Sampson - York							
	12	E	0	A			
Canal between York plus 500 feet							
	12	E	0	A			
TOTAL					274		115
Benefits\BEFORE Score, PLOS and AFTER Score, PLOS Ridership							

	York						
	EAST SIDE OF STREET						
	Existing Score	Existing PLOS	Revised Score	Revised PLOS	Existing Ridership	Ridership Adjustment	Added Ridership
York EAST of Harrisburg - Preston							
	13	F	2	A	29	60%	17
York between Preston - Garrow							
	13	F	2	A			
York Between Garrow to Sherman							
	13	F	2	A	4	60%	2
York between Sherman - Commerce							
	13	F	2	A			
York between Commerce - McAshan							
	13	F	2	A			
York between Canal - Saltus							
	13	F	2	A	29	60%	17
York between Saltus - Runnels							
	13	F	2	A			
York between Runnels - Engelke							
	14	F	2	A	69	60%	41
York between Engelke - Navigation							
	13	F	2	A			
York between Navigation to Hutcheson							
	11	E	0	A	26	35%	9
York between Hutcheson to Freund							
	11	F	0	A			
York between Freund - Ball							
	13	F	2	A	4	60%	2
York between Ball to RR							
	13	F	0	A			
York between RR to Lemke (@Tony Morun Park)							
	11	E	0	A			
TOTAL					161		90
Benefits(BEFORE Score, PLOS and AFTER Score, PLOS Ridership)							
	York						
	WEST SIDE OF STREET						
	Existing Score	Existing PLOS	Revised Score	Revised PLOS	Existing Ridership	Ridership Adjustment	Added Ridership
There are no stops on the West side of York between Navigation and Harrisburg							
York EAST of Harrisburg - Preston							
	13	F	2	A			
York between Preston - Garrow							
	13	F	2	A			
York Between Garrow to Sherman							
	13	F	2	A			
York between Sherman - Commerce							
	13	F	2	A			
York between Commerce - McAshan							
	13	F	2	A			
York between Canal - Saltus							
	13	F	2	A			
York between Saltus - Runnels							
	12	E	2	A			
York between Runnels - Engelke							
	13	F	2	A			
York between Engelke - Navigation							
	13	F	2	A			
York between Navigation to Hutcheson							
	13	F	0	A	33	60%	20
York between Hutcheson to Freund							
	13	F	0	A			
York between Freund - Ball							
	12	E	0	A	2	35%	1
York between Ball to RR							
	12	E	0	A			
York between RR to Lemke (@Tony Morun Park)							
	11	E	0	A			
TOTAL					35		21
Benefits(BEFORE Score, PLOS and AFTER Score, PLOS Ridership)							

Table 9.3 summarizes the estimated ridership increase associated with the measured improvements in the pedestrian access to transit. The added riders or transit trips will result in reduced VMT and, therefore, reducing the resulting congestion, emissions, and energy use.

Table 9.3 – New Transit Trips			
	North Side	South Side	Combined
Navigation	46	19	
Canal	122	115	
	East Side	West Side	
Sampson	n/a	74	
York	90	n/a	
Total	258	208	466
n/a = no data available.			

There are no transit stops on the east side of Sampson or the west side of York because these streets are a one-way pair where northbound transit riders exit and enter on York and southbound transit riders exit and enter on Sampson. A total of 466 new daily transit trips will result from the investment and treatments recommended for these four corridors.

- Daily vehicle trips reduced total 373, based on applying a 1.25-person occupancy per vehicle factor multiplied by 466 new transit trips (258 + 208 from Table 9.3).
- Average trip length in the Houston-Galveston region is 8.6 miles⁴. Multiplying this by the 373 daily vehicle trips reduced results in a reduced VMT of 3,208 miles.

VMT Savings from Infill/Mixed-Use Development

The benefits associated with mixed-use development vary as a function of the amount, mixture, density, and connectivity of the uses. A city or urban area is a mix of uses connected primarily by vehicle rights-of-way. H-GAC's Livable Centers program is designed, in part, to reduce vehicle travel, along with other agenda that include sustainable development, quality of life, and other benefits associated with New Urbanism and Smart Growth, which are a major part of state of the art planning applications in building more successful communities. The desire to reduce vehicle travel and, therefore, reduce the resulting congestion, emissions, and energy use is addressed in the East End Livable Centers project through the pursuit of improved pedestrian and transit activity, and infill/mixed-use development that presents a desirable mix of uses in amounts and designs that will enhance pedestrian and transit travel and reduce vehicle dependence.

The research and methods used to compute the increase in pedestrian and transit utilization is presented in ITE's *Trip Generation Report*, 2nd Edition, Recommended Practice. A series of analytical steps precedes this application and sets the stage for estimates of the benefits associated with infill/mixed-use development.

1. **Determine** amount of land available for infill/mixed-use development. The square footage of vacant land on properties abutting the public investment in streetscaped and landscaped pedestrian linkages was used, Table 9.4.

⁴ Source: H-GAC.

2. **Determine** the mix of uses suitable for development of available land. Each corridor was considered independently. For example, the Navigation commercial corridor was allocated more commercial activity than the residential corridors on Sampson or York, *Table 9.4*.
3. **Determine** the site coverage and building heights appropriate for the right-of-way cross-sections and required on-site parking, pedestrian plazas, access points, and other ground-level needs. The cross-sections used were documented in Chapter 8.
4. **Calculate** the square footage program that can be accommodated on each corridor, as shown in *Table 9.5* based on the site “coverage” or “footprint,” and the appropriate building heights.

Table 9.4 – Recommended Mix of Land Uses

<i>Corridor</i>	<i>Vacant Property (Sq. Ft.)</i>	<i>Retail</i>	<i>Office</i>	<i>Services</i>	<i>Housing</i>	<i>Light Industry</i>	
Navigation	177,174	40%	20%	10%	20%	10%	100%
		70,870	35,435	35,435	26,576	8,859	
Canal	457,680	15%	15%	10%	20%	40%	100%
		68,652	45,768	45,768	68,652	228,840	
York	289,446	10%	10%	10%	60%	10%	100%
		28,945	28,945	28,945	173,668	28,945	
Sampson	173,939	10%	10%	10%	60%	10%	100%
		17,394	17,394	17,394	104,363	17,394	
Jensen	326,641	40%	20%	10%	20%	10%	100%
		97,992	65,328	65,328	65,328	32,664	
Total	1,424,880	283,853	192,870	192,870	438,587	316,702	
Site Coverage		50%	50%	50%	50%	50%	
Building Floors		1	4	4	4	1	

Table 9.5 – Mixed-Use Development Program at 20-Year Buildout

<i>Corridor</i>	<i>Retail (sq. ft.)</i>	<i>Office (sq. ft.)</i>	<i>Services (sq. ft.)</i>	<i>Light Industry (sq. ft.)</i>	<i>Housing (units*)</i>
Navigation	35,435	70,870	70,870	4,429	43
Canal	34,326	91,536	91,536	114,420	110
York	14,472	57,889	57,889	14,472	278
Sampson	8,697	34,788	34,788	8,697	167
Jensen	48,996	130,656	130,656	16,332	105
Total	141,926	385,739	385,739	158,350	703

* Assumes 1,500 sq. ft. average.

5. **Convert** the building program into two-way vehicle trips that would be generated if not for the mix and density of uses programmed. Base data was provided in ITE's *Trip Generation* report, the best and most substantiated source of travel demand data, *Table 9.6*.
6. **Convert** demand for vehicle trips into internal versus external trips to account for the percentage of trips that would, under normal circumstances, have taken place using vehicles, but, instead, take place using transit or as pedestrian activity due to the mix of uses, their proximity, and the pedestrian linkages and transit access provided. This calculation is limited to residential, retail, and office/services uses only. This is because these internal travel demand indicators are the only ones that have been studied sufficiently to yield reliable estimates of the benefits to be obtained. It is recognized that some trip activity will take place between other uses; however, for purposes of providing reliable, supportable, and accurate estimates, these are not accounted for in this plan, resulting in more reliable, if more conservative, estimates, *Table 9.7*.

Table 9.6 – Daily Vehicle Trips from Development If Not Mixed Use			
Land Use	Sq. Ft. or Units	Trip Factor*	24-Hour Vehicle Trips
Retail	141,926	44.32	6,290
Office/Services	771,478	11.01	8,494
Residential	702	6.225	4,370
Total Daily Vehicle Trips			19,154
*Source: ITE, <i>Trip Generation</i> , 7 th Edition. Residential trip factor based on a mix of housing types: townhouses, apartments, and condominiums.			

By applying the ITE Recommended Practice to these daily vehicle trips results in the determination of the portion of these trips that can be classified as “internal trips” versus “external trips.” An internal trip is a trip that will take place within the mixed-use center or corridor, if suitable pedestrian linkages and or transit service were available. *Table 9.7* presents the results of the application of the ITE Recommended Practice.

Table 9.7 – Daily Internal Two-Way Vehicle Trips	
Two-Way Trips	Vehicle Trips
Office--Retail	189
Retail--Retail	1,761
Residential--Retail	566
Residential--Office	131
Total	2,647

Multiplying the 2,647 daily internal vehicle trips by 8.6 miles⁵ would result in a daily reduction of 22,764 VMT. The realization of this vehicle trip reduction is based on the 20-year buildout of the infill/mixed-use program presented earlier. Of this 22,764 VMT reduction, an average of 5% will occur annually and in Year 1 a daily VMT reduction of 1,138 miles can occur. Combining this Year 1 daily vehicle trip reduction with the 3,208 reduced daily VMT (from an increase in ridership associated with the recommended pedestrian/transit access improvements in Year 1) in Year 1 results in an estimated daily reduction of 4,346 VMT and in Year 20 results in an estimated daily reduction of 25,954 VMT. *Table 9.8* presents a summary of the daily VMT reductions and related cold starts from a combination of the improvements in pedestrian/transit access and infill/mixed-use development.

<i>Table 9.8 – Daily Reduced VMT and Cold Starts</i>				
<i>Source</i>	<i>VMT Reductions</i>		<i>Cold Starts Reductions</i>	
	<i>Year 1</i>	<i>Year 20</i>	<i>Year 1</i>	<i>Year 20</i>
Pedestrian/Transit Access	3,208	3,208	377	377
Infill/Mixed-Use Development	1,138	22,764	132	2,647
<i>Total</i>	4,346	25,972	509	3,024

These reductions in VMT, and related reductions in cold starts, will result from the implementation of the East End Livable Centers program. The emission benefits associated with these reductions are presented in Chapter 10, Benefits.

⁵ Average vehicle trip length for H-GAC region.

Chapter 10 - Benefits 10

This chapter focuses on the benefits for GEEMD resulting from the East End Livable Centers program investments as recommended in this plan. Benefits would include reductions in VMT and related automobile congestion, emissions, and fuel consumption. These benefits are derived from the recommended improvements in pedestrian infrastructure, enhanced walkability and pedestrian travel, increased transit ridership associated with pedestrian access improvements, and infill/mixed-use development that likely will occur as a result of these improvements.

In addition to the emission benefits associated with reduced vehicle travel, there are both emission and economic benefits that will result from the increased infill/mixed-use development facilitated, in part, by the investment in related public infrastructure derived from the highly desirable redevelopment area situated next door to downtown. Some of this development has already taken place. There are also quality-of-life benefits that can be described in terms of neighborhood pride, added recreational opportunities, an improved sense of place, increased safety, and an increase of richer, more fulfilling public places. These quality-of-life benefits may be less tangible than emission reductions or economic benefits; however, they are an important result of the East End Livable Centers program.

Emission Benefits

This section presents the emission reductions associated with reduced VMT and reduced cold starts presented in Chapter 9. *Table 10.1* presents the results obtained in calculating these reduced VMT and cold starts.

Table 10.1 – Daily Reduced VMT and Cold Starts				
Source	VMT Reductions		Cold Starts Reductions	
	Year 1	Year 20	Year 1	Year 20
Pedestrian/Transit Access	3,208	3,208	377	377
Infill/Mixed-Use Development	1,138	22,764	132	2,647
Total	4,346	25,972	509	3,024

The methodology used to estimate the emission benefits resulting from reduced VMT and reduced cold starts presented in *Table 10.1* involves applying U.S. Environmental Protection Agency (EPA) emission standards, H-GAC trip length standards, and street operating characteristics.

- Year 1 daily VMT reductions total 4,346 miles. Based on a 20-year buildout of the infill/mixed-use program, the estimated 20-year daily VMT reduction totals 25,954 miles. The cold starts reductions estimated for Year 1 total 509 daily and for Year 20 total 3,024 daily.
- Vehicle operating characteristics are for an average automobile fleet (a variety of vehicle types), traveling at an average speed of 25 miles per hour.

- Emission factors supplied by EPA's Mobile6 computer model.

Employing these assumptions and factors results in the emission reductions for NO_x, VOC, and CO presented in *Tables 10.2 and 10.3* for Years 1 and 20, respectively.

Table 10.2 - Daily Vehicle Emission Reductions Year 1

Type of Emission	Number of Cold Starts Reduced	Grams Reduced Per Cold Start (1)	Total Grams Reduced Cold Starts	VMT Reduced (2)	Emission Factors (3) grams/mile	VMT Grams Reduced	Reduced Grams Per Day	Grams Conversion to Pounds Reduced	Conversion to Daily Tons Reduced	Annual Net Tons Reduced
		2						0.0022046	0.0005	365
NO_x	509	4.130833	2,103	4,346	1.084188375	4,711.88	6,814.48	15.0232	0.0075	2.7417
VOC	509	9.381174	4,775	4,346	0.928608413	4,035.73	8,810.75	19.4242	0.0097	3.5449
CO	509	43.97207	22,382	4,346	8.035357386	34,921.66	57,303.45	126.3312	0.0632	23.0554
Total			29,259			43,669.28	72,928.67	160.779	0.080	29.3421

(1) Source: H-GAC, Cold start emissions based on H-GAC's methodology employing the emission factors of a vehicle traveling at 2.5 mph times 2

(2) Source: H-GAC, Average trip length in H-GAC region = 8.6 mi.

(3) Source: H-GAC/EPA, arterial composite fleet, 24-hour composite @ 25 mph.

Table 10.3 - Daily Vehicle Emission Reductions Year 20

Type of Emission	Number of Cold Starts Reduced	Grams Reduced Per Cold Start (1)	Total Grams Reduced Cold Starts	VMT Reduced (2)	Emission Factors (3) grams/mile	VMT Grams Reduced	Reduced Grams Per Day	Grams Conversion to Pounds Reduced	Annual Net Tons Reduced
		2						0.0022046	365
NO_x	3,024	4.1308332	12,492	25,972	1.084188375	28,158.54	40,650.18	89.6174	16.3552
VOC	3,024	9.3811739	28,369	25,972	0.928608413	24,117.82	52,486.49	115.7117	21.1174
CO	3,024	43.972068	132,972	25,972	8.035357386	208,694.30	341,665.84	753.2365	137.4657
Total			173,832			260,970.66	434,802.50	958.566	174.9382

(1) Source: H-GAC, Cold start emissions based on H-GAC's methodology employing factors of a vehicle traveling 2.5 mph times 2.

(2) Source: H-GAC, Average trip length in H-GAC region = 8.6 mi.

(3) Source: H-GAC/EPA, arterial composite fleet, 24-hour composite @ 25 mph.

Year 1 emission results total a daily reduction of 72,929 grams from the combined effects of the removal of 509 cold starts and 4,346 VMT. This means a yearly reduction of emissions in Year 1 of over 29 tons. Year 20 emission results are significantly higher, due, in large part, to the continued buildout of the infill/mixed-use development programmed for the Navigation, Canal, Sampson and York corridors, resulting in a daily reduction of 434,803 grams of emissions and a yearly reduction of over 174 tons of emissions.

Economic Benefits

Economic benefits are derived from increases in property and sales taxes resulting from the increased values of real estate development associated with the mixed-use East End Livable Centers initiatives contained in this project. The building program and resultant values created are presented in Chapter 7. *Table 10.4* is repeated from Chapter 7 to provide a point of departure for the value added estimates in *Table 10.5*.

Table 10.4 – Mixed-Use Development Program at 20-Year Buildout

Corridor	Retail (sq. ft.)	Office (sq. ft.)	Services (sq. ft.)	Light Industry (sq. ft.)	Housing (units*)
Navigation	35,435	70,870	70,870	4,429	43
Canal	34,326	91,536	91,536	114,420	110
York	14,472	57,889	57,889	14,472	278
Sampson	8,697	34,788	34,788	8,697	167
Jensen	48,996	130,656	130,656	16,332	105
Total	141,926	385,739	385,739	158,350	703

* Assumes 1,500 sq. ft. average.

The following are the applied values in 2009 dollars per square foot and residential unit.

- Retail (sq. ft.) = \$120
- Office (sq. ft.) = \$120
- Services (sq. ft.) = \$120
- Light Industry (sq. ft.) = \$100
- Housing (units) = \$120,000

Applying these applied values to the development program presented in *Table 10.4* results in the values shown in *Table 10.5* for each corridor and land use category.

Table 10.5 - Value Added at 20-Year Buildout

Corridor	Retail	Office	Services	Light Industry	Housing	Total
Navigation	\$4,252,176	\$8,504,352	\$8,504,352	\$442,935	\$5,102,611	\$26,806,426
Canal	\$4,119,120	\$10,984,320	\$10,984,320	\$11,442,000	\$13,181,184	\$50,710,944
York	\$1,736,676	\$6,946,704	\$6,946,704	\$1,447,230	\$33,344,179	\$50,421,493
Sampson	\$1,043,634	\$4,174,536	\$4,174,536	\$869,695	\$20,037,773	\$30,300,174
Jensen	\$5,879,538	\$15,678,768	\$15,678,768	\$1,633,205	\$12,543,014	\$51,413,293
Total	\$17,031,144	\$46,288,680	\$46,288,680	\$15,835,065	\$84,208,762	\$209,652,331

The total “real property added” value associated with the mixed-use program at buildout is over \$209 million. Income to the City, County, and a variety of agencies and departments will be realized through the property tax income created by this value. The anticipated income for each is presented in *Table 10.6*.

Table 10.6 - Annual Property Tax Revenue (Houston/Harris County Tax Rates)				
Taxing Authority	Rate	Value	Value Per \$100	Property Tax Revenue
HISD	1.62	\$209,652,331	\$2,096,523	\$3,396,368
Harris County	0.39986	\$209,652,331	\$2,096,523	\$838,316
Harris County Flood Control	0.03322	\$209,652,331	\$2,096,523	\$69,647
Port of Houston	0.01474	\$209,652,331	\$2,096,523	\$30,903
Harris Co. Hospital Dist.	0.19216	\$209,652,331	\$2,096,523	\$402,868
Harris Co. Education Dept.	0.00629	\$209,652,331	\$2,096,523	\$13,187
Houston Community College	0.09577	\$209,652,331	\$2,096,523	\$200,784
City of Houston	0.6475	\$209,652,331	\$2,096,523	\$1,357,499
Total	3.00954			\$6,309,571

The total property tax revenue at buildout for the recommended mixed-use program will be \$6,309,571 per year.

Annual sales tax income is based on an estimated level of sales per square foot, which averages \$250, multiplied by the sales tax (capped at 0.0825 by the State of Texas). This source of revenue is distributed to three recipients: City of Houston, METRO, and the State of Texas. *Table 10.7* presents the annual sales tax values captured by each at buildout based on the 141,926 square feet of retail (*Table 10.4*) times \$250 per square foot per year.

Table 10.7 - Annual Sales Tax					
Type	Sq. Ft.	Annual Sales Per Sq. Ft.	Total Sales	Tax Rate	Tax Revenue
Retail	141,926	\$250	\$35,481,500	0.0825	\$2,927,224
	City of Houston		\$35,481,500	0.01	\$354,815
	Houston METRO		\$35,481,500	0.01	\$354,815
	State of Texas		\$35,481,500	0.0625	\$2,217,594

The annual sales tax at buildout will be \$2,927,224 in 2009 dollars. The State of Texas will receive the majority of these tax dollars (\$2,217,594). The total value created by the implementation of the infill/mixed-use development at buildout will be \$9,236,795.

Quality of Life Improvements

An overarching objective of this study has been to develop a plan that will lead to improvements in the community and, ultimately, to an increase in the quality of life of its residents. While this objective is unquestioned and easily understood, defining exactly what is meant by “quality of

life” is a thorny issue. Quality of life is, by nature, an intangible concept. It is relatively easy for an individual to judge the level of his or her quality of life, based on a personal definition of the concept and personal priorities. However, it is more difficult to develop a set of quantitative measures designed to indicate the quality of life for a community at large.

Current research indicates that this is an issue that practitioners and academics are actively grappling with, but have yet to reach consensus on. A number of communities across the nation have developed their own lists of measurement criteria (often calling them “sustainability indicators”) meant to quantify the degree of quality of life that the community does or does not offer. These include communities as diverse as Juneau, Alaska; Boston, Massachusetts; Austin, Texas; Chattanooga, Tennessee; and Cleveland, Ohio. The list of areas from which the criteria are developed is just as diverse. For instance, quality-of-life measurement tools can be taken from the economic, environmental, health and public safety, educational, and/or transportation realms, among others.

This plan has focused on urban design, the built environment, and transportation. Therefore, to relate potential quality-of-life benefits to the recommended projects, this plan is based on those criteria developed by other communities relevant to those focused areas. As an example, a study conducted in Montgomery County, Maryland, relates what they term “design excellence” to quality of life. Design excellence refers to a built environment that best serves to advance a set of desirable community characteristics, such as those listed below:

- *Safety* – Crime Prevention Through Environmental Design (CPTED) review of streets and highways including sidewalks, trails, pedestrian bridges and other pedestrian facilities, individual building sites, and open spaces.
- *Walkability* – Interconnected streets network with adequate and convenient sidewalks to public facilities and the surrounding neighborhoods.
- *Identity/Character* – Unique design features for various types of streets, buildings, and open spaces that give special character to a place. Buildings and open spaces should have local character and be pleasing to see, feel, and be in. Major civic buildings should have distinctive architecture.
- *Sustainability* – The design of our buildings, public spaces, and infrastructure should be guided by the best environmental stewardship principles including Leadership in Energy and Environmental Design (LEED) standards for neighborhood planning, imperviousness caps, forest conservation, street tree standards, and best practices for stormwater management in high-density areas.
- *Durability* – The built environment must be durable and adoptable through better design with quality materials and workmanship, especially when it comes to the public realm.
- *Context Sensitivity* – Street design appropriate to its context (rural, rustic, urban, suburban), relationship of buildings and open spaces to their context, setback from adjoining uses, and other considerations. As the development becomes denser in the future, context will become more significant since the potential conflicts between different uses and building forms may be more intense and would require better design skills on the part of the designers. A deeper understanding of the context helps identify when it is appropriate to blend in with the surroundings and when it may be appropriate to stand out.

Montgomery County assumes that a community with the aforementioned features also will have a high quality of life. In the case of the East End, it is clear that the project recommendations, if successfully implemented, will work toward bringing these characteristics to the community. For instance, proposed streetscape improvements will add to the walkability of the neighborhood, pedestrian-oriented lighting and appropriate landscaping will increase safety, and improvements to Guadalupe Park and Plaza will augment the identity and character of the East End. Great effort has been taken to ensure all of the recommended improvements account for appropriate context sensitivity. This includes consideration of the community's history, the stated preferences of the residents and stakeholders during the public involvement process, the relationships among differing land uses (e.g., residential, commercial, industrial), and the balance between the urban and residential areas, given the community's proximity to downtown.

Two concepts mentioned previously deserve further discussion, due to their significance to the East End: CPTED and Context Sensitivity.

Crime Prevention Through Environmental Design¹

According to the National Crime Prevention Institute, CPTED is “the proper design and effective use of the built environment which may lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life.” CPTED is a relatively new concept that relates certain elements of good urban design to their role in reducing the incidence of crime. In some communities, where CPTED has been successfully implemented, criminal activity has decreased by as much as 40 percent.

CPTED involves the following four broad strategies:

- *Natural Surveillance* – A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas, and building entrances; doors and windows that look out on to streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; and adequate nighttime lighting.
- *Territorial Reinforcement* – Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Promoted by features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and CPTED fences.
- *Natural Access Control* – A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Gained by designing streets, sidewalks, building entrances, and neighborhood gateways to clearly indicate public routes and discouraging access to private areas with structural elements.
- *Target Hardening* – Accomplished by features that prohibit entry or access, such as window locks, dead bolts for doors, and interior door hinges.

These strategies can be implemented in slightly different ways depending on the land use (i.e., single-family residential, multi-family residential, office, retail, industrial, parking). Specific

¹ Source: www.cpted-watch.com

guidelines for implementation are widely available via local police departments (including the Houston Police Department) and other organizations.

Context Sensitivity

ITE's *Proposed Recommended Practice, Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* report sets new design guidelines for pedestrian design. Context sensitivity includes urban design that ensures the comfort and safety of all users in a particular corridor, regardless of which mode of transportation they choose (i.e., automobile, bicycle, or walking). As shown in *Figure 10.1*, the area between the curb and the buildings has several zones. These include areas for landscaping and/or street furniture, sidewalks, and setback zones between the edge of the public right-of-way and the face of the building, which the property owner may use as they want. Ideally, the sidewalk will be wide enough to ensure maximum comfort for pedestrians and for other amenities such as trees, benches, and pedestrian-oriented lighting. Adjustments can be made as needed, such as foregoing the planting strip in order to accommodate on-street parking.

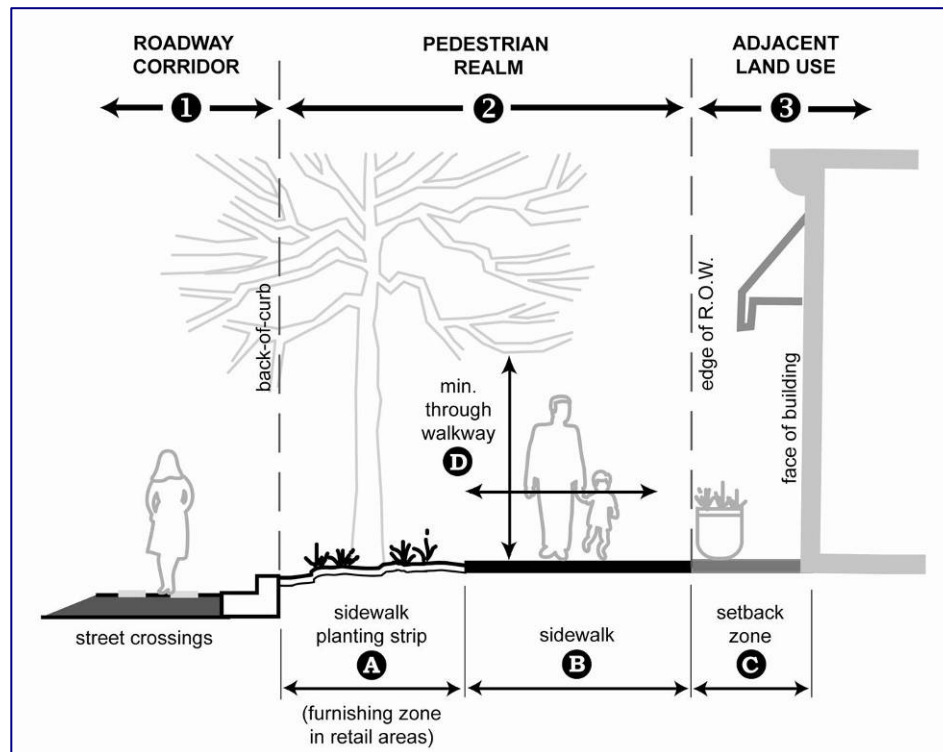


Figure 10.1 – Context Sensitivity in Pedestrian Realm

Another important factor in context sensitivity is building scale in relation to the street. *Figure 10.2* illustrates 1:2 and 1:3 building height-to-street width ratios. These ratios typically are preferred for creating a “human” scale on the street, one that fosters a comfortable environment that encourages walking.

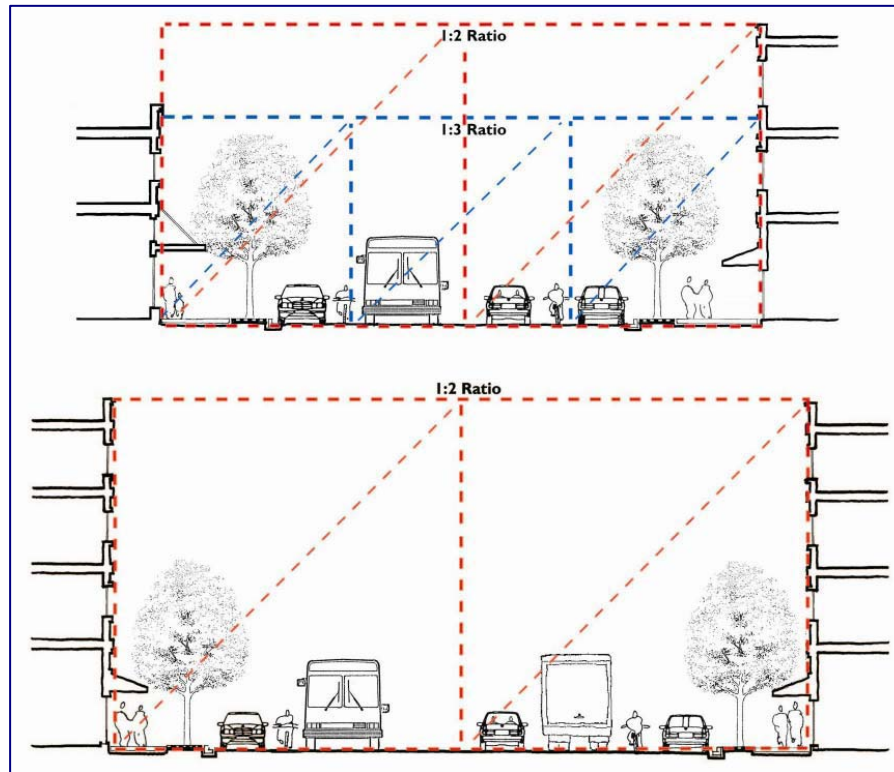


Figure 10.2 – Height-to-Width Ratios

Local (Quality of Life) Initiatives

Attention is being paid in Houston to defining quality of life and bringing about improvements to it as well. The Quality of Life Coalition Houston is an umbrella organization of business, civic, and charitable organizations created to address quality-of-life issues in Houston. Specifically, the group has targeted four areas of concern: trees and landscaping; parks, bayous, and recreation; billboards and signage; and litter and graffiti. The QOL Coalition Houston feels that making strides in these areas will do the most good toward increasing Houston's quality of life. The East End has embraced the study recommendations of planting trees and additional landscaping, and improving connections to the area's parks and Buffalo Bayou. This shows that the East End is on the right track in terms of offering its residents the highest quality of life possible.

Conclusion

Although the concept of quality of life may be difficult to quantify, an improved quality of life is generally easy to visualize and to recognize when it has been achieved. The East End is poised, by way of implementation of the project recommendations, to bring to the community those elements that are generally accepted as playing a role in a high quality of life. This plan has given attention to context sensitivity and valuable guidelines such as CPTED.

Safety

Crime and safety are priorities of area residents in the project area. Safety issues will inform the design of the East End Livable Centers project. The approach of CPTED has been applied in this plan and will be applied during completion of the plan recommendations to prevent and/or reduce crime and traffic accidents. Three CPTED strategies that can be employed in this design are natural surveillance, territorial reinforcement, and natural access control.

Lighting

The HPD officers interviewed noted that pedestrians have difficulty traveling through the Navigation underpass. The underpass has no sidewalks and no lighting for pedestrian safety into the project area. In addition, there is no flood gauge in the underpass to alert drivers and pedestrians on the level of rising water. Other areas noted by the HPD officers as being deficient in lighting include the area along Harrisburg, near Velasco and Roberts, and the area surrounding Eastwood Park, near Harrisburg and Lockwood, just outside the project area.

Wayfinding Signage

The HPD officers interviewed suggested that improved signage would help drivers and, therefore, vehicle traffic significantly. Based on the questions they receive, their recommendation was installation of wayfinding signage in the project area for downtown, US 59, and IH 10.

Chapter 11 - Costs 11

This chapter presents a summary of the costs associated with the walkability improvements discussed in Chapter 6 and the costs associated with the conceptual design phased for Guadalupe Park and the surrounding area discussed in Chapter 8.

Walkability Improvements Cost

Table 11.1 presents the base costs for the Livable Centers pedestrian/transit access improvements presented in Chapter 6 on each segment of the Navigation, Canal, Sampson, and York corridors, plus the side streets serving transit stops and other treatments. Other treatments would include traffic control signage, wayfinding signage, drainage rectification, and pedestrian access distributed throughout the study area related to improved safety and pedestrian access. Construction costs for the walkability elements of the H-GAC Livable Centers pedestrian/transit access project total \$12,992,774 of base costs (excluding contingency, standard soft costs, and fees) and \$16,917,125 of total costs (including contingencies, standard soft costs, and fees). Detailed itemized costs are presented in *Appendix E*.

<i>Table 11.1 – Livable Centers Pedestrian/Transit Access Improvements Cost Summary</i>		
<i>Corridor/Area</i>	<i>Base Cost</i>	<i>Total Cost*</i>
Navigation	\$1,519,332	\$1,975,132
Canal	\$1,981,366	\$2,575,776
Sampson	\$1,658,323	\$2,182,338
York	\$2,416,253	\$3,141,129
Side Streets	\$4,617,500	\$6,002,750
Other Treatments	\$800,000	\$1,040,000
<i>Total</i>	<i>\$12,992,774</i>	<i>\$16,917,125</i>
* Includes contingencies, standard soft costs, and fees.		

Guadalupe Park and Surrounding Area Construction Cost

The following cost estimates were prepared by Clark Condon Associates at the order of magnitude level appropriate for this level of design development for conceptual designs for Guadalupe Park and the surrounding area.

Table 11.2 – Guadalupe Park/Surrounding Area Construction Cost Summary by Phase	
Phase	Cost
1	\$6,289,310
2	\$6,000,000
3	\$17,740,000
4	\$2,500,000
Base Total	\$32,529,310
Total (Including Contingencies, Standard Soft Costs, Fees)	\$40,661,637

Table 11.3 delineates the base construction costs for Guadalupe Park and the surrounding area totaling \$32,529,310 (excluding contingency, standard soft costs, and fees), bringing the total construction cost to \$40,661,637 (including contingency, standard soft costs, and fees).

Table 11.3 – Guadalupe Park/Surrounding Area Construction Cost Estimates by Phase				
Item	Qty.	Unit	Unit Cost	Extension
PHASE 1				
Demolish Existing Park Facilities	131,000	SF	\$1	\$131,000
S. Jensen Drive Improvements	132,500	SF	\$30	\$3,975,000
Navigation Boulevard Median	22,800	SF	\$30	\$684,000
Plaza with Fountain	1	LS	\$1,275,000	\$1,275,000
Community Gardens	13,750	LS	\$10	\$137,500
Open Lawn	76,600	LS	\$0.35	\$26,810
Dog Park	30,000	LF	\$2	\$60,000
Subtotal				\$6,289,310
PHASE 2				
Navigation Streetscape with Intersection Reconfiguration	1	LS	\$6,000,000	\$6,000,000
Subtotal				\$6,000,000
PHASE 3				
TBH-Demo Existing/New Construction	1	LS	\$10,000,000	\$10,000,000
Visitor Center/Civic Building	30,000	SF	\$250	\$7,500,000
Park Development - Existing TBH Site	80,000	SF	\$3	\$240,000
Subtotal				\$17,740,000
PHASE 4				
Bridge over Navigation	1	LS	\$2,500,000	\$2,500,000
Subtotal				\$2,500,000
Total				\$32,529,310
General Conditions				\$3,252,931
Contingency (15%)				\$4,879,396
Total Construction Cost				\$40,661,637

Chapter 12 - Funding 12

This chapter presents the federal and state funding sources available for the capital improvements presented in this plan. Each source is described in terms of what its purpose is, which projects apply, and which elements of each can be funded. The FTA LCI will be used to fund this H-GAC Livable Centers project. This is followed by a presentation of the various sources of local match, how to capture and protect local value, and a discussion of the FTA LCI. Finally, this chapter includes a funding and phasing strategy to move the plan forward into implementation.

Capital Improvement Funding Strategies

There are several categories of federal and state funds for the implementation of the pedestrian/transit access corridors within the Greater East End that should be considered during the pursuit of funds to support both transit services and transit capital improvements. These include the following examples:

Congestion Mitigation and Air Quality (CMAQ) Improvement Program – The purpose of the CMAQ improvement program is to fund transportation projects or programs that contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone and carbon monoxide (CO). The construction of transit facilities, such as park & rides and terminals, is eligible for up to three years of federal assistance under CMAQ. In addition, the construction of bicycle and pedestrian facilities is eligible under CMAQ. CMAQ-funded projects are selected on a competitive basis by the area Metropolitan Planning Organization (MPO), in this case, H-GAC, on a semi-annual basis, in conjunction with the development of the three-year Transportation Improvement Program (TIP). The MPO reviews and ranks CMAQ project requests and recommends selections based on a variety of factors, including air quality benefits (cost per pound of pollutants reduced), system connectivity, environmental justice, and regional significance). Project readiness, which includes prior inclusion in the Regional Transportation Plan (RTP), local share commitment, completion of preliminary engineering, environmental analysis, and right-of-way acquisition also are prerequisites for full consideration. The CMAQ program is traditionally funded on an 80 percent federal/20 percent local basis. However, sponsors are able to improve project scores by increasing the percentage of local share participation.

Community Development Block Grants (CDBG) – CDBG has been the backbone of improvement efforts in many communities since 1974, providing a flexible source of annual grant funds for local governments nationwide. With the participation of their citizens, communities can devote these funds to a wide range of activities that best serve their own particular development priorities, provided that these projects (1) benefit low- and moderate-income families; (2) prevent or eliminate slums or blight; or (3) meet other urgent community development needs. As one of the nation's largest federal grant programs, the impact of CDBG-funded projects can be seen in housing stock, the business environment, streets, and public facilities in almost every community. Traditionally, the largest single use of state CDBG funds

has been the provision of public facilities. In the last few years, however, the program has played an increasingly key role in stimulating economic development activities that expand job and business opportunities for lower-income families and neighborhoods. The numerous eligible activities under this program include the construction of public facilities and improvements, such as streets, sidewalks, sewers, and water systems, parks, and community centers. However, states establish their own programs and rules to govern the distribution of their CDBG funds and establish many of the funding priorities for fund use. [Note: CDBG funds can be used to satisfy local share match requirements against other federal funding programs.]

FTA Section 5307 Urbanized Program – Capital and planning activities are eligible under the FTA Section 5307 Formula program at an 80% federal/20% local ratio. An example of capital expenditure would be the purchase of new transit vehicles or buses. Formula funds are utilized by Houston METRO for major rolling stock acquisition and capital construction, and would not likely be a leading funding alternative for the GEEMD Livable Centers Plan; however, if there are capital project elements of interest to both GEEMD and Houston METRO, FTA Section 5307 funds would be eligible for these elements.

FTA Section 5309 Discretionary Program – FTA’s Section 5309 Discretionary program provides funding on an 80% federal/20% local ratio to fund eligible transit capital needs, including pedestrian/transit access and streetscape improvements developed in accordance with LCI. Congress selects the FTA Discretionary funds during its annual Transportation Appropriations process and also every six years under the Transportation Reauthorization process. Applicants must be eligible FTA grantees, such as a county, municipality, municipal management district, or transit authority.

Federal Highway Administration (FHWA) Transportation and Community and System Preservation (TCSP) Program – FHWA’s TCSP program provides funding for grants and research to investigate and address the relationship between transportation and community and system preservation. Local governments are eligible for discretionary grants to plan and implement strategies that improve the efficiency of the transportation system, reduce environmental impacts of transportation, reduce the need for costly future public infrastructure investments, ensure efficient access to jobs, services, and centers of trade, examine development patterns, and identify strategies to encourage private sector development patterns that achieve these goals. Projects eligible for federal highway and transit funding or other activities, determined by the Secretary of Transportation to be appropriate, also are eligible for TCSP funding.

Statewide Transportation Enhancement Program (STEP) – The goal of STEP is to encourage diverse modes of travel, increase the community benefits to transportation investment, strengthen partnerships between state and local governments, and promote citizen involvement in transportation decisions. To be eligible for consideration, all projects must demonstrate a relationship to the surface transportation system through either function or impact, go above and beyond standard transportation activities, and incorporate one of the following categories:

- Provision of facilities for pedestrians and bicycles;
- Provision of safety and education activities for pedestrians and bicyclists;
- Acquisition of scenic easements and scenic and historic properties;

- Scenic or historic highway programs (including providing tourist and welcome center facilities);
- Landscaping and other scenic beautification;
- Historic preservation;
- Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals);
- Preservation of abandoned railway corridors (including the conversion and use for pedestrian and bicycle facilities);
- Control and removal of outdoor advertising;
- Archaeological planning and research;
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; and
- Establishment of transportation museums.

STEP is a statewide competitive program and is administered in accordance with applicable federal and state rules and regulations. Projects are submitted to the Texas Department of Transportation (TxDOT) and the MPO for review, and selected for funding by the Texas Transportation Commission. The funds provided by this program are on a cost reimbursement basis and is not a grant. Projects undertaken with enhancement funds are eligible for reimbursement of up to 80 percent of allowable costs. The government entity nominating a project is responsible for the remaining cost share, including all cost overruns.

FHWA Surface Transportation Program (STP) – STP provides flexible funding that can be used by states and localities for projects on any federal-aid highway, including the National Highway System, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. A portion of funds reserved for rural areas can be spent on rural minor collectors. STP is the largest FHWA flexible funds program. Funding is at 80 percent federal and may be used for all projects eligible for funds under current FHWA and FTA programs.

A state may obligate funds apportioned to it for STP only for the following eligible activities:

- Construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements for highways (including Interstate highways) and bridges (including bridges on public roads of all functional classifications), including construction or reconstruction necessary to accommodate other transportation modes, and including the seismic retrofit and painting of and application of calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and de-icing compositions on bridges and approaches thereto and other elevated structures, mitigation of damage to wildlife, habitat, and ecosystems caused by a transportation project funded under this program.
- Capital costs for transit projects eligible for assistance, including vehicles and facilities, whether publicly or privately owned, that are used to provide intercity passenger service by bus.

- Carpool projects, fringe and corridor parking facilities and programs, bicycle transportation and pedestrian walkways, and the modification of public sidewalks to comply with the Americans with Disabilities Act of 1990.
- Highway and transit safety infrastructure improvements and programs, hazard eliminations, projects to mitigate hazards caused by wildlife, and railway-highway grade crossings.
- Highway and transit research and development and technology transfer programs.
- Capital and operating costs for traffic monitoring, management, and control facilities and programs.
- Surface transportation planning programs.
- Transportation enhancement activities.
- Transportation control measures listed under the Clean Air Act.
- Development and establishment of management systems.
- Participation in natural habitat and wetlands mitigation efforts related to projects funded by this program, which may include participation in natural habitat and wetlands mitigation banks; contributions to statewide and regional efforts to conserve, restore, enhance, and create natural habitats and wetlands; and development of statewide and regional natural habitat and wetlands conservation and mitigation plans, including any banks, efforts, and plans authorized pursuant to the Water Resources Development Act of 1990.
- Infrastructure-based intelligent transportation systems capital improvements.
- Environmental restoration and pollution abatement projects (including the retrofit or construction of storm water treatment systems) to address water pollution or environmental degradation caused or contributed to by transportation facilities, which projects shall be carried out when the transportation facilities are undergoing reconstruction, rehabilitation, resurfacing, or restoration.

Local Share Match Funding Alternatives

There are several alternatives that exist to assist the City in meeting its local share funding requirements, as follows.

GEEMD Assessment/General Funds – GEEMD may choose to fund a portion of required local share match for the Livable Centers Plan within its own General Fund budget. For example, if a \$5 million capital program is desired, GEEMD could dedicate \$1 million of local share funds spread over a multi-year period. As there is not a corresponding Tax Increment Reinvestment Zone (TIRZ) overlay in the same area, GEEMD is limited to property assessments within the management district boundaries as a source for local share cash match. If, in the future, a “companion” TIRZ were created in the area, there would be an opportunity for GEEMD to partner with that entity to satisfy local share cash match requirements.

City of Houston General Fund or Capital Bond Fund Contributions – GEEMD may also wish to seek financial support from municipalities to meet local share requirements. For example, if the City of Houston proposes a new sidewalk project within the district with 100% local funds, these improvements could constitute local share match.

Land Value – For capital projects such as transit terminals, the value of land donated to the project can satisfy local share requirements. Land donations to a project could come from a developer, or other governmental entities.

Private Sector or Nonprofit Funds – GEEMD may also be able to partner with the private sector, or another nonprofit to satisfy local share requirements, as mutually beneficial opportunities arise.

State Transportation Development Credit (TDC) – A state may use toll revenues that are generated and used by public, quasi-public, and private agencies to build, improve, or maintain highways, bridges, or tunnels that serve the public purpose of interstate commerce as credit toward the non-federal share requirement for any funds made available to carry out eligible Department of Transportation-related capital projects. A transit authority or municipality may apply to TxDOT-Public Transportation Division for Transportation Development Credits in lieu of local share cash for eligible transit capital facilities projects. The Texas Transportation Commission is responsible for awarding State TDCs.

Community Development Block Grants (CDBG) – The CDBG program is the only federal funding program that can also be utilized as local match against other federal funds. Depending on state and local funding priorities, a portion of local share requirements could be funded through CDBG.

Just as the federal funding plan is flexible, so are the alternatives for local share funding. As a result, GEEMD has several alternatives to satisfy the local share match required.

Capturing and Protecting Local Value: FTA Letter of No Prejudice (LONP)

The LONP federal pre-award authority mechanism is a valuable tool to an FTA grantee. Under an approved LONP, an eligible capital project can be “protected” for federal reimbursement for up to five years. This tool allows local governments and transit authorities to advance project activities with local funds, building “local share” credit toward the overall project, and allowing for subsequent federal reimbursement should Discretionary, CMAQ, STEP, or other funds be made available. Examples of successful projects within the Houston-Galveston region that utilized the LONP mechanism include The Woodlands Town Center Pedestrian/Transit Corridor; Midtown *Pedestrian-Transit Masterplan*; Galveston Island Rail Trolley; and Galveston LCI. In order to receive an LONP, and protect its local investments, a project sponsor must meet FTA environmental clearance and advanced/preliminary engineering planning requirements, obtain approval of the LONP by the FTA Regional Office, and procure all bids for design, engineering, and construction in accordance with federal requirements, including advertisement for bids, Davis-Bacon wage rates in contractual documents, and debarment and lobbying certifications.

FTA Livable Communities Initiative: A Framework for Urban Design

FTA LCI guidelines provide a framework for the design of streetscape improvements that enhance transit and pedestrian user access to transit facilities and services. Under LCI, pedestrian and transit access improvements are eligible within a 500-foot radius of a transit stop and within a 1,500-foot radius of a transit terminal. Improvements, such as sidewalks, Americans with Disabilities Act (ADA) ramps, transit shelters, pedestrian-oriented lighting, street trees, and street furniture (benches and waste receptacles), are considered eligible by FTA for inclusion within a capital grant, if they demonstrate improved pedestrian/transit access. Although LCI does not have any specific funding source “attached” to it, the development of project components and qualification of costs in accordance with the program greatly enhances the fundability of a transit access-based urban revitalization effort.

LCI objectives include improving mobility and enhancing the quality of services available to residents of neighborhoods through use of the following:

- Strengthening the link between transit planning and community planning, including land use policies and urban design supporting the use of transit and, ultimately, providing physical assets that better meet community needs;
- Stimulating increased participation by community organizations and residents, minority and low-income residents, small and minority businesses, persons with disabilities, and the elderly in the planning and design process;
- Increasing access to employment and education facilities and other community destinations through high-quality, community-oriented, technologically innovative transit services and facilities; and
- Leveraging resources available through other federal, state and local programs.

Eligible project planning activities include the following:

- Preparation of implementation plans and designs incorporating LCI elements;
- Assessment of environmental, social, economic, land use and urban design impacts of projects;
- Feasibility studies;
- Technical assistance;
- Participation by community organizations, and the business community, including small and minority owned businesses, and persons with disabilities,
- Evaluation of best practices; and
- Development of innovative urban design, land use, and zoning practices.

Eligible capital activities or capital project enhancements of demonstration projects include the following:

- Property acquisition, restoration, or demolition of existing structures, site preparation, utilities, building foundations, walkways, and open space that are physically and functionally related to transportation facilities;

- Purchase of buses and enhancements to transit stations, park & ride lots, and transfer facilities incorporating community services such as daycare, health care, and public safety;
- Safety elements, including lighting, surveillance, and community police and security services;
- Site design improvements, including sidewalks, aerial walkways, bus access, and kiss & ride facilities; and
- Operational enhancements, including transit marketing and pass programs, customer information services, and advanced vehicle locating, dispatch, and information systems.

[Note that Congress has established independent financial appropriation to support LCI. Funding can be drawn from all Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) resources to meet LCI objectives.]

Phasing, Funding, and Implementation Plan

Strategic Requirements

A successful strategy for funding capital improvements under the federal paradigm must be premised on the following factors:

- Phased implementation of logical project sub-areas, segments or corridors over a reasonable period of time, such as five to seven years.
- Identification of potential federal funding resources, and timing for availability of such funds through various calls for projects at the regional level, or cyclical state or federal discretionary program opportunities. In some cases a given project or phase may be eligible for more than program.
- Identification and allocation of local share resources to be dedicated to meeting federal match requirements.
- Consensus by the local sponsor to commit move the program forward. This requires a multi-year commitment by the leadership of GEEMD to complete the implementation plan.

The table on the following page depicts the recommended phasing and funding plan for the GEEMD Livable Centers project. This approach is based on previous successful experiences by Houston area management districts in securing funding for pedestrian streetscape projects developed under FTA's LCI. In most cases, programmatic success is most likely to occur when project phases are broken down into costs of approximately \$2.5 million total. Streetscape projects of this magnitude are large enough to have a real world impact on the physical environment, and can be funded through MPO selected of federal discretionary resources. Similarly, keeping the local share requirement to a more manageable cash outlay for a municipal management district is also necessary. In some cases, State Transportation Development Credits can reduce the actual cash outlay of the local agency to \$0. The potential for utilizing American Recovery and Reinvestment Act (ARRA) also holds potential to reduce the net local share outlay to implement the program successfully.

Table 12.1 – Livable Centers Pedestrian/Transit Access Improvements Phasing and Funding Plan

<i>Phase</i>	<i>Description</i>	<i>Total Cost</i>	<i>Federal Funding Program</i>	<i>Federal Funding Share</i>	<i>Local Match</i>	<i>Local Share Source</i>
1	Navigation, Sampson (part), York (part)	\$4,863,730	ARRA	100%	0%	n/a
2	Sampson, York (balance)	\$2,434,869	ARRA II	100%	0%	n/a
3	Canal	\$2,575,776	Sec. 5309 Discretionary or CMAQ	80%	20%	Local Share Cash or State TDC
4	Side Streets Part 1	\$3,001,375	STP-TCSP	80%	20%	Local Share Cash or State TDC
5	Side Streets Part 2	\$3,001,375	STP-TCSP	80%	20%	Local Share Cash or State TDC
6	Other Treatments	\$1,040,000	Sec. 5309 Discretionary or CMAQ	80%	20%	Local Share Cash or State TDC
Total		\$16,917,125				
ARRA = American Recovery and Reinvestment Act CMAQ = Congestion Mitigation and Air Quality Improvement Program TDC = State Transportation Development Credits STP = Surface Transportation Program TCSP = Transportation and Community and System Preservation Program						

The proposed improvements in and around the area of Guadalupe Park present another set of considerations, as the total cost of improvements creates a considerable investment. Additionally, the type of improvements such as roadway and intersection reconfiguration fall outside the traditional FTA LCI, but would be eligible for traditional FHWA funds, in the STP and CMAQ categories. The pedestrian bridge could be funded through a 5309 Discretionary award, the FHWA TCSP program, or even with CMAQ funds if the net air quality benefits proved to be substantial enough.

Although some of the park improvements, such as pathways within 500 ft. of a transit stop, could be eligible for federal assistance under the FTA LCI, there is also an opportunity for local municipal investment, through the City of Houston's Capital Improvement Program (CIP), in the Guadalupe Park area to serve as local share leverage against all federal funds that could be brought to bear in the Livable Centers program. There are some limited urban park grant opportunities through the Texas Parks and Wildlife Department (TPWD); however, grants are limited to \$500,000. The federal urban parks program known as the Urban Park and Recreation Recovery (UPARR) has been suspended since 2002. Future funding of UPARR is dependent upon future Congressional and Executive Branch support, and at this time should not be considered. Another funding opportunity could be in obtaining a private foundation funding award for at least a portion of park improvements.

Table 12.2 – Guadalupe Park/Surrounding Area Improvements

<i>Phase</i>	<i>Description</i>	<i>Total Cost</i>	<i>Federal/ State Funding Program</i>	<i>Federal/ State Funding Share</i>	<i>Local Match Requirement</i>	<i>Local Share Source</i>
1	Guadalupe Park Phase 1	\$1,000,000	TPWD (Urban Outdoor Recreation Program)	\$500,000 (maximum)	50%	GEEMD, COH, or Foundation
1	Guadalupe Park Phase 2	\$5,289,310	n/a	n/a	n/a	COH CIP or Foundation
2	Navigation Streetscape/ Intersection Impvts	\$6,000,000	STP or CMAQ	80%	20%	COH CIP
3	Visitor Center /Civic Bldg	\$17,740,000	N/A	n/a	n/a	COH CIP or Foundation
4	Bridge over Navigation	\$2,500,000	STP, CMAQ, Sec. 5309, or TCSP	80%	20%	GEEMD or COH CIP
	Total	\$32,529,310*				
TPWD = Texas Parks and Wildlife Department COH = City of Houston CIP = Capital Improvement Program * General conditions and contingency increases this total to \$40,661,637.						

Appendices

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Appendix C – Project Area Accident Record

Appendix D – Public Meetings

Appendix E – Livable Centers Analysis Spreadsheet

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Neighborhood Revitalization

The challenges facing the East End include low-quality housing stock; sidewalks and other pedestrian amenities in disrepair or missing entirely; conflicts between land uses; and an abundance of vacant land and other underutilized property. However, these challenges are not unprecedented. Numerous communities nationwide have faced similar circumstances and have, in response, developed and implemented revitalization plans specific to their communities. Conducting a peer review of several such plans is useful in identifying proven tools and strategies that can be applied in the East End. Five revitalization plans that are particularly applicable were examined. These plans include efforts to improve the community's streetscape, housing, roads, parks, and other community improvement efforts similar to ones that might be undertaken in the East End.

The overall goal of any revitalization plan is ultimately to improve the community's quality of life via a process that considers the needs of residents and other community stakeholders. Typically, the process entails five main elements: initiation, organization, resources, action, and results.

Key activities taking place at each of these stages are as follows:

- **Initiation** – Consensus building involving all stakeholder groups.
- **Organization** – Seeking assistance from consulting groups, area commerce, elected officials, and any existing community partnerships to allow for guidance in constructing public meetings and developing community focus group meetings.
- **Resources** – Investigating and applying for local, state, and federal funding opportunities that will enhance redevelopment efforts.
- **Action** – Creating a task force/advisory committee to assist with implementing plans. Gathering community input by offering opportunities for citizens to participate in design workshops, map-making exercises, and focus group meetings.
- **Results** – Implementing revitalization plan.

Initiation

The initiation stage kicks off the revitalization process by identifying those needs and issues the community would like to see addressed. It normally involves various members of stakeholder groups. In the example revitalization plans, members have included the following:

- City Planning Department
- Community Residents
- Local Housing Authority
- Resident Council
- City Council
- Advisory Committee
- County Commissioners
- Chamber of Commerce

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The following case studies present the ways in which these stakeholders have initiated the revitalization process.

1. **Johnson Downtown Revitalization Plan.** In Johnson, Nebraska, the Johnson Strategic Planning Committee, along with the Village Board, devised a plan to revitalize the downtown area. The deteriorating condition of the area was evident in the damaged streets, cracked sidewalks, insufficient streetlights, and inadequate surface drainage. The plan involved conducting a study to evaluate the current condition and to establish recommendations for renovations.
2. **Ord Street Improvements.** The Ord City Council in Nebraska initiated a multi-phase plan in 2001 to improve the city's infrastructure due to the poor condition of streets and bridges.
3. **City of Bassett Street Improvements.** The Bassett City Council in Nebraska initiated the plans to improve its streets, sewers, water mains, curbs, and gutters.
4. **Kennedy Street Revitalization Plan.** The District of Columbia's Office of Planning initiated the community planning process for the Kennedy Street corridor. The community residents and stakeholders were invited to participate in the process to develop a strategy for improving the economic vitality and overall image of the corridor as an attractive destination for residents, business owners, and visitors.
5. **Barry Farm, Park Chester, Wade Road Redevelopment Plan.** The District of Columbia, in collaboration with the residents of the Barry Farm, Park Chester, and Wade Road communities, initiated a process to plan for and implement the revitalization of the area's low income properties and the surrounding neighborhood. Shaped by the residents, community stakeholders, city agencies, and public officials the redevelopment plan for the future aims to protect and expand affordable housing, empower families with the tools to become self-sufficient, and preserve existing community assets and provide for those needed.

The purposes associated with the initiation of developing a revitalization plan include the following:

1. **Johnson Downtown Revitalization Plan.** Accommodate anticipated growth, economic development, and physical enhancement while preserving the community by establishing goals and objectives for the area.
2. **Ord Street Improvements.** Improve city streets by replacing streets and bridges.
3. **City of Bassett Street Improvements.** Enhance the appearance of city street structures.
4. **Kennedy Street Revitalization Plan.** Guide growth and development while preserving and enhancing the quality of life in the surrounding community.
5. **Barry Farm, Park Chester, Wade Road Redevelopment Plan.** Improve residents' quality of life by addressing both the physical and human architecture of the community. By protecting affordable housing, empowering families with the tools to become self-sufficient, and enhancing community assets.

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Organization

The organization stage of the revitalization process brings in additional stakeholder groups, often in the private sector, that seek to improve the economic vitality of a community. Some of the organizations that are involved include the following:

- Business and Property Owner Groups
- Advisory Neighborhood Commissions
- Office of the Ward Council members
- District Groups
- Civic Associations/Groups
- Tenant Organizations
- Faith-Based Organizations/Pastors
- Public/Private Developers



The ways in which these organizations and groups have taken part in the revitalization process are shown in the following case studies.

1. **Johnson Downtown Revitalization Plan.** The Village of Johnson looked to the team of Sinclair Hille Architects and Olmsted & Perry Consulting Engineers to conduct the study and provide recommendations. The study was conducted to evaluate the current condition and to establish recommendations for renovations.
2. **Ord Street Improvements.** The Ord City Council evaluated the current conditions of the city's streets, then identified and prioritized those streets needing improvements. The city council also organized the mailing of income surveys to those property owners who would be assessed for the paving costs and filed an application for CDBG funding to pay the special assessments of the low income homeowners and occupants.
3. **City of Bassett Street Improvements.** Several stakeholders participated in the success of the city's street improvements including the mayor, city clerk, economic development coordinators, and chamber of commerce officials. In addition, the City of Bassett received help from the Bassett/Rock County Chamber of Commerce and CDBG funds were administered through the Nebraska Department of Economic Development, the Nebraska Department of Roads grant and the JEO Consulting Group.
4. **Kennedy Street Revitalization Plan.** The plan's advisory committee represented the many voices and many communities that comprise the Kennedy Street neighborhood. Members continually underscored the value that residents, business owners, and others place in sustaining the corridor's existing social fabric, and in making sure that revitalization happen without displacement of current residents or businesses. They worked assiduously with the consulting team and representatives of the City's Office of Planning to identify specific strategies that strengthen that fabric while identifying opportunities for physical improvements, for carefully-sited new development –

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residential, retail, mixed use – that at the same time would be in keeping with the neighborhood’s existing scale and overall accessibility.

5. **Barry Farm, Park Chester, Wade Road Redevelopment Plan.** The advisory committee worked with the District to organize the redevelopment Plan. The advisory committee was comprised of 36 members and included residents of all the developments within the site area, community stakeholders, clergy, and youth. The advisory committee conducted bi-weekly meetings throughout the planning process. Over the course of the summer, subcommittees of the larger group were established to focus on specific issues.

Resources

The success of any revitalization plan hinges on the identification and capture of financial resources to implement it. Resources used by the communities studied include various local, state, and federal funds available to support redevelopment efforts. Some of the programs that are available to promote revitalization include the following:

- ***Community Development Block Grant (CDBG)*** – Funding programs that provide communities with resources to address a wide range of unique community development needs. These funds are available to each state based on a statutory formula which takes into account population, poverty, incidence of overcrowded housing, and age of housing. These funds can be used for acquisition of property for public purposes; construction or reconstruction of streets, water and sewer facilities, neighborhood centers, recreation facilities, and other public works; demolition; rehabilitation of public and private buildings; public services; planning activities; assistance to nonprofit entities for community development activities; and assistance to private, for-profit entities to carry out economic development activities.
- ***Housing Trust Fund*** – Funds established by cities, counties, and states that dedicate sources of revenue to support affordable housing. Eligible applicants for these funds include nonprofit and private developers, Native American tribes, regional entities, jurisdictions, housing authorities, and other entities. These funds can be used for acquisition, new construction, rehabilitation, emergency repairs, housing-related services, adaptive re-use, accessibility modifications and more. While less common, some trust funds make dollars available for rental assistance (including emergency assistance), foreclosure prevention, and other needs. Some housing trust funds focus on serving the needs of the homeless. Many encourage mixed-income and mixed-use developments, requiring that funds be used for projects (or the portion of a project) that address the needs of lower income households.
- ***Low-Income Tax Credits*** – These tax credits provide investors of affordable rental housing with a benefit that is used to offset a portion of their federal tax liability in exchange for the production of affordable rental housing.
- ***Contribution of Public Land*** – The donation of land that is not in use.

The following case studies present the ways in which resources are used to support revitalization plans.

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1. **Johnson Downtown Revitalization Plan.** The Village of Johnson received support from the Nebraska Department of Economic Development (DED) for assistance in funding the plan. Johnson applied for funding through CDBG, which is administered by DED, and was awarded a CDBG in the amount of \$25,000 in the planning category by Governor Mike Johannis. This grant was matched with \$8,400 in local funds. Johnson also was awarded \$249,700 in CDBG funds in the public works category. Along with the CDBG funds, the project will be funded by \$234,700 in local funds. The CDBG award will fund the renovation of walkways, retaining walls, streets, surface drainage, water mains, and sewer lines.
2. **Ord Street Improvements.** City officials applied for and received a CDBG in 2001 to replace five deteriorating bridges east of the city with concrete box culverts. The neighborhood in which the bridges are located qualified for funding since 73 percent of the area's property owners are low- and middle-income wage earners. The City was awarded \$216,500 in CDBG funds in 2002 to improve deteriorating asphalt streets that needed paving.
3. **City of Bassett Street Improvement Plans.** In 2001, the City applied for and received \$249,500 in CDBG funds for needed improvements. Grant funds, along with revenue from sales tax and general funds, were used to install a larger water main, improve a storm sewer, construct new curbs and gutters, and repave and level the sidewalks and streets. A local grant from the Nebraska Department of Roads allowed the City to install new light posts along the sidewalks.
4. **Barry Farm, Park Chester, Wade Road Redevelopment Plan.** While this plan does not offer financial support for the project, funding is projected to come from the following sources:
 - a. The Housing Authority will apply *land proceeds* of the Barry Farm site toward public housing replacement. On other District-owned sites (e.g., Poplar Point and St. Elizabeth's East Campus), the District will contribute its land for new development to subsidize the private development of units affordable to low-income households.
 - b. *Tax Increment Financing (TIF)* will be used for projects with high infrastructure costs, those that create significant public benefit, and those that will result in significant new taxes. The proposed development program in that District will create a new tax base that could generate an estimated \$234,000 per year in tax revenues to support up to \$4.2 million in TIF bonds.
 - c. *CDBG funding* supports housing and other programs that benefit low- and moderate-income residents. Uncommitted CDBG funds may be used for the Barry Farm/Park Chester/Wade Road redevelopment through direct funding or such programs as the Section 108 Loan Guarantee program.
 - d. District of Columbia government authorized the use of \$12 million of *Housing Production Trust Fund* to support bond financing issued by the District in support of the New Communities Initiatives.
 - e. The District Council authorized *Payment in Lieu of Taxes (PILOT)* financing in 2004. Similar to Tax Increment Financing, PILOT financing earmarks the

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incremental new taxes created by development on previously tax-exempt property to fund repayment of bonds. The new development will generate \$1.1 million in new annual taxes from these properties and could support up to \$10.4 million in capital funds.

Action

The action stage is where “the rubber meets the road” in the revitalization process. It includes a consensus-building element that considers the planning and promotion of how the residents, stakeholder groups, the public, the state, and local politicians are provided opportunities to participate in the process. In the example revitalization plans, several communities used the following public involvement components:

- Public Workshops/Charrettes
- Community-wide Design Workshops
- Participant Observations

The following case studies present the ways in which public involvement has taken place in the action step of the revitalization process:

1. **Johnson Downtown Revitalization Plan.** The Johnson Strategic Planning Committee, along with the Village Board, devised a plan to revitalize the downtown area. The plan involved conducting a study to evaluate existing conditions and to establish recommendations for renovations.
2. **Kennedy Street Revitalization Plan.** The public workshops/community-wide design workshops allowed residents to participate in the planning process by making recommendations for improvement of their communities. During a walk-about observations were made by participants that reinforced many of the comments and recommendations discussed during community workshops. Participants pinpointed specific places or addresses that required attention if the goal of achieving and maintaining a “clean and safe” Kennedy Street was to be realized. Participants also marked on their maps the need for transparent storefronts, improved landscaping, increased pedestrian safety, and attention to trash and graffiti.
3. **Barry Farm, Park Chester, Wade Road Redevelopment Plan.** The public workshops/charrettes consisted of one-on-one meetings, walking tours, and bus tours to establish a working knowledge of the neighborhood and to inform the advisory committee on other similar redevelopment projects. A series of five resident training sessions, led by the project’s consultants, were held to focus on specific aspects of the planning process. A five-day design workshop was held and was open to the public from morning until early evening, allowing residents to provide input into the development of the neighborhood’s physical and human capital plans. The planners, architects, development advisors, and district representatives were present throughout the five days.



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In addition to these components, other activities to consider in the action stage of a revitalization plan include the following:

- Collaboration with advisory committee, staff, and community to develop plan
- Advisory meeting
- Meeting with business community
- Concept workshop
- Public meeting-concept plan
- Advisory sub-area plan
- Planning/County Commission review
- District group meetings
- Existing conditions analysis
- Land use and business development strategies
- Urban design and plan implementation
- Final redevelopment plan

In order for the action stage to take place, the advisory committee, local planning officials, and neighborhood associations will promote the planning process by holding public meetings and inviting citizens to participate. In the example of the Kennedy Street Revitalization Plan, the District of Columbia's Office of Planning maintained the order of each meeting and provided opportunities for the public to comment on projected plans to improve their community.

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Results

The overall results, or accomplishments, that can be achieved in the revitalization process are plans designed and prepared in accordance with neighborhood goals and objectives. The results will provide the necessary planning guidance to assure proper growth and controlled development. These plans will address improvements related to the following:

- Housing
- Safety
- Streetscapes
- Building infrastructures
- Parks and open spaces preservation
- Infill development
- Pedestrian-oriented designs
- Mixed-use redevelopment

Results that have occurred in the revitalization process are shown in the case studies presented above.

1. **Johnson Downtown Revitalization Plan.** Using federal and local funds, the Village of Johnson was able to perform several improvements:
 - a. Replaced sections of sidewalks, curbs, curb walls, and streets.
 - b. Widened sidewalks and walkway ramps to bring downtown into compliance with Americans with Disabilities Act (ADA) regulations.
 - c. Replaced main and service water lines to individual businesses.
 - d. Enhanced area aesthetics by installing ornamental light poles, fences, railings, and furnishings.
2. **Ord Street Improvements.** Bridges were replaced and street construction was completed in 2001 and 2003, respectively.
3. **City of Bassett Street Improvements.** Before the City received CDBG funds to make the needed repairs, the concrete was uneven and broken, curbs were too high, access ramps were missing, street gutters were not properly aligned, and storm water drained improperly. Now citizens and visitors can enjoy new sidewalks, curbs and gutters, storm sewers, and improved streets.



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Challenges

Challenges that may be encountered during the revitalization process include the following:

- **Site constraints** – some sites may not be conducive to improvements.
- **Funding complications** – a combination of public and private funds may be needed to implement plans.
- **Infrastructure deficits** – buildings, housing, and other sites may require extensive improvements in order to accommodate new uses.
- **Public and political opposition** – everyone may not support improvement plans. However, leadership from city government and business owners may be able to persuade a change of mind.

Conclusion

The peer review identified several communities across the country that have encountered challenges similar to those currently facing the East End. The revitalization efforts undertaken by these communities include the following common steps: initiation, organization, resources, action, and results. The East End can benefit from emulating the proven steps these communities have taken. In particular, the East End should initiate a revitalization effort by attempting to build consensus among stakeholders; further organize the effort by seeking the assistance of consultants, elected officials, area commerce, and others; investigate and apply for local, state, and federal funding to finance the plan's elements; create a task force/advisory committee to guide the revitalization effort; and implement the plan.

Appendix B – Ridership Data



Route #	Stop Location	Stop #	Direction	Boardings	Alightings	Total Activity
77	Navigation @ Canal	1236	NB	14	24	38
77	Jensen @ Navigation	1428	NB	24	20	44
77	Jensen @ Kennedy	1429	NB	8	24	32
77	Jensen @ Shiloh	1430	NB	8	4	12
77	Jensen @ Bryan	1425	SB	4	2	6
77	Jensen @ Foote	1426	SB	1	0	1
77	Jensen @ Ann	1427	SB	29	17	46
77	Navigation @ Jensen	353	SB	8	12	20
77	Navigation @ Canal	1261	SB	16	19	35
6	Jensen @ Bryan	1425	SB	1	4	5
6	Jensen @ Foote	1426	SB	2	0	2
6	Jensen @ Ann	1427	SB	12	16	28
6	Navigation @ Jensen	353	SB	5	15	20
6	Navigation @ Canal	1261	SB	14	11	25
6	Navigation @ Canal	1236	NB	14	5	19
6	Jensen @ Navigation	1428	NB	32	5	37
6	Jensen @ Kennedy	1429	NB	5	5	10
6	Jensen @ Shiloh	1430	NB	2	1	3
20	Canal @ Sampson	1255	WB	43	17	60
20	Canal @ Palmer	1256	WB	16	17	33
20	Canal @ Paige	1257	WB	12	9	21
20	Canal @ Delano	1258	WB	9	9	18
20	Canal @ St Charles	1259	WB	9	9	18
20	Canal @ Navigation	1260	WB	16	30	46
20	Navigation @ Canal	1261	WB	9	6	15
20	Canal @ Navigation	1237	EB	47	28	75
20	Canal @ St Charles	1238	EB	12	12	24
20	Canal @ Delano	1239	EB	19	11	30
20	Canal @ Paige	1240	EB	1	14	15
20	Canal @ Palmer	1241	EB	10	10	20

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<i>Route #</i>	<i>Stop Location</i>	<i>Stop #</i>	<i>Direction</i>	<i>Boardings</i>	<i>Alightings</i>	<i>Total Activity</i>
20	Canal @ Sampson	1242	EB	19	24	43
29	York @ Harrisburg	9754	NB	12	17	29
29	York @ Garrow	11353	NB	1	4	5
29	York @ Sherman	9755	NB	2	2	4
29	York @ Canal	9756	NB	7	22	29
29	York @ Engelke	9757	NB	29	40	69
29	York @ Fox	1442	NB	16	10	26
29	York @ Ball	1443	NB	0	4	4
29	York @ Clinton	1444	NB	2	10	12
29	Hirsch @ Clinton	1439	SB	5	5	10
29	York @ Ball	1440	SB	2	0	2
29	York @ Fox	1441	SB	1	32	33
29	Sampson @ Engelke	9739	SB	63	19	82
29	Sampson @ Canal	9740	SB	22	12	34
29	Sampson @ Sherman	9741	SB	2	2	4
29	Sampson @ Preston	9742	SB	0	2	2
30	Navigation @ Canal	1236	NB	9	15	24
30	Jensen @ Navigation	1428	NB	18	12	30
30	Jensen @ Kennedy	1429	NB	1	19	20
30	Jensen @ Shiloh	1430	NB	10	3	13
30	Clinton @ Jensen	354	NB	2	3	5
30	Clinton @ Meadow	355	NB	0	1	1
30	Clinton @ Bayou	356	NB	3	9	12
30	Clinton @ Gregg	357	NB	0	5	5
30	Clinton @ Bringhurst	358	NB	0	1	1
30	Clinton @ Bringhurst	359	NB	0	7	7
30	Clinton @ Bringhurst	360	NB	2	7	9
30	Clinton @ Hirsch	361	NB	4	11	15
30	Clinton @ Judd	388	SB	5	1	6
30	Clinton @ Judd	389	SB	6	1	7
30	Clinton @ Judd	390	SB	1	1	2

Appendix B – Ridership Data

Route #	Stop Location	Stop #	Direction	Boardings	Alightings	Total Activity
30	Clinton @ Bringham	391	SB	4	1	5
30	Clinton @ Gregg	392	SB	2	1	3
30	Clinton @ Bayou	393	SB	11	6	17
30	Clinton @ Meadow	394	SB	1	0	1
30	Clinton @ Meadow	395	SB	1	4	5
30	Jensen @ Bryan	1425	SB	1	10	11
30	Jensen @ Foote	1426	SB	1	0	1
30	Jensen @ Ann	1427	SB	37	5	42
30	Navigation @ Jensen	353	SB	26	0	26
30	Navigation @ Canal	1261	SB	23	4	27
37	Jensen @ Bryan	1425	EB	0	1	1
37	Jensen @ Foote	1426	EB	0	0	0
37	Jensen @ Ann	1427	EB	19	23	42
37	Navigation @ Jensen	353	EB	1	1	2
37	Canal @ Navigation	1237	EB	16	7	23
37	Canal @ St Charles	1238	EB	6	1	7
37	Canal @ Delano	1239	EB	4	4	8
37	Canal @ Paige	1240	EB	1	0	1
37	Canal @ Palmer	1241	EB	6	3	9
37	Canal @ Sampson	1242	EB	5	14	19
37	Canal @ Sampson	1255	WB	21	14	35
37	Canal @ Palmer	1256	WB	1	0	1
37	Canal @ Paige	1257	WB	1	7	8
37	Canal @ Delano	1258	WB	4	1	5
37	Canal @ St Charles	1259	WB	5	10	15
37	Canal @ Navigation	1260	WB	7	26	33
37	Jensen @ Navigation	90114	WB	0	0	0
37	Jensen @ Navigation	1428	WB	16	12	28
37	Jensen @ Kennedy	1429	WB	11	12	23
37	Jensen @ Shiloh	1430	WB	0	0	0

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Route #	Stop Location	Stop #	Direction	Boardings	Alightings	Total Activity
48	Navigation @ Canal	1236	EB	4	3	7
48	Navigation @ St Charles	9782	EB	5	0	5
48	Navigation @ Nagle	9784	EB	0	2	2
48	Navigation @ Delano	9785	EB	1	5	6
48	Navigation @ Ennis	9786	EB	0	3	3
48	Navigation @ Palmer	9787	EB	0	2	2
48	Navigation @ Sampson	9788	EB	9	22	31
48	Navigation @ York	410	WB	2	3	5
48	Navigation @ Engelke	411	WB	51	3	54
48	Navigation @ Palmer	412	WB	2	2	4
48	Navigation @ Ennis	413	WB	1	0	1
48	Navigation @ Delano	414	WB	2	0	2
48	Navigation @ Live Oak	415	WB	2	3	5
48	Navigation @ St Charles	416	WB	1	15	16
48	Navigation @ Jensen	353	WB	1	9	10
48	Navigation @ Canal	1261	WB	8	2	10
50	Harrisburg @ Middleton	1215	EB	15	34	49
50	Harrisburg @ Velasco	1216	EB	5	9	14
50	Harrisburg @ Sampson	10968	EB	14	3	17
50	Harrisburg @ York	1217	EB	15	7	22
50	Harrisburg @ York	10967	WB	14	23	37
50	Harrisburg @ Sampson	1228	WB	6	5	11
50	Harrisburg @ Velasco	1229	WB	5	6	11
50	Harrisburg @ Middleton	1230	WB	15	9	24
50	Harrisburg @ Delano	1231	WB	1	10	11
11	Runnels @ Chartres	9798	NB	30	56	86
11	Runnels @ Lottman	9799	NB	0	5	5
11	Jensen @ Navigation	1428	NB	15	34	49
11	Jensen @ Kennedy	1429	NB	7	16	23
11	Jensen @ Shiloh	1430	NB	0	3	3
11	Jensen @ Bryan	1425	SB	1	1	2
11	Jensen @ Foote	1426	SB	0	0	0
11	Jensen @ Ann	1427	SB	37	16	53
11	Runnels @ Lottman	9796	SB	14	16	30
11	Runnels @ Jensen	9797	SB	71	18	89

Appendix C – Project Area Accident Record



Project Area Automobile Accidents Jan to Sep 2008

<i>Incident#</i>	<i>Date/time</i>	<i>Beat</i>	<i>Block</i>	<i>Street</i>	<i>Intersect Street</i>
0033441408K	3/6/08 16:30	10H10	2100	CANAL	
0063204608U	4/30/08 16:45	10H10	2104	CANAL	
0044094108P	3/26/08 16:16	10H10	2800	CANAL	
0012929608G	1/27/08 15:10	10H10	2821	CANAL	
0079143308B	5/30/08 0:00	10H10		CANAL	NAVIGATION
0064314808U	5/2/08 12:55	10H10		CANAL	DELANO
0002373408S	2/15/08 22:25	10H10	2400	COMMERCE	
0113656108F	8/5/08 16:30	10H10	2700	COMMERCE	
0064575708D	5/2/08 21:10	10H10	3100	COMMERCE	
0077754108T	5/27/08 12:45	10H10	2800	HARRISBURG	
0046026808Y	3/30/08 1:25	10H10	3000	HARRISBURG	
0038650708Z	3/16/08 9:25	10H10	3000	HARRISBURG	
0004026108V	1/8/08 8:00	10H10	3000	HARRISBURG	
0007231608S	1/15/08 16:45	7C10	100	JENSEN	
0121542308J	8/21/08 7:35	10H10	200	JENSEN	
0139347208K	9/21/08 14:11	10H10	300	JENSEN	
0059517108N	4/23/08 18:05	10H10	2300	NAVIGATION	
0002586308B	1/6/08 6:20	10H10	2300	NAVIGATION	
0029458308L	2/28/08 7:30	10H10	3100	NAVIGATION	ROBERTS
0068196008O	5/9/08 13:50	10H10	3306	NAVIGATION	
0092489708H	6/24/08 10:30	10H10	3400	NAVIGATION	
0076307808M	5/24/08 14:34	10H10	3400	NAVIGATION	
0064398108V	5/5/08 15:58	10H10		NAVIGATION	CANAL
0118411908J	8/14/08 23:30	10H10	1800	RUNNELS	
0093730308L	6/26/08 22:15	10H10	1900	RUNNELS	
0140109208M	9/22/08 6:20	10H10	1919	RUNNELS	
0010901508F	1/23/08 14:00	10H10	1919	RUNNELS	
0069026908D	5/10/08 23:00	10H10	2000	RUNNELS	
0105546008Y	7/20/08 11:20	10H10	2115	RUNNELS	
0077903008A	5/27/08 17:51	10H10		RUNNELS	CHARTRES

Accidents Involving a Pedestrian

<i>Incident#</i>	<i>Date/time</i>	<i>Beat</i>	<i>Block</i>	<i>Street</i>	<i>Intersect Street</i>	<i>Accident Involving</i>
0046026808Y	3/30/08 1:25	10H10	3000	HARRISBURG		Pedestrian
0010901508F	1/23/08 14:00	10H10	1919	RUNNELS		Pedestrian
0140109208M	9/22/08 6:20	10H10	1919	RUNNELS		Pedestrian
0036597508H	3/12/08 19:00	10H10		SAMPSON	SHERMAN	Pedacyclist

Appendix D – Public Meetings



First Advisory Committee Meeting

The first Advisory Committee meeting, held October 7, 2008, was designed to introduce the members to the project and the project team and to solicit community concerns and priorities. The agenda included project team member introductions, project tasks and schedule, street assessments accomplished to date, streetscape examples, land use improvements, identification of community concerns, and a discussion of how to fund improvements.

A total of 13 committee members attended the first meeting representing City and County elected officials, land developers, Houston East End Chamber of Commerce, and community organizations such as Buffalo Bayou, The Park People, Neighborhood Centers Ripley House, Second Ward Super Neighborhood, METRO Solutions East End Corridor, low-income housing development, and TxDOT. In addition to representatives of GEEMD, a representative of the H-GAC Livable Centers Group participated.



Advisory Committee members offered input on a variety of points including the initial GEEMD project goal of creating a sense of place in this part of the Greater East End and recent improvements that positively impacted auto theft crime incidences. Members raised concerns about development of vacant areas for family recreation; commission planning changes in parking and highway access out of the East End; and incorporating areas outside the project area boundaries. Members noted area features not on the project map including pocket parks, the planned Columbian Tap Trail extension to Buffalo Bayou, and the soccer stadium just outside the boundary, as well as the proposed Elysian Boulevard and the future of Jensen Street Bridge. It was suggested that the Houston Urban Corridor Project treatment plans be researched and considered for similar treatments in the Greater East End. Stakeholders also reported that FTA dedicated \$10 million to Hike & Bike Trails in the area and added that TxDOT was allowing great flexibility in the use of these funds.



Appendix D – Public Meetings

Public Meeting #1

A series of three public meetings were held throughout the assessment and the conceptual design process in the evening for the general public. The public meeting dates were November 11, 2008, February 5, 2009, and March 26, 2009. The first public meeting was held Tuesday, November 11, 2008, from 6:00 p.m. to 7:30 p.m.

Invitees included all identified stakeholders of the project area including representatives of the Second Ward Super Neighborhood, Houston East End Chamber of Commerce, Buffalo Bayou Partnership, The Park People, Talento Bilingue de Houston, Ripley House, and local businesses, churches, and schools. Publicity targeted project area residents through the flyer distribution at Ripley House Neighborhood Center and the four largest multi-unit housing developments. Publicity flyers were provided in English and Spanish.

The meeting was presented in an open house format giving stakeholders more schedule flexibility and opportunity to ask team members questions one on one. The purpose of the first open house was to explain the project and solicit community concerns and priorities for the project area. Comment forms were provided in English and Spanish.

A total of 27 people attended the open house. Primary concerns submitted were the infrastructure type improvements related to safety including lighting, crime prevention, and installing sidewalks.




Second Advisory Committee Meeting

The second Advisory Committee meeting was held Thursday, November 20, 2008, at the GEEMD offices. A total of 11 members participated from staffs of City and County elected officials, representatives of land development and community organizations including Buffalo Bayou, The Park People, Neighborhood Centers Ripley House Neighborhood Center, Second Ward Super Neighborhood, METRO Solutions East End Corridor, and low-income housing development. In addition to representatives of GEEMD, representatives of the H-GAC Livable Centers Group participated. The agenda included reporting on input from the first public meeting, presenting an updated draft master plan, reporting findings on corridor needs, treatments priorities, and costs, and apprising the committee of developments in acquiring funding to implement the improvements.



Appendix D – Public Meetings


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HOUSTON CHRONICLE ARCHIVES

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Transportation study aims to improve mobility, livability in Greater East End

By ROBIN FOSTER, HOUSTON CHRONICLE CORRESPONDENT

Houston's Second Ward is ready to reinvent itself, and residents hope a \$150,000 transportation study grant will provide the path to a more "livable center."

The study's aim is to identify projects that will qualify for public funds and also attract redevelopment in one of Houston's oldest communities, where industry abuts greenspace along Buffalo Bayou and where streets and other infrastructure tend to crowd out pedestrians and cyclists.

With two Metropolitan Transit Authority of Harris County light-rail lines planned for the area, residents now want more ways to reach those lines from their homes, bus stops, workplaces and local parks.

"I drive, but I am looking forward to parking my car," said Jessica Hulsey, who chairs the recently-formed Second Ward Super Neighborhood Council.

"I'm desperate for light rail, and my 21-year-old who attends the UH Central Campus, she's also waiting for it."

Entities can co-exist

Grant partners Houston-Galveston Area Council and Greater East End Management District have hired The Goodman Corp., 3200 Travis St., Suite 200, to help the area achieve a new sense of place.

"The neighborhoods belong here, the industries belong here. We're going to try and make them good neighbors," said Carl Sharp, Goodman's vice president of planning and urban design.

At a community open house Nov. 11 at Ripley House, 4410 Navigation Blvd., about three dozen residents got a look at the study's progress since it was launched two months ago and provided feedback.

Goodman has contracted architectural firms Clark Condon Associates, Brave/Architecture and Cooper Carry Associates for part of the work.

The consultants showed maps of key transportation routes and design images that can help unify public spaces.

Sharp said inventories are being made of things like quality-of-life features, walkability, truck and auto traffic as well as planned public and private development. The information will help planners separate pedestrian and well-used bus stops from heavy traffic areas and identify where sidewalk, signage, street and lighting improvements are needed, he said.

"Livable centers" are part of HGAC's strategy to accommodate growth in the eight-county Houston-Galveston region. The agency predicts the area's population to grow by 3.5 million people by 2035.

Funds for the study originate with the Federal Highway Administration, said Meredith Dang, a land use transportation coordinator with HGAC.

Appendix D – Public Meetings

The grant award is through the Texas Department of Transportation.

Hedy Wolpa, program director for the management district, said that of six similar grants awarded in the multi-county area, this one for the East End was singled out for "its great potential to make a big difference very quickly."

Two more community meetings will be held before the study is completed.

The next meeting on Feb. 5, 2009, will aim to prioritize the mobility improvements residents want, Wolpa said.

Longtime coming

Gloria Moreno, a precinct judge in Second Ward, said the attention is long overdue.

"I've been pretty vocal about what the needs are in terms of way-finding and pedestrian use," said Moreno, whose family has lived in the area since the 1930s. Her grandparents helped lay the cornerstone at Our Lady of Guadalupe Church, 2405 Navigation Blvd.

"I'm very excited somebody is looking at us. And, I am glad to see they've partnered with some top-notch firms that have done work in other areas."

Third Advisory Committee Meeting

The third Advisory Committee meeting was held January 13, 2009. A total of 13 committee members attended representing a variety of partners and stakeholders. Representation came from Texas Senator Martin Gallegos, Harris County Commissioner Sylvia Garcia, the City of Houston Parks and Recreation Department, as well as the Traffic and Transportation Department and Public Works Department. Representation included land developers, Greater Houston East End Chamber of Commerce, The Park People, Ripley House Neighborhood Center, Second Ward Super Neighborhood, Talento Bilingue de Houston, METRO Solutions East End Corridor, GEEMD, and H-GAC Livable Centers Group.

The primary objective of the third meeting was to understand the Advisory Committee's preferences for conceptual design of four major street corridors, Navigation Street, Canal Street and Sampson Street, and York Street, as well as Guadalupe Plaza Park. Photos were displayed incorporating different types of conceptual design and streetscape treatments by the corridors where they would be best applied. A variety of conceptual design options were given for Navigation, Canal, and combined for Sampson and York because of similar infrastructure. Members were asked to vote twice for each corridor: once for their most favorite design and once for their least favor design. The most and least preferred designs for each corridor then were discussed to gather detailed input on which characteristics of the treatments were desirable and not desirable to the members.



Appendix D – Public Meetings

The conceptual design of Navigation was discussed first. Members expressed a strong inclination and concern that a median or esplanade be incorporated into the design of the street. One member suggested looking at the design of Main Street in downtown Grand Junction, Colorado. He reported that this Main Street created a regional draw for festivals by incorporating a sculptured garden with a public gathering space and a pedestrian path into a major street median. Photo 5 was preferred by most members, with specific comments that it looked like a place where people could gather. Members' votes and comments indicated a preference for sidewalk pavers versus plain concrete. Member comments on Photos 5 and 6 stated concern for maintenance costs of low shrubs that would attract trash and require a great deal of trimming. Photos 2 and 4 were the least preferred. Comments on Photo 2 expressed concern that the leafy vegetation would get in the way of pedestrians. Comments on Photo 7 were that the design was not the image of East End and was too formal and superior looking.

A second group of five photos were displayed for Sampson and York. Members' votes indicated that Photos 2 and 3 were the least preferred designs. Photos 4 and 5 were the most preferred designs. Members commented that they liked the wide sidewalks and pedestrian crossings included in Photo 4. Further comments emphasized the high pedestrian activity and importance of adding safety signage and striping at all intersections.

Six conceptual designs were considered for Canal. Members preferred Photos 4 and 6 most and Photos 3 and 5 least. In discussions about Canal, members said they had seen people navigating wheelchairs in Canal Street. A local land developer explained that Canal was designed for heavy truck traffic. He added that plans were to redirect the truck traffic to Sampson and York and to make these the primary streets for truck traffic. This would relieve Canal of most truck traffic and provide an opportunity to reduce the number of lanes and lane widths, and then modify and widen the sidewalks for safer pedestrian access and to meet ADA requirements.

Guadalupe Plaza Park

The Advisory Committee then was shown a large display of graphics and members provided input using the same colored dot voting process. The graphics presented portrayed examples of design elements and enhanced pictures portraying a variety of purposes for which the park could be designed. Members voted for water play, passive recreation, special events, dog walk, and community garden.

Appendix D – Public Meetings


Public Meeting #2

The second public meeting was held Tuesday, February 3, 2009. The meeting was presented open house format which was ideal for gathering input from the participants.

Invitees included all identified stakeholders of the project area including members of the Second Ward Super Neighborhood, Houston East End Chamber of Commerce, Buffalo Bayou Partnership, The Park People, Talento Bilingue de Houston, Ripley House, Metro Solutions East Corridor and local businesses, churches, and schools. Staff members from the Offices of Congressman Gene Green, Texas Senator Gallegos, State Representative Carol Alvarado, Harris County Commissioner Sylvia Garcia, Houston City Council Member James Rodriguez were in attendance. Publicity targeted project area residents through flyer distribution at Ripley House Neighborhood Center and at the four largest multi-unit housing developments. Publicity flyers were provided in English and Spanish. In addition, *The Houston Chronicle* published a story in the *East End Neighborhood News* section on the Thursday prior to the meeting.



Appendix D – Public Meetings


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HOUSTON CHRONICLE ARCHIVES

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Streetscape open house is Tuesday

By By ANNETTE BAIRD, HOUSTON CHRONICLE CORRESPONDENT

Residents and employees in the East End will have the opportunity to provide input about what they want their streets to look like and what amenities they desire at an upcoming open house.

Streetscape renderings of a half dozen or so alternatives for each of four thoroughfares will be on display for public comment at an event Tuesday sponsored by the Greater East End Management District.

The open house is from 6-7:30 p.m. at Ripley House, 4410 Navigation.

"This is a great opportunity for people to give input for their neighborhood about where they live, work and recreate, and to give voice to what their needs are," said Hedy Wolpa, management district program director.

A 1-mile stretch of Navigation, from Jensen to York, a mile stretch of Canal, from Navigation to York, and three-quarter mile stretches of Sampson and York were identified by the district as areas that could be improved.

Wolpa said the proximity to downtown and to the future light rail line, the heavy use of public transport, recent urban renewal, and the poor condition of sidewalks and pedestrian amenities were factors in selecting the areas for improvements.

"It was natural for us to focus on these areas where there is a great need for improved safety, better access, and better streets and sidewalks and lighting," she said.

Goodman Corporation, a planning, design and transit firm, was hired to conduct the study, which also includes Guadalupe Park Plaza. A central point in the area, the park and plaza are located at the corner of Jensen and Navigation across from Our Lady of Guadalupe Church and close to Talento Bilingüe de Houston, a cultural community center.

"The goal is to put things in the park that are not only beautiful, but encourage more public use," said Carl Sharpe, project manager with Goodman.

Funded mostly by the Houston-Galveston Area Council and partly by the management district, the study looks at the placement of trees and benches, the use of solar lighting, landscaping, the width of sidewalks, materials, and pedestrian and traffic patterns. The Texas Department of Transportation is providing oversight of the study.

"This will have a major impact on the way the East End looks," Sharpe said. "This will provide a structure for that future, and it is appropriate for the public sector to set the stage."

Following public input, the design phase is expected to be completed by April.

"I'm optimistic that there are plenty of opportunities to find funding for these kind of infrastructure improvements that are sorely needed in the area," Wolpa said.

Appendix D – Public Meetings

The purpose of the second open house was to have participants vote and comment on a variety of designs for the corridors being addressed, Navigation, Canal, and Sampson, and York. Design and activity ideas for Guadalupe Plaza Park were presented for voting and comments. The alternative conceptual designs and the pictures referred to here are presented in Chapter 8.

Comment forms were provided to gather detailed input as to specific features in designs that participants preferred or did not prefer. These comment forms were provided in English and Spanish. The written comments submitted reflect a preference for pedestrian amenities that created a special inviting sense of place (i.e., brick pavers, benches, lampposts, shade trees, and banners). Comments again reflected a concern for security enhancements, especially lighting and not creating places to hide. Comments regarding Guadalupe Plaza Park design specifically reinforced the water play features and fountains, farmers market, and more green space. One suggested incorporating artisan work to help “paint” a picture of the history and culture of the area.

There were 23 attendees at the open house, not including representatives of GEEMD, H-GAC, TxDOT, and the consultant team members.

The participants voted on three sets conceptual designs for Navigation, Canal, York, and Sampson by placing green dots on the two conceptual designs for each corridor they most preferred and red dots on the two conceptual designs they least preferred. Navigation designs included nine pictures, a picture of existing conditions, and eight alternative conceptual designs. Conceptual Design 6 was clearly the most preferred, with Conceptual Design 9 receiving many votes as well. Conceptual Design 8 and 5 were the least preferred.



Five pictures were presented for York and Sampson including a picture of existing conditions and four alternative conceptual designs. Conceptual Design 4 was most preferred and Conceptual Design 3 was the least preferred.

Six pictures were presented for Canal, including a picture of existing conditions and five alternative conceptual designs. Conceptual Design 6 was the most preferred by participants and Conceptual Design 3 and 2 were least preferred.

The public had an opportunity to review a display of graphics of potential park design elements and interactive park features for Guadalupe Plaza Park. They were asked to vote on the elements and features they preferred using the colored dot voting process. The graphics presented portrayed examples of design elements and enhanced pictures portraying a variety of purposes for which the park could be designed. Attendees voted for water play, passive recreation, special events, dog walk, and community garden.



Appendix D – Public Meetings

Fourth Advisory Committee Meeting

The fourth Advisory Committee meeting was held Thursday, February 12, 2009, at the GEEMD offices. A total of 15 Advisory Committee members participated, including representatives of land development and community organizations in the Second Ward Super Neighborhood, Talento Bilingue de Houston, METRO Solutions East End Corridor, and New Hope Housing. In addition, representatives from the offices of Harris County Commissioner Sylvia Garcia and Texas Senator Mario Gallegos participated, as well as representatives of City of Houston Parks Department and the City of Houston Traffic and Transportation Department. In addition to representatives of GEEMD, representatives of the H-GAC Livable Centers Group participated.



The agenda included reporting on input from the second public meeting on preferred Corridor Design treatments, presenting several alternatives and recommendations on the Navigation/Jensen Intersection Alternatives, and presentation of Guadalupe Plaza Park conceptual design.

Fifth Advisory Committee Meeting

The fifth Advisory Committee meeting was held Thursday, March 12, 2009, at the GEEMD offices. A total of 13 Advisory Committee members participated including representatives of land development and community organizations in the Second Ward Super Neighborhood, METRO Solutions East End Corridor, East End Chamber of Commerce, Buffalo Bayou Partnership, The Park People, and New Hope Housing. In addition, representatives from the offices of Harris County Commissioner Sylvia Garcia and Texas Senator Mario Gallegos participated, as well as representatives of City of Houston Parks Department. In addition to representatives of GEEMD, representatives of the H-GAC Livable Centers Group participated.

The agenda included review and discussion of several median alternatives of Navigation with the majority of the meeting focused on the design of Guadalupe Plaza Park and surrounding development.

There was a lively discussion around the Navigation Boulevard median design alternatives presented by the design team. Members stated that would like repetitive design elements to bring continuity to the five blocks of median. Members encouraged median improvements and noted that the upgrades would drive future retail development. One member expressed a preference for less median landscaping due to the maintenance requirements and costs. Another member pointed out the short 4- to 5-block median length and thought this was an “historic opportunity” for the stakeholders to decide what will be done with this space. This median area offers a “center to bring everybody together.” Trees and grass are acceptable in longer medians; however, these medians could be an activity center of retail. One member equated the medians to Amsterdam canals and that the medians and how they are used can make pedestrian crossing of Navigation Boulevard and access to the retail businesses safer and easier.

Appendix D – Public Meetings

The Guadalupe Plaza Park presentation presented a long-term innovative vision developing the entire park into a gateway to the Greater East End. Several committee members suggested there would be advantages to moving the Talento Bilingue de Houston building from its current location near Buffalo Bayou at the back end of the park, separating the park from the bayou. Representatives of Talento Bilingue de Houston added that it would be positive to move the building because where it is situated today has aesthetic problems. Another member recommended an amphitheater to be aboveground over underground parking as shown in conceptual design. Another member was concerned that the amphitheater would have a poor view across Buffalo Bayou and that the land was too narrow for an amphitheater and added that there are other sites that would better suited for an amphitheater. Finally, members were concerned that the committee's time and resources and the design team's efforts and elaborate vision are useless if the developers do not have the tools and incentives needed to bring more developers into the area who will invest.

Public Meeting #3

The third and final public meeting was held Thursday, March 26, 2009, from 6:00 p.m. to 7:30 p.m. Invitees included all identified stakeholders of the project area including members of the Second Ward Super Neighborhood, Houston East End Chamber of Commerce, Buffalo Bayou Partnership, The Park People, Talento Bilingue de Houston, Ripley House Neighborhood Center patrons, and local businesses, churches, and schools. Additional publicity targeted project area residents through flyer distribution at Ripley House Neighborhood Center and the four largest multi-unit housing developments. Publicity flyers were provided in English and Spanish.

This meeting was presented in an open house format giving stakeholders more schedule flexibility, the opportunity to talk with study team members one-on-one and to discuss plans among themselves. The purpose of this final open house was to present the long-term innovative vision developing the entire park into a gateway to the Greater East End. Twelve persons attended the final open house of three meetings (held over five months).

Written comments provided included strong support for the vision of the park to provide a gateway to the Greater East End connecting Guadalupe Park and Tony Marron Park. There were specific comments of emphatic support went to the "youth water project" feature and the open green space leading to Buffalo Bayou. Two requests were made in the written comments. One requested that the Columbia Tap Trail be included explicitly in the Guadalupe Plaza Park plan. Another attendee, a new homeowner, requested that measures for improved security include "bike police, horse-mounted police, blue phones, cameras, etc."

Appendix D – Public Meetings

**Greater East End Management District Livable Centers Project
Ripley House Neighborhood Center
1st Open House
November 11, 2008
WRITTEN COMMENTS**

Question: After tonight's Open House and being introduced to the East End Livable Centers Project and the types of improvements possible, what are your top three concerns?

- Park use, access, and aesthetics
- Violence-reducing design (Starbucks' effect)
- Neighborhood preservation and enhancement
- Centers of community activity
- Children, schools, and their walking patterns

Crime

- Livable Centers need, as one of its components, to be well organized and functional, keeping the area clean and free of debris and junk.
- Better lighting on Navigation
- Safer area for pedestrians
- Art to showcase the Latino Community art and art in general
- Find ways to make better use of Guadalupe Plaza, need something to attract public to area.
- Who pays for it?
- Will there still be 'affordable' housing in the neighborhood?
- What kind of building regulations will the district implement to maintain the standards set by planners?
- As principal of the Rusk School (2805 Garrow) most of the community concerns surround safe walking areas. Currently, we have many streets without sidewalks and, with very narrow streets, it is a safety hazard. With increased traffic due to connectivity, how will pedestrian's safety be ensured?
- Concerned about expanding the boundaries of the 2nd Ward project to the Harrisburg transit and that the resources (\$) are expanded as well.
- Safety around Rusk Elementary - Re: Children/Parents walking to/from school as well as kids being dropped off.
- Support the proposal of an underpass on Harrisburg at Union Pacific railroad track @ Hughes. See Citizens Transportation Coalition Re: This proposal
- If there were an outdoor concert pavilion, I would be concerned about the traffic into our neighborhoods.
- High number of low-income rental homes.
- East – West access from Jensen to Velasco north of Navigation running parallel to Navigation.

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- Absence of retail
- Being proactive in making the plan happen

Question: Please share any other comments you have about creating a special sense of place in the East End - improvements you think are needed.

- You may need to have:
 - Brownfield, Greenfield identified
 - Income levels identified in the neighborhood(s) being affected
 - Comments from working class residents
 - Schools identified
 - Pedestrian traffic relative to the crime rate
 - Homeless awareness – Are there high volumes of homeless?
 - How will this affect current businesses:
 1. Industrial
 2. Scenic
 3. Retail (if any)
- How we have businesses identified could be planted in the neighborhood
- A park that supports the community like Discovery Green
- Please limit murals that are ethnically based. The East End is a part of the city. Hispanics are the fastest growing group and are everywhere and may be the majority soon. I support more universal themes in works of art.
- I would like to see some emphasis near Talento Bilingue, Guadalupe Plaza area which I believe was identified as the gateway to the East End, kind of as an extension of the Theater District.
- Aesthetics: How will increased traffic and construction affect the look of the community?
- Safety: If the area around our school is connected with other areas, what measures will be taken to protect students and parents walking to and from school? Lighting? Patrol?
- Progress is great but don't want to displace the seniors and funding families in the 2nd Ward.
- I like what I saw last tonight and hope it can be possible. Lighting is always welcome.
- We need to try and move the plasma center away from our neighborhood. Too, too many problems with the people it attracts.
- I am really impressed with the plan and the thought that has been given to issues such as crime and traffic patterns. I will share my thoughts with Councilman Adrian Garcia.

Appendix D – Public Meetings

**Greater East End Management District Livable Centers Project
Ripley House Neighborhood Center
2nd Open House
February 3, 2009
WRITTEN COMMENTS**

Most Preferred Features

Those attending were asked to comment on the features in the design alternatives they most preferred. Written comments provided included the following:

- #17 Banners at lamppost are great and seasonal
- #20 Green space street side then sidewalk
- Great for families walking
- #12 Shelter is great for bus
- #11 Sculpted sidewalk great
- #7 “S” Shared green space at street edge, plus!
- #3 Planters can be changed and add flowers
- #14 Like the designs with more green/flowers/landscaping
- #9 Lighting, pedestrian-friendly
- #2 I like the flooring
- #9 Love the “small town” look of the sidewalk
- #6 Love the brick & bench along with the trash receptacle
- #17 I like the way the banners to this light pole
- #20 I like the way sidewalk & light poles are positioned
- #13 I like the crosswalk
- #14 Love this look, very nice and inviting. I like the star on the light post but it is too big maybe a bit smaller.
- #6 I liked the bricks
- #7 I liked the greenery
- #11 I liked the sidewalk
- #14 I liked the scenery bricks and lighting
- #20 I liked the lighting
- #6 Liked colors
- #2 Sidewalk pattern
- #14 Liked whole design
- #13 Loved shade trees – very attractive
- #17 Banners – liked color
- #20 Lamps

Appendix D – Public Meetings

- Path strips – sidewalk – path strips conjunction seems more inviting than having a fence or wall sidewalk. People tend to want to walk on sidewalks that allow room to move. No wall or no fencing eliminates blind spots. Makes for a safer environment. Lighting is high which is good.
- I like the trees, the grass is to plain. I like the lamppost; durable ground covers are probably more practical. I do like brick inset in walk if properly place and supported and proper substrate.
- Overall, I like the proposed landscaping along Canal, Navigation, and York/Sampson. There are vast areas of concrete with very few trees. One great feature about Navigation is the fact that most of the esplanades have trees.
- I think there are a lot of great ideas and would appreciate any attempt at improvement. I will say that I do prefer the older style lampposts.
- Lighting – clean

Least Preferred Features

Those attending were asked to comment on the features in the design alternatives they most preferred. Written comments provided included the following:

- #13 Unclear improvement?
- #19 Thin sidewalk at wide street
- #16 Too dusty, is this for water reasons?
- #14 Odd bench placement
- #19 Don't like plain pictures, only improvement shown was some lighting
- #2 Do not like the plants due to the fact of the trash possibly getting blown into them due to street traffic
- #8 Not enough lighting for this area...more lighting is extremely necessary.
- #12 A more dramatic look should be considered either at metro stop or grassy area and sidewalk
- #17 I don't like the light pole so close to the street; looks like a bike lane in the street would be ideal for that space
- #19 Too close to adjacent building
- #8 I don't like the lights
- #2 I don't like the bushes
- #13 It's too plain
- #7 Over all not attractive
- Trees in the park strip separating sidewalk and street seems like a safety hazard. Using trees on outside of sidewalk opposite street is a better set up. Trees block pedestrian's views of oncoming traffic. Need to have path strip between street and sidewalk as a safety feature.

Appendix D – Public Meetings

- Light fixtures and luminaries need to be high and project over sidewalk. This will widen lighting areas and minimize vandalism of lighting.
- Plain grass, plain concrete sidewalks. I do not like the decision of the low light post, maybe a different design would be better. The down light directed to seeing the sidewalk is a great idea though.

Additional Comments

Citizens were asked to provide any other comments they had regarding the future appearance of these major streets and Guadalupe Plaza Park. The additional written comments included the following:

- Like the chess idea at Guadalupe Plaza
- Water park would be great for the youngsters
- A lot more green in the area
- Must recognize main intersection. Need to make streets more connected to the Americas complex and Guadalupe Plaza Park by using better lighting, signalization, and sidewalks. More green space connecting Guadalupe Plaza and Americas is badly needed and necessary to make negative space more useful in general area. Need artistic touch to park and pedestrian area at Americas to invite pedestrian to area. Water feature is also a common amenity that the public likes in their community areas like parks. Some the artist features is also key to help paint a picture of the history and culture of area.
- The plaza needs activities for youth. Games and equipment (playground) is really needed. More greenery is needed as well.
- I would like to see additional H2O features and fountains as part of the major intersections. #17. I also like post for banners – special occasions, and area and region I.D.
- I think a farmers market and more green space will add a more inviting environment. Hopefully we can get some more businesses in the area that can assist with being a destination.
- Did not see walking trails in Guadalupe Plaza Park

Appendix D – Public Meetings

Photos
NAVIGATION



1



2



3



4



5



6



7



8



9

Appendix D – Public Meetings

YORK SAMSPON



10



11



12



13



14

CANAL



15



16



17



18



19



20

Appendix D – Public Meetings

Greater East End Management District Livable Centers Project

Ripley House Neighborhood Center

3rd Open House

March 26, 2009

WRITTEN COMMENTS

- Really like the landscape and the idea behind the project. The design scheme is pleasant and useable. The project in my opinion to function has to be backed by conceptual ideas of revamping security. In order for any project to work and really have return on investment will indeed require new measures of improved security. I have lived in Second Ward all my life. And as a new proud home owner I would love for a project like this to flourish. A few ideas for security would be: bike police, horse mounted police, blue phones, cameras, etc. Besides these comments I am excited to see my home value rise and to have places like this to safely enjoy a picnic with my family.
- Explicitly include Columbia Tap Trail in Guadalupe Park plan. The “linear park” of Navigation running parallel to Buffalo Bayou, connecting Guadalupe Plaza to Tony Marron Park, in transforming -- a great plan!
- 1) Excellent Concept; 2) Guadalupe Plaza – Concept is great, especially youth water project ideas; Love open green space leading to Bayou in awesome amphitheater look; 3) Navigation – Like the WW II Memorial concept – gateway

Appendix E – Livable Centers Analysis Spreadsheet



East End District - East/West Corridors												
NORTH SIDE OF STREET						SOUTH SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
Navigation												
Navigation between Nagle - Delano												
Block Length (ft)	213	Driveways Length (ft)	0	Curb to B.L. (ft)	10	213	Driveways Length (ft)	30	Curb to B.L. (ft)	10		
Land Use	Commercial	2					Commercial	2				
Sidewalks (width)	5	1065	SF	\$2,000	100%	\$2,130.00	0	5	1065	SF	\$2,000	100%
Demolition		1065	SF	\$12,000	100%	\$12,780.00	0		1065	SF	\$12,000	100%
Installation							0					
Driveways (depth)	5	1	0	SF	3.00	\$0.00	0	5	0	SF	\$3.00	0
Demolition			0	SF	9.00	\$0.00	0		0	SF	\$9.00	0
Installation		1	213	LF	100%	\$852.00	0		183	LF	\$4.00	100%
Curbs			213	LF	100%	\$2,982.00	0		183	LF	\$14.00	100%
Demolition		1	2	Each	100%	\$200.00	0		2	Each	\$100.00	100%
Installation			2	Each	100%	\$3,000.00	0		2	Each	\$1,500.00	100%
Stripping		1	Budget	\$3,000.00		\$3,000.00			1	Budget	\$3,000.00	
Lighting (spacing)	30	2	7	Each		\$21,000.00	0	30	2	6	Each	
Landscaping		2	0	Each	0%	\$0.00	0	30	2	4	Each	
Trees (spacing)	30	1065	SF	\$9.00		\$9,585.00		5	915	SF	\$9.00	
Curb to sidewalk treatment												
Irrigation / Tree		0	Each	\$100.00		\$0.00			4	Each	\$100.00	
Street Amenities		2	1	Each		\$2,000.00	0		1	Each	\$2,000.00	0
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	
Waste Receptacles												
Bus Shelters			Each	\$6,000.00		\$0.00	0		Each	\$6,000.00		
Total		12				\$59,520.00	0		13			\$56,739.00
East End District - East/West Corridors												
NORTH SIDE OF STREET						SOUTH SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
Navigation												
Navigation between Delano - Paige												
Block Length (ft)	278	Driveways Length (ft)	90	Curb to B.L. (ft)	8	278	Driveways Length (ft)	0	Curb to B.L. (ft)	7		
Land Use	Fire station	2					Mixed	2				
Sidewalks (width)	5	695	SF	\$2,000	50%	\$1,390.00	0	5	1390	SF	\$2,000	100%
Demolition		695	SF	\$12,000	50%	\$8,340.00	0		1390	SF	\$12,000	100%
Installation		0	0	SF		\$0.00	0	2	0			0
Driveways (depth)	3	0	0	SF		\$0.00	0		0	SF	\$3.00	
Demolition			0	SF		\$0.00	0		0	SF	\$9.00	
Installation		1	188	LF	100%	\$752.00	0		278	LF	\$4.00	100%
Curbs			188	LF	100%	\$2,632.00	0		278	LF	\$14.00	100%
Demolition		1	2	Each	100%	\$200.00	0		2	Each	\$100.00	100%
Installation			2	Each	100%	\$3,000.00	0		2	Each	\$1,500.00	100%
Stripping		1	Budget	\$3,000.00		\$3,000.00			1	Budget	\$3,000.00	
Lighting (spacing)	30	2	6	Each		\$18,000.00	0	30	2	9	Each	
Landscaping		2	0	Each	0%	\$0.00	0	30	2	4	Each	
Trees (spacing)	30	1065	SF	\$9.00		\$9,585.00		5	915	SF	\$9.00	
Curb to sidewalk treatment												
Irrigation / Tree		0	Each	\$100.00		\$0.00	0		4	Each	\$100.00	
Street Amenities		2	1	Each		\$2,000.00	0		1	Each	\$2,000.00	0
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	
Waste Receptacles												
Bus Shelters			Each	\$6,000.00		\$0.00	0		Each	\$6,000.00		
Total		11				\$47,140.00	0		12			\$67,793.00

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors															
NORTH SIDE OF STREET							SOUTH SIDE OF STREET								
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	
Navigation	Navigation between St. Charles - Live Oak														
	Block Length (ft)	260	Driveways Length (ft)		126	Curb to B.L. (ft)		7	260	Driveways Length (ft)		24	Curb to B.L. (ft)		10
	Land Use		Commercial								Commercial				
	Sidewalks (width)	5	2				0		5						0
	Denolition		1300	SF	\$2.00	100%	\$2,600.00			1300	SF	\$2.00	100%	\$2,600.00	
	Installation		1300	SF	\$12.00	100%	\$15,600.00			1300	SF	\$12.00	100%	\$15,600.00	
	Driveways (depth)	2	1				0		5						0
	Denolition		252	SF	\$3.00	100%	\$756.00			120	SF	\$3.00	100%	\$360.00	
	Installation		252	SF	\$9.00	100%	\$2,268.00			120	SF	\$9.00	100%	\$1,080.00	
	Curbs		1				0			1					0
	Denolition		134	LF	\$4.00	100%	\$536.00			236	LF	\$4.00	100%	\$944.00	
	Installation		134	LF	\$14.00	100%	\$1,876.00			236	LF	\$14.00	100%	\$3,304.00	
	Ramps		1				0			1					0
	Denolition		2	Each	\$100.00		\$200.00			2	Each	\$100.00		\$200.00	
	Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
	Striping		1	Budget	\$3,000.00		\$3,000.00			1	Budget	\$3,000.00		\$3,000.00	
Lighting (spacing)	30	2	4	Each		\$12,000.00	0		30				\$21,000.00	0	
Landscaping		1					0							0	
Trees (spacing)	30		4	Each		\$1,600.00			30			100%	\$2,800.00		
Curb to sidewalk treatment	2		268	SF	\$9.00	\$2,472.00			5				\$10,620.00		
Irrigation / Tree			4	Each		\$400.00									
Street Amenities		2					0			7	Each	\$100.00		\$700.00	0
Seating		1	Each	\$2,000.00		\$2,000.00				1	Each	\$2,000.00		\$2,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00				1	Each	\$1,000.00		\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00				1	Each	\$1,000.00		\$1,000.00	
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00			\$0.00	
Total		11				\$50,248.00	0		11				\$69,208.00	0	

East End District - East/West Corridors														
SOUTH SIDE OF STREET														
NORTH SIDE OF STREET														
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Navigation	Navigation between Live Oak - Nangle													
	Block Length (ft)	280	Driveways Length (ft)	0	Curb to B.L. (ft)	12	280	Driveways Length (ft)	30	Curb to B.L. (ft)	10			
	Land Use	Commercial						Mixed Use						
	Sidewalks (width)	5	2				0	5	2					0
	Denolition		700	SF	\$2.00	50%	\$1,400.00		1400	SF	\$2.00	100%	\$2,800.00	
	Installation		0	SF	\$12.00	50%	\$0.00		1400	SF	\$12.00	100%	\$16,800.00	
	Driveways (depth)	7	0				0	5	0					0
	Denolition		0	SF	\$3.00		\$0.00		0	SF	\$3.00		\$0.00	
	Installation		0	SF	\$9.00		\$0.00		0	SF	\$9.00		\$0.00	
	Curbs		2				0	2						0
Denolition		280	LF	\$4.00	100%	\$1,120.00			250	LF	\$4.00	100%	\$1,000.00	
Installation		280	LF	\$14.00	100%	\$3,920.00			250	LF	\$14.00	100%	\$3,500.00	
Ramps		1				0		1					0	
Denolition		2	Each	\$100.00		\$200.00			2	Each	\$100.00		\$200.00	
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
Striping		1	Budget	\$3,000.00		\$3,000.00		1	Budget	\$3,000.00			\$3,000.00	
Lighting (spacing)	30	2	9	Each	\$3,000.00	\$27,000.00	0	30	2	8	Each	\$3,000.00	\$24,000.00	0
Landscaping		1					0		1					0
Trees (spacing)	30		5	Each	\$400.00	0		30		4	Each	\$400.00	\$1,600.00	
Curb to sidewalk treatment	7		1960	SF	\$9.00	\$17,640.00		5		1250	SF	\$9.00	\$11,250.00	
Irrigation / Tree			5	Each	\$100.00	\$450.00			4	Each	\$100.00		\$400.00	
Street Amenities			2				0		2					0
Seating			1	Each	\$2,000.00	\$2,000.00			1	Each	\$2,000.00		\$2,000.00	
Bike Racks			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00	
Waste Receptacles			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00	
Bus Shelters						\$0.00							\$0.00	
			Each	\$6,000.00						Each	\$6,000.00			
Total		11				\$61,730.00	0		11				\$71,550.00	0

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors															
NORTH SIDE OF STREET								SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	
Navigation															
Navigation between Paige - Emis															
Block Length (ft)	282	Driveways Length (ft)	0		Curb to B.L. (ft)	8	282	Driveways Length (ft)	90		Curb to B.L. (ft)	12			
Land Use		Commercial						Commercial							
Sidewalks (width)	5	2	SF	\$2.00	100%	\$2,820.00	0	5	2	SF	\$2.00		\$0.00	0	
Demolition		1410	SF	\$12.00	100%	\$16,920.00	0		1410	SF	\$12.00	100%	\$16,920.00	0	
Installation		0	SF	\$3.00		\$0.00		7	2	SF	\$3.00	100%	\$1,890.00		
Driveways (depth)	3	0	SF	\$9.00		\$0.00			630	SF	\$9.00	100%	\$5,670.00		
Demolition		0	SF	\$4.00	100%	\$1,280.00	0		630	SF	\$4.00	100%	\$2,520.00	0	
Installation		282	LF	\$14.00	100%	\$3,948.00	0		192	LF	\$14.00	100%	\$2,688.00		
Curbs	2	2	Each	\$100.00		\$200.00			2	Each	\$100.00		\$200.00		
Demolition		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00		
Installation		1	Budget	\$3,000.00		\$3,000.00		1		Budget	\$3,000.00		\$3,000.00		
Stripping															
Lighting (spacing)	30	2	Each	\$3,000.00		\$27,000.00	0	30	2	Each	\$3,000.00		\$18,000.00	0	
Landscaping		0	Each	\$400.00	0%	\$0.00		30	3	Each	\$400.00	50%	\$1,200.00	0	
Trees (spacing)	30	846	SF	\$9.00		\$7,614.00		7	1344	SF	\$9.00		\$12,096.00		
Curb to sidewalk treatment															
Irrigation / Tree treatment		0	Each	\$100.00		\$0.00			3	Each	\$100.00		\$300.00		
Street Amenities	2	1	Each	\$2,000.00		\$2,000.00	0		2	Each	\$2,000.00		\$2,000.00	0	
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters			Each	\$6,000.00		\$0.00			Each	\$6,000.00			\$0.00		
Total		10				\$69,630.00	0	13					\$69,732.00	0	

East End District - East/West Corridors															
NORTH SIDE OF STREET								SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	
Navigation															
Navigation between Emis - Palmer															
Block Length (ft)	237	Driveways Length (ft)	24		Curb to B.L. (ft)	11	237	Driveways Length (ft)	0		Curb to B.L. (ft)	13			
Land Use		Retail						Commercial							
Sidewalks (width)	5	2	SF	\$2.00	50%	\$1,185.00	0	5	2	SF	\$2.00	50%	\$1,185.00	0	
Demolition		592.5	SF	\$12.00	50%	\$7,110.00	0		592.5	SF	\$12.00	50%	\$7,110.00	0	
Installation		0	SF	\$3.00		\$0.00		8	0	SF	\$3.00		\$0.00	0	
Driveways (depth)	6	0	SF	\$9.00		\$0.00			0	SF	\$9.00		\$0.00		
Demolition		0	SF	\$4.00	100%	\$852.00	0		0	SF	\$4.00		\$0.00		
Installation		213	LF	\$14.00	100%	\$2,982.00	0		237	LF	\$14.00	100%	\$3,318.00	0	
Curbs	2	2	Each	\$100.00		\$200.00		2	2	Each	\$100.00		\$200.00		
Demolition		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00		
Installation		1	Budget	\$3,000.00		\$3,000.00		1	Budget	\$3,000.00			\$3,000.00		
Stripping															
Lighting (spacing)	30	2	Each	\$3,000.00		\$21,000.00	0	30	2	Each	\$3,000.00		\$21,000.00	0	
Landscaping		0	Each	\$400.00	25%	\$700.00		30	2	Each	\$400.00	25%	\$700.00	0	
Trees (spacing)	30	1278	SF	\$9.00		\$11,502.00		8	1896	SF	\$9.00		\$17,064.00		
Curb to sidewalk treatment															
Irrigation / Tree treatment		2	Each	\$100.00		\$175.00	0		2	Each	\$100.00		\$175.00	0	
Street Amenities	2	1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00		
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters			Each	\$6,000.00		\$0.00			Each	\$6,000.00			\$0.00		
Total		13				\$55,706.00	0	11					\$54,590.00	0	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Navigation														
Navigation between Palmer - Nolan @ RR tracks														
Block Length (ft)	400	Driveways Length (ft)	50			Curb to B.L. (ft)	6	400	Driveways Length (ft)	24			Curb to B.L. (ft)	12
Land Use	Commercial						0	Commercial/residential						0
Sidewalks (width)	5	2						2	5	2				
Demolition		2000	SF	\$2.00	100%	\$4,000.00				2000	SF	\$2.00	100%	\$4,000.00
Installation		2000	SF	\$12.00	100%	\$24,000.00				2000	SF	\$12.00	100%	\$24,000.00
Driveways (depth)	1	0					0	7	0					0
Demolition		0	SF	\$3.00		\$0.00				0	SF	\$3.00		\$0.00
Installation		0	SF	\$9.00		\$0.00				0	SF	\$9.00		\$0.00
Curbs	2						0	2						0
Demolition		350	LF	\$4.00	100%	\$1,400.00				376	LF	\$4.00	100%	\$1,504.00
Installation		350	LF	\$14.00	100%	\$4,900.00				376	LF	\$14.00	100%	\$5,264.00
Ramps	2						0	2						0
Demolition		2	Each	\$100.00		\$200.00				2	Each	\$100.00		\$200.00
Installation		2	Each	\$1,500.00		\$3,000.00				2	Each	\$1,500.00		\$3,000.00
Striping	1					\$3,000.00		1					\$3,000.00	
Lighting (spacing)	30	1	11	Each		\$33,000.00	0	30	1	12	Each		\$36,000.00	0
Landscaping		2					0		0				\$0.00	0
Trees (spacing)	30	8	Each	\$400.00	70%	\$3,080.00		30		0	Each		\$400.00	
Curb to sidewalk treatment	1	350	SF	\$9.00		\$3,150.00		7		2632	SF		\$9.00	\$23,688.00
Irrigation / Tree														
Street Amenities		8	Each	\$100.00		\$770.00			2	0	Each		\$100.00	\$0.00
Seating		1	Each	\$2,000.00		\$2,000.00				1	Each		\$2,000.00	\$0.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00				1	Each		\$1,000.00	\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00				1	Each		\$1,000.00	\$1,000.00
Bus Shelters						\$0.00							\$0.00	
Total		12				\$84,500.00	0		10				\$104,656.00	0

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Navigation														
Navigation between RR Tracks - Simpson														
Block Length (ft)	746	Driveways Length (ft)	180			Curb to B.L. (ft)	7	681	Driveways Length (ft)	120			Curb to B.L. (ft)	12
Land Use	Commercial							Commercial						
Sidewalks (width)	5	2					0	5	2					0
Demolition		3730	SF	\$2.00	100%	\$7,460.00			3405	SF	\$2.00	100%	\$6,810.00	
Installation		3730	SF	\$12.00	100%	\$44,760.00			3405	SF	\$12.00	100%	\$40,860.00	
Driveways (depth)	2	1					0	7	1					0
Demolition		0	SF	\$3.00		\$0.00			0	SF	\$3.00		\$0.00	
Installation		0	SF	\$9.00		\$0.00			0	SF	\$9.00		\$0.00	
Curbs	2						0	2						0
Demolition		566	LF	\$4.00	100%	\$2,264.00			561	LF	\$4.00	100%	\$2,244.00	
Installation		566	LF	\$14.00	100%	\$7,924.00			561	LF	\$14.00	100%	\$7,854.00	
Ramps	2						0	2						0
Demolition		2	Each	\$100.00		\$200.00			2	Each	\$100.00		\$200.00	
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
Striping	1					\$3,000.00		1					\$3,000.00	
Lighting (spacing)	30	2	18	Each		\$54,000.00	0	30	1	18	Each		\$54,000.00	0
Landscaping		1					0		1				\$3,600.00	0
Trees (spacing)	30	7	Each	\$400.00	40%	\$2,880.00		30		9	Each		\$4,000.00	
Curb to sidewalk treatment	2	1132	SF	\$9.00		\$10,188.00		7		3927	SF		\$9.00	\$35,343.00
Irrigation / Tree		7	Each	\$100.00		\$720.00			2	9	Each		\$100.00	\$900.00
Street Amenities	2						0							0
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each			\$2,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each			\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each			\$1,000.00	
Bus Shelters						\$0.00							\$0.00	
Total		13				140396	0		12				\$161,811.00	0

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors												
NORTH SIDE OF STREET						SOUTH SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
Navigation												
Navigation between Sampson and York plus 500 feet												
Block Length (ft)	567	Driveways Length (ft)	134	Curb to B.L. (ft)	14	647	Driveways Length (ft)	130	Curb to B.L. (ft)	12		
Land Use	Commercial											
Sidewalks (width)	5	2	2835	SF	100%	\$5,670.00	0	5	3235	SF	\$2.00	100%
Demolition			2835	SF	100%	\$34,020.00	0	7	3235	SF	\$12.00	100%
Installation												
Driveways (depth)	9	1	0	SF		\$0.00	0		0	SF	\$3.00	
Demolition			0	SF		\$0.00	0		0	SF	\$9.00	
Installation			0	SF		\$0.00	0		0	SF	\$9.00	
Curbs			2				0	2	517	LF	\$4.00	100%
Demolition			433	LF	100%	\$1,732.00	0		517	LF	\$14.00	100%
Installation			433	LF	100%	\$6,062.00	0		517	LF	\$14.00	100%
Ramps			2				0	2	2	Each	\$100.00	
Demolition			2	Each		\$200.00	0		2	Each	\$100.00	
Installation			2	Each		\$3,000.00	0		2	Each	\$3,000.00	
Striping			1	Budget		\$3,000.00	0	1	Budget		\$3,000.00	
Lighting (spacing)	30	2	14	Each		\$42,000.00	0	30	17	Each	\$3,000.00	
Landscaping			1				0		1			
Trees (spacing)	30	14	Each	\$400.00	100%	\$5,600.00	0	30	9	Each	\$400.00	50%
Curb to sidewalk treatment	9	3897	SF	\$9.00		\$35,073.00	0	7	3619	SF	\$9.00	
Irrigation / Tree			14	Each		\$1,400.00	0		9	Each	\$100.00	
Street Amenities			2				0	2	1	Each	\$2,000.00	
Seating			1	Each		\$2,000.00	0		1	Each	\$2,000.00	
Bike Racks			1	Each		\$1,000.00	0		1	Each	\$1,000.00	
Waste Receptacles			1	Each		\$1,000.00	0		1	Each	\$1,000.00	
Bus Shelters				Each		\$0.00	0			Each	\$6,000.00	
Total		13				\$141,757.00	0		12			
East End District - East/West Corridors												
NORTH SIDE OF STREET						SOUTH SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
Canal												
Canal between Navigation - McPhine												
Block Length (ft)	520	Driveways Length (ft)	120	Curb to B.L. (ft)	8	520	Driveways Length (ft)	70	Curb to B.L. (ft)	8		
Land Use	Office - Vacant											
Sidewalks (width)	8	1	4160	SF	100%	\$0.00	0	8	4160	SF	\$0.00	100%
Demolition			4160	SF	100%	\$0.00	0		4160	SF	\$0.00	100%
Installation			0	SF		\$0.00	0	0	0	SF	\$0.00	
Driveways (depth)	0	0	0	SF		\$0.00	0		0	SF	\$0.00	
Demolition			0	SF		\$0.00	0		0	SF	\$0.00	
Installation			0	SF		\$0.00	0		0	SF	\$0.00	
Curbs			1				0	1	450	LF	\$0.00	100%
Demolition			400	LF	100%	\$0.00	0		450	LF	\$0.00	100%
Installation			400	LF	100%	\$0.00	0		450	LF	\$0.00	100%
Ramps			2	Each		\$0.00	0	2	2	Each	\$0.00	
Demolition			2	Each		\$0.00	0		2	Each	\$0.00	
Installation			2	Each		\$0.00	0		2	Each	\$0.00	
Striping			1	Budget		\$0.00	0	1	Budget		\$0.00	
Lighting (spacing)	30	1	13	Each		\$0.00	0	30	15	Each	\$0.00	
Landscaping			2				0		15	Each	\$0.00	
Trees (spacing)	30	13	Each	\$0.00		\$0.00	0	30	15	Each	\$0.00	
Curb to sidewalk treatment	0	0	SF	\$0.00		\$0.00	0	0	0	SF	\$0.00	
Irrigation / Tree			13	Each		\$0.00	0		15	Each	\$0.00	
Street Amenities			2				0	2	1	Each	\$0.00	
Seating			1	Each		\$0.00	0		1	Each	\$0.00	
Bike Racks			1	Each		\$0.00	0		1	Each	\$0.00	
Waste Receptacles			1	Each		\$0.00	0		1	Each	\$0.00	
Bus Shelters				Each		\$0.00	0			Each	\$0.00	
Total		10				\$0.00	0		10			

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between McAlpine - N. St. Charles														
Block Length (ft)	223	Driveways Length (ft)	0		Curb to B.L. (ft)	8	223	Driveways Length (ft)	48		Curb to B.L. (ft)	8		8
Land Use		Commercial						Vacant						
Sidewalks (width)	8	1					0	8	1					0
Demolition		1784	SF	\$0.00	100%	\$0.00			1784	SF	\$0.00	100%	\$0.00	
Installation		1784	SF	\$0.00	100%	\$0.00			1784	SF	\$0.00	100%	\$0.00	
Driveways (depth)	0	0					0	0	1				\$0.00	0
Demolition		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Installation		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Curbs		1					0		1				\$0.00	0
Demolition		223	LF	\$0.00	100%	\$0.00			175	LF	\$0.00	100%	\$0.00	
Installation		223	LF	\$0.00	100%	\$0.00			175	LF	\$0.00	100%	\$0.00	
Ramps		1					0		0				\$0.00	0
Demolition		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Installation		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Striping		1	Budget	\$0.00		\$0.00			1	Budget	\$0.00		\$0.00	
Lighting (spacing)	30	2	7	Each	\$0.00		0	30	2	5	Each		\$0.00	0
Landscaping		2					0		2				\$0.00	0
Trees (spacing)	30	7	Each	\$0.00	100%	\$0.00		30	5	Each	\$0.00		\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
treatment														
Irrigation / Tree		7	Each	\$0.00		\$0.00			5	Each	\$0.00		\$0.00	
Street Amenities		2					0		2				\$0.00	0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Storm Water Inlet		1	Each	\$5,000.00		\$5,000.00			1	Each	\$5,000.00		\$5,000.00	
Bus Shelters			Each	\$0.00		\$0.00				Each	\$0.00		\$0.00	
Total	10					\$5,000.00	0		10				\$5,000.00	0

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between N. St. Charles - N. Live Oak														
Block Length (ft)	288	Driveways Length (ft)	24		Curb to B.L. (ft)	8	288	Driveways Length (ft)	50		Curb to B.L. (ft)	8		8
Land Use		Commercial						Mixed						
Sidewalks (width)	8	2					0	8	2					0
Demolition		2304	SF	\$0.00	100%	\$0.00			2304	SF	\$0.00	100%	\$0.00	
Installation		2304	SF	\$0.00	100%	\$0.00			2304	SF	\$0.00	100%	\$0.00	
Driveways (depth)	0	1					0	0	1				\$0.00	0
Demolition		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Installation		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Curbs		1					0		1				\$0.00	0
Demolition		264	LF	\$0.00	100%	\$0.00			238	LF	\$0.00	100%	\$0.00	
Installation		264	LF	\$0.00	100%	\$0.00			238	LF	\$0.00	100%	\$0.00	
Ramps		2					0		2				\$0.00	0
Demolition		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Installation		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Striping		1	Budget	\$0.00		\$0.00			1	Budget	\$0.00		\$0.00	
Lighting (spacing)	30	2	8	Each	\$0.00		0	30	2	7	Each		\$0.00	0
Landscaping		2					0		1				\$0.00	0
Trees (spacing)	30	8	Each	\$0.00		\$0.00		30	7	Each	\$0.00		\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
treatment														
Irrigation / Tree		8	Each	\$0.00		\$0.00			7	Each	\$0.00		\$0.00	
Street Amenities		2					0		1				\$0.00	0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bus Shelters			Each	\$0.00		\$0.00				Each	\$0.00		\$0.00	
Total	13					\$0.00	0		11				\$0.00	0

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between N. Live Oak - N. Delano														
Block Length (ft)	526	Driveways Length (ft)		250		Curb to B.L. (ft)	8	526	Driveways Length (ft)		110		Curb to B.L. (ft)	8
Land Use		Mixed (residential, commercial and vacant)							Industrial					
Sidewalks (width)	8	2					0	8	2					0
Demolition		4208	SF	\$0.00	100%	\$0.00			4208	SF	\$0.00	100%	\$0.00	
Installation		4208	SF	\$0.00	100%	\$0.00			4208	SF	\$0.00	100%	\$0.00	
Driveways (depth)	0	0					0	0	0				\$0.00	0
Demolition		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Installation		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Curbs		1					0	1	416	LF	\$0.00	100%	\$0.00	0
Demolition		276	LF	\$0.00	100%	\$0.00			416	LF	\$0.00	100%	\$0.00	
Installation		276	LF	\$0.00	100%	\$0.00			416	LF	\$0.00	100%	\$0.00	
Ramps	1						0	1	2				\$0.00	0
Demolition		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Installation		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Striping			Budget	\$0.00		\$0.00			Budget	\$0.00			\$0.00	
Lighting (spacing)	30	2	9	Each	\$0.00	\$0.00	1	30	2	13	Each	\$0.00	\$0.00	1
Landscaping		1					1							1
Trees (spacing)	30	9	Each	\$0.00		\$0.00		30	2	13	Each	\$0.00	\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
treatment														
Irrigation / Tree		9	Each	\$0.00		\$0.00			13	Each	\$0.00		\$0.00	
Street Amenities		2					0		2				\$0.00	0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bus Shelters		Each		\$0.00		\$0.00			Each		\$0.00		\$0.00	
Total		9		\$0.00		\$0.00	2		10		\$0.00		\$0.00	2

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between Delano - Ennis														
Block Length (ft)	633	Driveways Length (ft)		124		Curb to B.L. (ft)	8	633	Driveways Length (ft)		633		Curb to B.L. (ft)	8
Land Use		Mixed (Canal Street Apts in this block)							Commercial					
Sidewalks (width)	8	2					0	8	2					0
Demolition		5064	SF	\$0.00	100%	\$0.00			5064	SF	\$0.00	100%	\$0.00	
Installation		5064	SF	\$0.00	100%	\$0.00			5064	SF	\$0.00	100%	\$0.00	
Driveways (depth)	0	0				\$0.00	0	0	0				\$0.00	0
Demolition		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Installation		0	SF	\$0.00		\$0.00			0	SF	\$0.00		\$0.00	
Curbs		1				\$0.00	0		1				\$0.00	0
Demolition		509	LF	\$0.00	100%	\$0.00			0	LF	\$0.00	100%	\$0.00	
Installation		509	LF	\$0.00	100%	\$0.00			0	LF	\$0.00	100%	\$0.00	
Ramps	2					\$0.00	0		2				\$0.00	0
Demolition		2	Each	\$0.00	100%	\$0.00			2	Each	\$0.00		\$0.00	
Installation		2	Each	\$0.00		\$0.00			2	Each	\$0.00		\$0.00	
Striping		1	Budget	\$0.00		\$0.00			1	Budget	\$0.00		\$0.00	
Lighting (spacing)	30	1	16	Each	\$0.00	\$0.00	0	30	1	0	Each	\$0.00	\$0.00	2
Landscaping		2				\$0.00	0		2				\$0.00	2
Trees (spacing)	30	16	Each	\$0.00		\$0.00		30	2	0	Each	\$0.00	\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
treatment														
Irrigation / Tree		16	Each	\$0.00		\$0.00	0		0	Each	\$0.00		\$0.00	
Street Amenities		2					0		2				\$0.00	0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Storm Water Inlet		1	Each	\$5,000.00		\$5,000.00			1	Each	\$5,000.00		\$5,000.00	
Bus Shelters		Each		\$0.00		\$0.00			Each		\$0.00		\$0.00	
Total		11		\$5,000.00		\$5,000.00	0		13		\$0.00		\$5,000.00	4

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors																	
NORTH SIDE OF STREET							SOUTH SIDE OF STREET										
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score		Score	Qty.	Unit	Unit Cost	%	Cost	New Score	
Canal	Canal between Ennis - Palmer																
	Block Length (ft)	248	Driveways Length (ft)	124	Curb to B.L. (ft)	8	248	Driveways Length (ft)	50	Curb to B.L. (ft)	8						
	Land Use		Residential/Commercial						Commercial								
	Sidewalks (width)	8	2					0	2							0	
	Demolition		1984	SF	\$0.00	100%	\$0.00		1984	SF	\$0.00			100%	\$0.00		
	Installation		1984	SF	\$0.00	100%	\$0.00		1984	SF	\$0.00			100%	\$0.00		
	Driveways (depth)	0	1					0	1							0	
	Demolition		0	SF	\$0.00		\$0.00		0	SF	\$0.00				\$0.00		
	Installation		0	SF	\$0.00		\$0.00		0	SF	\$0.00				\$0.00		
	Curbs		1					0	1							0	
	Demolition		124	LF	\$0.00	100%	\$0.00		198	LF	\$0.00			100%	\$0.00		
	Installation		124	LF	\$0.00	100%	\$0.00		198	LF	\$0.00			100%	\$0.00		
	Ramps		1					0	1							0	
	Demolition		2	Each	\$0.00		\$0.00		2	Each	\$0.00				\$0.00		
	Installation		2	Each	\$0.00		\$0.00		2	Each	\$0.00				\$0.00		
	Stripping		1	Budget	\$0.00		\$0.00		1	Budget	\$0.00				\$0.00		
	Lighting (spacing)	30	1	4	Each	\$0.00		\$0.00	1	6	Each	\$0.00				\$0.00	0
	Landscaping		2						1	2							0
Trees (spacing)	30	4	Each	\$0.00		\$0.00		6	Each	\$0.00					\$0.00		
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	SF	\$0.00					\$0.00		
tree treatment																	
Irrigation / Tree		4	Each	\$0.00		\$0.00			6	Each	\$0.00				\$0.00		
Street Amenities		2						0	2							0	
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Bus Shelters				Each	\$0.00		\$0.00			Each	\$0.00				\$0.00		
Total		11					\$0.00	2	11						\$0.00	0	

East End District - East/West Corridors																	
NORTH SIDE OF STREET							SOUTH SIDE OF STREET										
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score		Score	Qty.	Unit	Unit Cost	%	Cost	New Score	
Canal	Canal between Palmer - RR																
	Block Length (ft)	414	Driveways Length (ft)	130	Curb to B.L. (ft)	8	260	Driveways Length (ft)	150	Curb to B.L. (ft)	8						
	Land Use		Commercial						Commercial (Tyson)								
	Sidewalks (width)	8	2					0	2							0	
	Demolition		3312	SF	\$0.00	100%	\$0.00		2080	SF	\$0.00			100%	\$0.00		
	Installation		3312	SF	\$0.00	100%	\$0.00		2080	SF	\$0.00			100%	\$0.00		
	Driveways (depth)	0	0					0	0							0	
	Demolition		0	SF	\$0.00		\$0.00		0	SF	\$0.00				\$0.00		
	Installation		0	SF	\$0.00		\$0.00		0	SF	\$0.00				\$0.00		
	Curbs		2					0	2							0	
	Demolition		284	LF	\$0.00	100%	\$0.00		110	LF	\$0.00			100%	\$0.00		
	Installation		284	LF	\$0.00	100%	\$0.00		110	LF	\$0.00			100%	\$0.00		
	Ramps		2					0	2							0	
	Demolition		2	Each	\$0.00		\$0.00		2	Each	\$0.00				\$0.00		
	Installation		2	Each	\$0.00		\$0.00		2	Each	\$0.00				\$0.00		
	Stripping		1	Budget	\$0.00		\$0.00			1	Budget	\$0.00				\$0.00	
	Lighting (spacing)	30	1	9	Each	\$0.00		\$0.00	1	3	Each	\$0.00				\$0.00	1
	Landscaping		2						1	1							1
	Trees (spacing)	30	9	Each	\$0.00		\$0.00			3	Each	\$0.00				\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00			0	SF	\$0.00				\$0.00		
tree treatment																	
Irrigation / Tree		9	Each	\$0.00		\$0.00	0	2	3	Each	\$0.00				\$0.00	0	
Street Amenities		2							2								
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00				\$0.00		
Bus Shelters				Each	\$0.00		\$0.00			Each	\$0.00				\$0.00		
Total		12					\$0.00	2	11						\$0.00	2	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors																
NORTH SIDE OF STREET							SOUTH SIDE OF STREET									
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score		Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal	Canal between RR - Nolan															
	Block Length (ft)	323	Driveways Length (ft)	323	Curb to B.L. (ft)			8	323	Driveways Length (ft)	323	Curb to B.L. (ft)			8	
	Land Use		Commercial/Public													
	Sidewalks (width)	8	2					0	8	2						0
	Demolition			2584	SF	\$0.00	100%	\$0.00				2584	SF	\$0.00	100%	\$0.00
	Installation			2584	SF	\$0.00	100%	\$0.00				2584	SF	\$0.00	100%	\$0.00
	Driveways (depth)	0	0					0	0	0						0
	Demolition			0	SF	\$0.00		\$0.00				0	SF	\$0.00		\$0.00
	Installation			0	SF	\$0.00		\$0.00				0	SF	\$0.00		\$0.00
	Curbs		2					0	0	2						0
	Demolition			0	LF	\$0.00		\$0.00				0	LF	\$0.00		\$0.00
	Installation			0	LF	\$0.00		\$0.00				0	LF	\$0.00		\$0.00
	Ramps		2					0	0	2						0
	Demolition			2	Each	\$0.00		\$0.00				2	Each	\$0.00		\$0.00
	Installation			2	Each	\$0.00		\$0.00				2	Each	\$0.00		\$0.00
	Stripping		1					\$0.00		1					\$0.00	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between Sampson - York														
Block Length (ft)	270	Driveways Length (ft)	100		Curb to B.L. (ft)	8	270	Driveways Length (ft)	60		Curb to B.L. (ft)	8		
Land Use		Commercial						Commercial/Vacant						
Sidewalks (width)	8	2	2160	SF	\$0.00	\$0.00	0	8	2	2160	SF	\$0.00	\$0.00	0
Demolition			2160	SF	100%	\$0.00				2160	SF	100%	\$0.00	
Installation			2160	SF	100%	\$0.00				2160	SF	100%	\$0.00	
Driveways (depth)	0	0	0	SF	\$0.00	\$0.00	0	0	0	0	SF	\$0.00	\$0.00	0
Demolition			0	SF		\$0.00				0	SF		\$0.00	
Installation			0	SF	\$0.00	\$0.00				0	SF	\$0.00	\$0.00	
Curbs	2	2	170	LF	\$0.00	\$0.00	0		2	210	LF	\$0.00	\$0.00	0
Demolition			170	LF	100%	\$0.00				210	LF	100%	\$0.00	
Installation			170	LF	100%	\$0.00				210	LF	100%	\$0.00	
Ramps	2	2	Each	\$0.00		\$0.00	0		2	2	Each	\$0.00	\$0.00	0
Demolition			2	Each	\$0.00	\$0.00				2	Each	\$0.00	\$0.00	
Installation			2	Each	\$0.00	\$0.00				2	Each	\$0.00	\$0.00	
Stripping	1	Budget	\$0.00			\$0.00			1	Budget	\$0.00		\$0.00	
Lighting (spacing)	30	1	5	Each	\$0.00	\$0.00	1	30	1	7	Each	\$0.00	\$0.00	0
Landscaping		2					1		2					0
Trees (spacing)	30	5	Each	\$0.00		\$0.00		30	7	Each	\$0.00		\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
Street Amenities		5	Each	\$0.00		\$0.00			7	Each	\$0.00		\$0.00	
Irrigation / Tree treatment		2					0		2					0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bus Shelters			Each	\$0.00		\$0.00	2			Each	\$0.00		\$0.00	
Total		12				0			12				0	

East End District - East/West Corridors														
NORTH SIDE OF STREET							SOUTH SIDE OF STREET							
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	New Score
Canal														
Canal between York plus 500 feet														
Block Length (ft)	500	Driveways Length (ft)	300		Curb to B.L. (ft)	8	500	Driveways Length (ft)	100		Curb to B.L. (ft)	8		
Land Use		Commercial						Commercial/Vacant						
Sidewalks (width)	8	2	4000	SF	\$0.00	\$0.00	0	8	2	4000	SF	\$0.00	\$0.00	0
Demolition			4000	SF	100%	\$0.00				4000	SF	100%	\$0.00	
Installation			4000	SF	100%	\$0.00				4000	SF	100%	\$0.00	
Driveways (depth)	0	0	0	SF	\$0.00	\$0.00	0	0	0	0	SF	\$0.00	\$0.00	0
Demolition			0	SF		\$0.00				0	SF		\$0.00	
Installation			0	SF	\$0.00	\$0.00				0	SF	\$0.00	\$0.00	
Curbs	2	2	200	LF	\$0.00	\$0.00	0		2	400	LF	\$0.00	\$0.00	0
Demolition			200	LF	100%	\$0.00				400	LF	100%	\$0.00	
Installation			200	LF	100%	\$0.00				400	LF	100%	\$0.00	
Ramps	2	2	Each	\$0.00		\$0.00	0		2	2	Each	\$0.00	\$0.00	0
Demolition			2	Each	\$0.00	\$0.00				2	Each	\$0.00	\$0.00	
Installation			2	Each	\$0.00	\$0.00				2	Each	\$0.00	\$0.00	
Stripping	1	Budget	\$0.00			\$0.00			1	Budget	\$0.00		\$0.00	
Lighting (spacing)	30	1	6	Each	\$0.00	\$0.00	1	30	1	13	Each	\$0.00	\$0.00	0
Landscaping		2					1		2					0
Trees (spacing)	30	6	Each	\$0.00		\$0.00		30	13	Each	\$0.00		\$0.00	
Curb to sidewalk	0	0	SF	\$0.00		\$0.00		0	0	SF	\$0.00		\$0.00	
Street Amenities		6	Each	\$0.00		\$0.00	0		13	Each	\$0.00		\$0.00	
Irrigation / Tree treatment		2					0		2					0
Seating		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bike Racks		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Waste Receptacles		1	Each	\$0.00		\$0.00			1	Each	\$0.00		\$0.00	
Bus Shelters			Each	\$0.00		\$0.00	2			Each	\$0.00		\$0.00	
Total		12				0			12				0	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Standards	Score	Qty.	Unit	Unit Cost	%
Sampson													
Sampson between Navigation - Engellee													
Block Length (ft)	322	Driveways Length (ft)	64				14	322	Driveways Length (ft)	40			
Land Use	Commercial												
Sidewalks (width)	5	2	SF	\$2.00	100%	\$3,220.00	0	5	2	SF	\$2.00	\$3,220.00	100%
Denomination		1610	SF	\$12.00	100%	\$19,320.00	0		1610	SF	\$12.00	\$19,320.00	100%
Installation		2					0	9	2				0
Driveways (depth)	9	576	SF	\$3.00	100%	\$1,728.00	0		360	SF	\$3.00	\$1,080.00	100%
Denomination		576	SF	\$9.00	100%	\$5,184.00	0		360	SF	\$9.00	\$3,240.00	100%
Installation		2					0		2				0
Curbs		161	LF	\$4.00	50%	\$644.00	0		80.5	LF	\$4.00	\$322.00	25%
Denomination		161	LF	\$14.00	50%	\$2,254.00	0		80.5	LF	\$14.00	\$1,127.00	25%
Installation		2					0		2				0
Ramps		2	Each	\$100.00		\$200.00			2	Each	\$100.00	\$200.00	
Denomination		2	Each	\$1,500.00	100%	\$3,000.00			2	Each	\$1,500.00	\$3,000.00	
Installation		2	Budget	\$3,000.00		\$3,000.00			2	Budget	\$3,000.00	\$3,000.00	
Stripping													
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	0	30	2	Each	\$3,000.00	\$27,000.00	0
Landscaping		2					0		2				0
Trees (spacing)	30	8	Each	\$400.00		\$3,200.00		30	9	Each	\$400.00	\$3,600.00	
Curb to sidewalk	9	2322	SF	\$9.00		\$20,898.00		9	2538	SF	\$9.00	\$22,842.00	
treatment													
Irrigation / Tree		8	Each	\$100.00		\$800.00	0		9	Each	\$100.00	\$900.00	0
Street Amenities		2							2				
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00	\$2,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	\$1,000.00	
Bus Shelters		1	Each	\$6,000.00		\$6,000.00				Each	\$6,000.00	\$6,000.00	
Total		14				\$97,448.00	0		14			\$92,851.00	0

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Standards	Score	Qty.	Unit	Unit Cost	%
Sampson													
Sampson between Engellee - Runnels													
Block Length (ft)	215	Driveways Length (ft)	20				16	215	Driveways Length (ft)	20			
Land Use	Residential												
Sidewalks (width)	5	2	SF	\$2.00	100%	\$2,150.00	0	5	2	SF	\$2.00	\$537.50	0
Denomination		1075	SF	\$12.00	100%	\$12,900.00	0		268.75	SF	\$12.00	\$3,225.00	0
Installation		1075	SF	\$12.00	100%	\$12,900.00	0	9	0				0
Driveways (depth)	11	1					0		0				0
Denomination		55	SF	\$3.00	25%	\$165.00			0	SF	\$3.00	\$0.00	
Installation		55	SF	\$9.00	25%	\$495.00			0	SF	\$9.00	\$0.00	
Curbs		0					0		2				0
Denomination		0	LF	\$4.00		\$0.00			0	LF	\$4.00	\$0.00	
Installation		0	LF	\$14.00		\$0.00			215	LF	\$14.00	\$3,010.00	100%
Ramps		2					0		2				0
Denomination		2	Each	\$100.00		\$200.00			2	Each	\$100.00	\$200.00	
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00	\$3,000.00	
Stripping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00	\$3,000.00	
Lighting (spacing)	30	2	Each	\$3,000.00		\$18,000.00	1	30	2	Each	\$3,000.00	\$18,000.00	1
Landscaping		2					1		2				1
Trees (spacing)	30	6	Each	\$400.00		\$2,400.00		30	6	Each	\$400.00	\$2,400.00	
Curb to sidewalk	11	2145	SF	\$9.00		\$19,305.00		9	1755	SF	\$9.00	\$15,795.00	
treatment													
Irrigation / Tree		6	Each	\$100.00		\$600.00	0		6	Each	\$100.00	\$600.00	0
Street Amenities		2							2				
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00	\$2,000.00	
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00	\$1,000.00	
Bus Shelters						\$0.00				Each	\$6,000.00	\$0.00	
Total		11				\$66,215.00	2		10			\$53,767.50	2

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors																	
EAST SIDE OF STREET						WEST SIDE OF STREET											
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score		
Sampson	Runnels to Saltus Block Length (ft)	255	Driveways Length (ft)	36	Curb to B.L. (ft)	16	255	Driveways Length (ft)	36	Curb to B.L. (ft)	14						
	Land Use		2	Commercial				0	5	2					0		
	Sidewalks (width)	5		SF	\$2.00	100%	\$2,550.00			1275	SF	\$2.00	100%	\$2,550.00			
	Demolition		1275	SF	\$12.00	100%	\$15,300.00			1275	SF	\$12.00	100%	\$15,300.00			
	Installation		2					0	9	2					0		
	Driveways (depth)	11		SF	\$3.00	100%	\$1,188.00			324	SF	\$3.00	100%	\$972.00			
	Demolition		396	SF	\$9.00	100%	\$3,564.00			324	SF	\$9.00	100%	\$2,916.00			
	Installation		1					0		1					0		
	Curbs																
	Demolition		63.75	LF	\$4.00	25%	\$255.00			63.75	LF	\$4.00	25%	\$255.00		0	
	Installation		63.75	LF	\$14.00	25%	\$892.50			63.75	LF	\$14.00	25%	\$892.50		0	
	Ramps		2		Each	\$100.00		\$200.00		2		Each	\$100.00		\$200.00		0
	Demolition		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00			
	Installation			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00			
	Striping																

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors															
EAST SIDE OF STREET							WEST SIDE OF STREET								
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score
Sampson	Sampson between Seltus - Canal														
	Block Length (ft)	245	Driveways Length (ft)	112	Curb to B.L. (ft)	16	245	Driveways Length (ft)	25	Curb to B.L. (ft)	14				
	Land Use	Residential and Commercial						0	5	2	Residential				0
	Sidewalks (width)	5	2	SF	\$2,400	100%	\$2,450.00			1225	SF	\$2,000	100%	\$2,450.00	
	Demolition		1225	SF	\$12.00	100%	\$14,700.00			1225	SF	\$12.00	100%	\$14,700.00	
	Installation		1225	SF	\$12.00			0							
	Driveways (depth)	11	2	SF	\$3,600	100%	\$3,696.00		9	2	SF	\$3,000	100%	\$675.00	0
	Demolition		1232	SF	\$9.00	100%	\$11,088.00			225	SF	\$9.00	100%	\$2,025.00	
	Installation		1232	SF	\$9.00	100%		0		225	SF				0
	Curbs		0							0					
	Demolition		0	LF	\$4.00		\$0.00			0	LF	\$4.00		\$0.00	
	Installation		0	LF	\$14.00		\$0.00			0	LF	\$14.00		\$0.00	
	Ramps		2	Each	\$100.00		\$200.00	0		2	Each	\$100.00		\$200.00	0
	Demolition		2	Each	\$3,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
	Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
Striping				Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors															
EAST SIDE OF STREET							WEST SIDE OF STREET								
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score	
Sampson	Sampson between McAdams - Commerce														
	Block Length (ft)	300	Driveways Length (ft)		36	Curb to B.L. (ft)		16	300	Driveways Length (ft)		25	Curb to B.L. (ft)		14
	Land Use		Vacant					0	5	2	Residential				0
	Sidewalks (width)	5	2												
	Demolition			1500	SF	\$2.00	\$3,000.00	100%			1500	SF	\$2.00	\$3,000.00	
	Installation			1500	SF	\$12.00	\$18,000.00	100%			1500	SF	\$12.00	\$18,000.00	
	Driveways (depth)	11	2				0	9	2						0
	Demolition			396	SF	\$3.00	\$1,188.00	100%			225	SF	\$3.00	\$675.00	
	Installation			396	SF	\$9.00	\$3,564.00	100%			225	SF	\$9.00	\$2,025.00	
	Curbs						0		2						0
	Demolition			300	LF	\$4.00	\$1,200.00	100%			300	LF	\$4.00	\$1,200.00	
	Installation			300	LF	\$14.00	\$4,200.00	100%			300	LF	\$14.00	\$4,200.00	
	Ramps						0		2						0
	Demolition			2	Each	\$100.00	\$200.00				2	Each	\$100.00	\$200.00	
	Installation			2	Each	\$1,500.00	\$3,000.00				2	Each	\$1,500.00	\$3,000.00	
	Stripping						\$3,000.00							\$3,000.00	
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	1	30	2	Each	\$3,000.00		\$27,000.00	1	
Landscaping							1	2						1	
Trees (spacing)	30	8	Each	\$400.00	50%	\$3,200.00		30	9	Each	\$400.00	100%	\$3,600.00		
Curb to sidewalk treatment	11	2904	SF	\$9.00		\$26,136.00		9	2475	SF	\$9.00		\$22,275.00		
Irrigation / Tree															
Street Amenities			8	Each	\$100.00	\$800.00			9	Each	\$100.00		\$900.00		
Seating			1	Each	\$2,000.00	\$2,000.00		0	2	Each	\$2,000.00		\$2,000.00	0	
Bike Racks			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters						\$0.00							\$0.00		
Total			Each	\$6,000.00		\$95,488.00	2		14	Each	\$6,000.00		\$93,075.00	2	

East End District - East/West Corridors															
EAST SIDE OF STREET							WEST SIDE OF STREET								
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score	
Sampson	Sampson between Commerce - Sherman														
	Block Length (ft)	300	Driveways Length (ft)		37	Curb to B.L. (ft)		16	300	Driveways Length (ft)		48	Curb to B.L. (ft)		14
	Land Use			Commercial and Residential				0	5	2	Residential				0
	Sidewalks (width)	5	2												
	Demolition			1500	SF	\$2.00	\$3,000.00	100%			1500	SF	\$2.00	\$3,000.00	
	Installation			1500	SF	\$12.00	\$18,000.00	100%			1500	SF	\$12.00	\$18,000.00	
	Driveways (depth)	11	2				0	9	2						0
	Demolition			407	SF	\$3.00	\$1,221.00	100%			432	SF	\$3.00	\$1,296.00	
	Installation			407	SF	\$9.00	\$3,663.00	100%			432	SF	\$9.00	\$3,888.00	
	Curbs			1				0	0						0
	Demolition			75	LF	\$4.00	\$300.00	25%			0	LF	\$4.00	\$0.00	
	Installation			75	LF	\$14.00	\$1,050.00	25%			0	LF	\$14.00	\$0.00	
	Ramps							0	2						0
	Demolition			2	Each	\$100.00	\$200.00				2	Each	\$100.00	\$200.00	
	Installation			2	Each	\$1,500.00	\$3,000.00				2	Each	\$1,500.00	\$3,000.00	
	Stripping						\$3,000.00							\$3,000.00	
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	1	30	2	Each	\$3,000.00		\$24,000.00	1	
Landscaping							1	2						1	
Trees (spacing)	30	8	Each	\$400.00	25%	\$3,200.00		30	8	Each	\$400.00	100%	\$3,200.00		
Curb to sidewalk treatment	11	2893	SF	\$9.00		\$26,037.00		9	2268	SF	\$9.00		\$20,412.00		
Irrigation / Tree															
Street Amenities			8	Each	\$100.00	\$800.00			8	Each	\$100.00		\$800.00		
Seating			1	Each	\$2,000.00	\$2,000.00		0	2	Each	\$2,000.00		\$2,000.00	0	
Bike Racks			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles			1	Each	\$1,000.00	\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters						\$0.00							\$0.00		
Total			Each	\$6,000.00		\$91,471.00	2		12	Each	\$6,000.00		\$84,796.00	2	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
Sampson													
Sampson between Sherman - Garrow													
Block Length (ft)	300	Driveways Length (ft)		37		Curb to B.L. (ft)	16	300	Driveways Length (ft)		24		Curb to B.L. (ft)
Land Use	Commercial								Residential/office				
Sidewalks (width)	5	2					0	5	2				
Denomination		1500	SF	\$2.00	100%	\$3,000.00			1500	SF	\$2.00	100%	\$3,000.00
Installation		1500	SF	\$12.00	100%	\$18,000.00			1500	SF	\$12.00	100%	\$18,000.00
Driveways (depth)	11	2					0	9	2				
Denomination		407	SF	\$3.00	100%	\$1,221.00			216	SF	\$3.00	100%	\$648.00
Installation		407	SF	\$9.00	100%	\$3,663.00			216	SF	\$9.00	100%	\$1,944.00
Curbs		2					0		1				
Denomination		150	LF	\$4.00	50%	\$600.00			150	LF	\$4.00	50%	\$600.00
Installation		150	LF	\$14.00	50%	\$2,100.00			150	LF	\$14.00	50%	\$2,100.00
Ramps		2					0		2				
Denomination		2	Each	\$1,000.00		\$2,000.00			2	Each	\$1,000.00		\$2,000.00
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Striping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	1	30	2	Each	\$3,000.00		\$27,000.00
Landscaping		2					1		2				
Trees (spacing)	30	8	Each	\$4,000.00	25%	\$3,200.00		30	9	Each	\$4,000.00	550%	\$3,600.00
Curb to sidewalk treatment	11	2893	SF	\$9.00		\$26,037.00		9	2484	SF	\$9.00		\$22,356.00
Irrigation / Tree													
Street Amenities		2	Each	\$1,000.00		\$800.00			9	Each	\$1,000.00		\$900.00
Seating		1	Each	\$2,000.00		\$2,000.00	0		1	Each	\$2,000.00		\$2,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00
Total		14				\$92,821.00	2		13				\$90,348.00

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
Sampson													
Sampson between Garrow - Preston													
Block Length (ft)	290	Driveways Length (ft)		30		Curb to B.L. (ft)	18	290	Driveways Length (ft)		60		Curb to B.L. (ft)
Land Use	Commercial								Retail				
Sidewalks (width)	5	2					0	5	2				
Denomination		1450	SF	\$2.00	100%	\$2,900.00			1450	SF	\$2.00	100%	\$2,900.00
Installation		1450	SF	\$12.00	100%	\$17,400.00			1450	SF	\$12.00	100%	\$17,400.00
Driveways (depth)	13	2					0	12	2				
Denomination		390	SF	\$3.00	100%	\$1,170.00			720	SF	\$3.00	100%	\$2,160.00
Installation		390	SF	\$9.00	100%	\$3,510.00			720	SF	\$9.00	100%	\$6,480.00
Curbs		2					0		2				
Denomination		217.5	LF	\$4.00	75%	\$870.00			217.5	LF	\$4.00	75%	\$870.00
Installation		217.5	LF	\$14.00	75%	\$3,045.00			217.5	LF	\$14.00	75%	\$3,045.00
Ramps		2					0		2				
Denomination		2	Each	\$1,000.00		\$2,000.00			2	Each	\$1,000.00		\$2,000.00
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Striping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	1	30	2	Each	\$3,000.00		\$21,000.00
Landscaping		2					1		2				
Trees (spacing)	30	8	Each	\$4,000.00		\$3,200.00		30	7	Each	\$4,000.00	50%	\$2,800.00
Curb to sidewalk treatment	13	3380	SF	\$9.00		\$30,420.00		12	2760	SF	\$9.00		\$24,840.00
Irrigation / Tree													
Street Amenities		2	Each	\$1,000.00		\$800.00			7	Each	\$1,000.00		\$700.00
Seating		1	Each	\$2,000.00		\$2,000.00	0		1	Each	\$2,000.00		\$2,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00
Total		14				\$97,515.00	2		14				\$92,395.00

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors																	
EAST SIDE OF STREET						WEST SIDE OF STREET											
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score		
Sampson	Sampson between Preston - Harrisburg																
	Block Length (ft)	280	Driveways Length (ft)		60	Curb to B.L. (ft)		18	280	Driveways Length (ft)		60	Curb to B.L. (ft)		17		
	Land Use																
	Sidewalks (width)	5	2	1400	SF	100%	\$2,800.00	0	5	2	1400	SF	\$2.00	100%	\$2,800.00	0	
	Demolition			1400	SF	100%	\$16,800.00			1400	SF	\$12.00	100%	\$16,800.00			
	Driveways (depth)	13	2	780	SF	100%	\$2,340.00	0	12	2	360	SF	\$3.00	50%	\$1,080.00	0	
	Demolition			780	SF	100%	\$7,020.00			360	SF	\$9.00	50%	\$3,240.00			
	Curbs		1	140	LF	50%	\$560.00	0	1	140	LF	\$4.00	50%	\$560.00	0		
	Demolition			140	LF	50%	\$1,960.00			140	LF	\$14.00	50%	\$1,960.00			
	Ramps		2				\$200.00	0	2	2	Each	\$100.00		\$200.00	0		
	Demolition			2	Each	\$3,000.00	100%	\$3,000.00		2	Each	\$1,500.00		\$3,000.00			
	Installation			2	Each	\$3,000.00		\$3,000.00		2	Each	\$3,000.00		\$3,000.00			
	Striping				Budget						Budget						
	Lighting (spacing)	30	2	7	Each	\$3,000.00		\$21,000.00	1	30	2	7	Each	\$3,000.00		\$21,000.00	1
	Landscaping		2						1	2	7	Each	\$400.00	75%	\$2,800.00	1	
	Trees (spacing)	30	7	Each	\$400.00		\$2,800.00		30	7	Each	\$400.00		\$2,800.00			
	Curb to sidewalk	13	2860	SF	\$9.00		\$25,740.00		12	2640	SF	\$9.00		\$23,760.00			
	treatment																
	Irrigation / Tree		7	Each	\$100.00		\$700.00	0	2	7	Each	\$100.00		\$700.00	0		
	Street Amenities		2						0	2					0		
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00				
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00				
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00				
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00				
Total		13					\$91,920.00	2	13					\$84,900.00	2		

East End District - East/West Corridors																	
EAST SIDE OF STREET						WEST SIDE OF STREET											
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score		
York	York between EAST of Harrisburg - Preston																
	Block Length (ft)	290	Driveways Length (ft)		50	Curb to B.L. (ft)		15	290	Driveways Length (ft)		60	Curb to B.L. (ft)		15		
	Land Use																
	Sidewalks (width)	5	2	1450	SF	100%	\$2,900.00	0	5	2	1450	SF	\$2.00	100%	\$2,900.00	0	
	Demolition			1450	SF	100%	\$17,400.00			1450	SF	\$12.00	100%	\$17,400.00			
	Driveways (depth)	10	2	600	SF	100%	\$1,800.00	0	10	2	600	SF	\$3.00	100%	\$1,800.00		
	Demolition			500	SF	100%	\$4,500.00			600	SF	\$9.00	100%	\$5,400.00			
	Curbs		1	72.5	LF	25%	\$2,900.00	0	1	145	LF	\$4.00	50%	\$580.00	0		
	Demolition			72.5	LF	25%	\$1,015.00			145	LF	\$14.00	50%	\$2,030.00			
	Ramps		2				\$200.00	0	2	2	Each	\$100.00		\$200.00	0		
	Demolition			2	Each	\$3,000.00	100%	\$3,000.00		2	Each	\$1,500.00		\$3,000.00			
	Installation			2	Each	\$3,000.00		\$3,000.00		2	Each	\$3,000.00		\$3,000.00			
	Striping				Budget						Budget						
	Lighting (spacing)	30	2	8	Each	\$3,000.00		\$24,000.00	1	30	2	7	Each	\$3,000.00		\$21,000.00	1
	Landscaping		2						1	2	7	Each	\$400.00		\$2,800.00	1	
	Trees (spacing)	30	8	Each	\$400.00		\$3,200.00		30	7	Each	\$400.00		\$2,800.00			
	Curb to sidewalk	10	2400	SF	\$9.00		\$21,600.00		10	2300	SF	\$9.00		\$20,700.00			
	treatment																
	Irrigation / Tree		8	Each	\$100.00		\$800.00	0		7	Each	\$100.00		\$700.00			
	Street Amenities		2						0	2					0		
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00				
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00				
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00				
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00				
Total		13					\$87,405.00	2	13					\$85,510.00	2		

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Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
York													
York between Sherman - Commerce													
Block Length (ft)	318	Driveways Length (ft)	36				15	318	Driveways Length (ft)	60			15
Land Use		Retail							Residential				
Sidewalks (width)	5	2	SF	\$2.00	100%	\$3,180.00	0	5	2	SF	\$2.00	100%	\$3,180.00
Demolition													0
Installation													
Driveways (depth)	10	2	SF	\$3.00	100%	\$1,080.00	0	10	2	SF	\$3.00	100%	\$1,080.00
Demolition													0
Installation													
Curbs		1	LF	\$4.00	50%	\$636.00	0		1	LF	\$4.00	25%	\$318.00
Demolition													0
Installation													
Ramps		2	Each	\$100.00		\$200.00	0		2	Each	\$100.00		\$200.00
Demolition													0
Installation													
Striping													
Lighting (spacing)	30	2	Each	\$3,000.00		\$27,000.00	1	30	2	Each	\$3,000.00		\$24,000.00
Landscaping		2	Each	\$400.00		\$3,600.00	1		2	Each	\$400.00		\$3,200.00
Trees (spacing)	30	9	Each	\$25,380.00		\$228,420.00		30	8	Each	\$25,380.00		\$203,040.00
Curbs to sidewalk treatment	10							10					
Irrigation / Tree		9	Each	\$900.00		\$8,100.00	0		8	Each	\$900.00		\$7,200.00
Street Amenities		2	Each	\$2,000.00		\$4,000.00			2	Each	\$2,000.00		\$4,000.00
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles													
Bus Shelters													
Total		13				\$96,522.00	2		13				\$92,311.00

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
York													
York between Commerce - McAshan													
Block Length (ft)	290	Driveways Length (ft)	48				15	290	Driveways Length (ft)	48			15
Land Use		Mixed							Residential and Commercial				
Sidewalks (width)	5	2	SF	\$2.00	100%	\$2,900.00	0	5	2	SF	\$2.00	100%	\$2,900.00
Demolition													0
Installation													
Driveways (depth)	10	2	SF	\$3.00	100%	\$1,440.00	0	10	2	SF	\$3.00	100%	\$1,440.00
Demolition													0
Installation													
Curbs		1	LF	\$4.00	25%	\$290.00	0		1	LF	\$4.00	25%	\$290.00
Demolition													0
Installation													
Ramps		2	Each	\$100.00		\$200.00	0		2	Each	\$100.00		\$200.00
Demolition													0
Installation													
Striping													
Lighting (spacing)	30	2	Each	\$3,000.00		\$24,000.00	1	30	2	Each	\$3,000.00		\$24,000.00
Landscaping		2	Each	\$400.00		\$3,200.00	1		2	Each	\$400.00		\$3,200.00
Trees (spacing)	30	8	Each	\$21,780.00	50%	\$87,120.00		30	8	Each	\$21,780.00		\$87,120.00
Curbs to sidewalk treatment	10							10					
Irrigation / Tree		8	Each	\$800.00		\$6,400.00	0		8	Each	\$800.00		\$6,400.00
Street Amenities		2	Each	\$2,000.00		\$4,000.00			2	Each	\$2,000.00		\$4,000.00
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles													
Bus Shelters													
Total		13				\$87,345.00	2		13				\$87,345.00

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors												
EAST SIDE OF STREET						WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
York												
York between Canal - Salrus												
Block Length (ft)	250	Driveways Length (ft)	20	Curb to B.L. (ft)	15	250	15	Driveways Length (ft)	48	Curb to B.L. (ft)	15	15
Land Use	Commercial					Residential		York between McAshin to Canal				
Sidewalks (width)	5	2				5	0	2				0
Demolition		1250	SF	\$2,500.00	100%				1250	SF	\$2,500.00	100%
Installation		1250	SF	\$15,000.00	100%				1250	SF	\$15,000.00	100%
Driveways (depth)	10	2				10	0	2				0
Demolition		200	SF	\$600.00	100%				480	SF	\$3,000.00	100%
Installation		200	SF	\$900.00	100%				480	SF	\$900.00	100%
Curbs							0	1				0
Demolition		62.5	LF	\$4.00	25%				62.5	LF	\$4.00	25%
Installation		62.5	LF	\$14.00	25%				62.5	LF	\$14.00	25%
Ramps		2					0	2				0
Demolition		2	Each	\$100.00					2	Each	\$100.00	
Installation		2	Each	\$1,500.00					2	Each	\$1,500.00	
Stripping									Budget		\$3,000.00	
Lighting (spacing)	30	2	Each	\$3,000.00			1	2	6	Each	\$3,000.00	
Landscaping		2					1	2	6	Each	\$400.00	
Trees (spacing)	30	7	Each	\$400.00	100%				2020	SF	\$9.00	
Curb to sidewalk	10	2300	SF	\$9.00								
treatment												
Irrigation / Tree		7	Each	\$100.00					6	Each	\$100.00	
Street Amenities		2					0	2				0
Seating		1	Each	\$2,000.00					1	Each	\$2,000.00	
Bike Racks		1	Each	\$1,000.00					1	Each	\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00					1	Each	\$1,000.00	
Bus Shelters							\$0.00					
Total		13				\$76,425.00	2	13			\$6,000.00	
											\$73,765.00	2

East End District - East/West Corridors												
EAST SIDE OF STREET						WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%
York												
York between Salrus - Runnels												
Block Length (ft)	250	Driveways Length (ft)	12	Curb to B.L. (ft)	15	250	15	Driveways Length (ft)	47	Curb to B.L. (ft)	15	15
Land Use	Residential					Commercial						
Sidewalks (width)	5	2				5	0	1				0
Demolition		1250	SF	\$2,500.00	100%				1250	SF	\$2,500.00	100%
Installation		1250	SF	\$15,000.00	100%				1250	SF	\$15,000.00	100%
Driveways (depth)	10	2				10	0	2				0
Demolition		120	SF	\$360.00	100%				470	SF	\$1,410.00	100%
Installation		120	SF	\$900.00	100%				470	SF	\$900.00	100%
Curbs		1					0	1				0
Demolition		125	LF	\$500.00	50%				125	LF	\$4.00	50%
Installation		125	LF	\$1,750.00	50%				125	LF	\$1,750.00	50%
Ramps		2					0	2				0
Demolition		2	Each	\$200.00					2	Each	\$100.00	
Installation		2	Each	\$1,500.00					2	Each	\$1,500.00	
Stripping									Budget		\$3,000.00	
Lighting (spacing)	30	2	Each	\$5,000.00			1	2	6	Each	\$3,000.00	
Landscaping		2					1	2				1
Trees (spacing)	30	7	Each	\$400.00	100%				6	Each	\$400.00	
Curb to sidewalk	10	2380	SF	\$9.00					2030	SF	\$9.00	
treatment												
Irrigation / Tree		7	Each	\$100.00			0	2	6	Each	\$100.00	
Street Amenities		2										0
Seating		1	Each	\$2,000.00					1	Each	\$2,000.00	
Bike Racks		1	Each	\$1,000.00					1	Each	\$1,000.00	
Waste Receptacles		1	Each	\$1,000.00					1	Each	\$1,000.00	
Bus Shelters							\$0.00					
Total		13				\$77,310.00	2	12			\$6,000.00	
											\$74,860.00	2

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Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
York													
York between Hutchison to Hutchison													
Block Length (ft)	480	Driveways Length (ft)	0	Curb to B.L. (ft)	12	500	12	500	Driveways Length (ft)	40	Curb to B.L. (ft)	10	10
Land Use	Residential												
Sidewalks (width)	5	2	SF	\$2.00	100%	\$4,800.00	0	5	2	SF	\$2.00	100%	\$5,000.00
Demolition		2400	SF	\$12.00	100%	\$28,800.00			2500	SF	\$12.00	100%	\$30,000.00
Installation		2400	SF	\$12.00	100%	\$28,800.00			2500	SF	\$12.00	100%	\$30,000.00
Driveways (depth)	7	0	SF	\$3.00		\$0.00	0	5	2	SF	\$3.00	100%	\$600.00
Demolition		0	SF	\$9.00		\$0.00			200	SF	\$9.00	100%	\$1,800.00
Installation		0	SF	\$9.00		\$0.00			200	SF	\$9.00	100%	\$1,800.00
Curbs		1	LF	\$4.00	25%	\$480.00	0		1	LF	\$4.00	25%	\$500.00
Demolition		120	LF	\$14.00	25%	\$1,680.00			125	LF	\$14.00	25%	\$1,750.00
Installation		120	LF	\$14.00	25%	\$1,680.00			125	LF	\$14.00	25%	\$1,750.00
Ramps		2	Each	\$100.00		\$200.00	0		2	Each	\$100.00		\$200.00
Demolition		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Stripping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00
Lighting (spacing)	30	2	Each	\$3,000.00		\$6,000.00	0	30	2	Each	\$3,000.00		\$6,000.00
Landscaping		2	Each	\$400.00	100%	\$800.00	0		2	Each	\$400.00	100%	\$800.00
Trees (spacing)	30	16	Each	\$400.00	100%	\$6,400.00		30	15	Each	\$400.00	100%	\$6,000.00
Curb to sidewalk treatment	7	3360	SF	\$9.00		\$30,240.00		5	2300	SF	\$9.00		\$20,700.00
Irrigation / Tree		16	Each	\$100.00		\$1,600.00			15	Each	\$100.00		\$1,500.00
Street Amenities		2	Each	\$2,000.00		\$4,000.00	0		2	Each	\$2,000.00		\$4,000.00
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00
Total		11				\$132,200.00	0		13				\$123,050.00
East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
York													
York between Hutchison to Freund													
Block Length (ft)	450	Driveways Length (ft)	0	Curb to B.L. (ft)	8	450	8	450	Driveways Length (ft)	60	Curb to B.L. (ft)	9	9
Land Use	Residential												
Sidewalks (width)	5	2	SF	\$2.00	100%	\$4,500.00	0	5	2	SF	\$2.00	100%	\$4,500.00
Demolition		2250	SF	\$12.00	100%	\$27,000.00			2250	SF	\$12.00	100%	\$27,000.00
Installation		2250	SF	\$12.00	100%	\$27,000.00			2250	SF	\$12.00	100%	\$27,000.00
Driveways (depth)	3	0	SF	\$3.00		\$0.00	0	4	2	SF	\$3.00	100%	\$720.00
Demolition		0	SF	\$9.00		\$0.00			240	SF	\$9.00	100%	\$2,160.00
Installation		0	SF	\$9.00		\$0.00			240	SF	\$9.00	100%	\$2,160.00
Curbs		1	LF	\$4.00	25%	\$450.00	0		1	LF	\$4.00	25%	\$450.00
Demolition		112.5	LF	\$14.00	25%	\$1,575.00			112.5	LF	\$14.00	25%	\$1,575.00
Installation		112.5	LF	\$14.00	25%	\$1,575.00			112.5	LF	\$14.00	25%	\$1,575.00
Ramps		2	Each	\$100.00		\$200.00	0		2	Each	\$100.00		\$200.00
Demolition		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Stripping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00
Lighting (spacing)	30	2	Each	\$3,000.00		\$6,000.00	0	30	2	Each	\$3,000.00		\$6,000.00
Landscaping		2	Each	\$400.00	100%	\$800.00	0		2	Each	\$400.00	100%	\$800.00
Trees (spacing)	30	15	Each	\$400.00	100%	\$6,000.00		30	13	Each	\$400.00	100%	\$5,200.00
Curb to sidewalk treatment	3	1350	SF	\$9.00		\$12,150.00		4	1560	SF	\$9.00		\$14,040.00
Irrigation / Tree		15	Each	\$100.00		\$1,500.00	0		13	Each	\$100.00		\$1,300.00
Street Amenities		2	Each	\$2,000.00		\$4,000.00			2	Each	\$2,000.00		\$4,000.00
Seating		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00
Total		11				\$108,375.00	0		13				\$106,145.00

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors																
EAST SIDE OF STREET								WEST SIDE OF STREET								
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score	
York	York between Freund - Ball															
	Block Length (ft)	262	Driveways Length (ft)	24	Curb to B.L. (ft)	12	262	Driveways Length (ft)	0	Curb to B.L. (ft)	10					
	Land Use		Residential						Residential							
	Sidewalks (width)	5	2	1310 SF	\$2.00	100%	\$2,620.00	0	5	2	1310 SF	\$2.00	100%	\$2,620.00	0	
	Demolition			1310 SF	\$12.00	100%	\$15,720.00			1310 SF	\$12.00	\$15,720.00	100%	\$15,720.00		
	Installation															
	Driveways (depth)	7	2	168 SF	\$3.00	100%	\$504.00	0	5	0	SF	\$3.00		\$0.00	0	
	Demolition			168 SF	\$9.00	100%	\$1,512.00			0 SF	\$9.00	\$0.00		\$0.00		
	Installation															
	Curbs		1	131 LF	\$4.00	50%	\$524.00	0		2	65.5 LF	\$4.00	25%	\$262.00	0	
	Demolition			131 LF	\$14.00	50%	\$1,834.00			65.5 LF	\$14.00	\$917.00	25%	\$917.00		
	Installation															
	Ramps		2	2	Each	\$100.00		\$200.00	0	2	2	Each	\$100.00		\$200.00	0
	Demolition			2	Each	\$1,500.00		\$3,000.00		2	2	Each	\$1,500.00		\$3,000.00	
	Installation			2	Budget	\$3,000.00		\$3,000.00			Budget	\$3,000.00		\$3,000.00		
	Stripping															
	Lighting (spacing)	30	2	7	Each	\$3,000.00		\$21,000.00	1	30	8	Each	\$3,000.00		\$24,000.00	0
	Landscaping		2						1	2					0	
Trees (spacing)	30	7	Each	\$400.00	75%	\$2,800.00		30	8	Each	\$400.00	75%	\$3,200.00	0		
Curb to sidewalk treatment	7		1666 SF	\$9.00		\$14,994.00		5	1310 SF	\$9.00			\$11,790.00			
Irrigation / Tree			7	Each	\$100.00		\$700.00			8	Each	\$100.00		\$800.00		
Street Amenities		2						0	2					0		
Seating			1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00		
Bike Racks			1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles			1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters							\$0.00							\$0.00		
Total				Each	\$6,000.00		\$72,408.00	2		12	Each	\$6,000.00		\$69,509.00	0	

East End District - East/West Corridors																
EAST SIDE OF STREET								WEST SIDE OF STREET								
	Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost	Rev. Score	
York	York between Ball to RR															
	Block Length (ft)	260	Driveways Length (ft)	12	Curb to B.L. (ft)	10	260	Driveways Length (ft)	0	Curb to B.L. (ft)	10					
	Land Use		Residential						Residential							
	Sidewalks (width)	5	2	1300 SF	\$2.00	100%	\$2,600.00	0	5	2	1300 SF	\$2.00	100%	\$2,600.00	0	
	Demolition			1300 SF	\$12.00	100%	\$15,600.00			1300 SF	\$12.00	\$15,600.00	100%	\$15,600.00		
	Installation															
	Driveways (depth)	5	2	60 SF	\$3.00	100%	\$180.00	0	5	0	SF	\$3.00		\$0.00	0	
	Demolition			60 SF	\$9.00	100%	\$540.00			0 SF	\$9.00	\$0.00		\$0.00		
	Installation															
	Curbs		1	65 LF	\$4.00	25%	\$260.00	0		2	130 LF	\$4.00	50%	\$520.00	0	
	Demolition			65 LF	\$14.00	25%	\$910.00			130 LF	\$14.00	\$1,820.00	50%	\$1,820.00		
	Installation															
	Ramps		2	2	Each	\$100.00		\$200.00	0	2	2	Each	\$100.00		\$200.00	0
	Demolition			2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00	
	Installation			2	Budget	\$3,000.00		\$3,000.00			Budget	\$3,000.00		\$3,000.00		
	Stripping															
	Lighting (spacing)	30	2	8	Each	\$3,000.00		\$24,000.00	0	30	8	Each	\$3,000.00		\$24,000.00	0
	Landscaping		2						0	2					0	
Trees (spacing)	30		8	Each	\$400.00		\$3,200.00		30	8	Each	\$400.00		\$3,200.00		
Curb to sidewalk treatment	5		1240 SF	\$9.00		\$11,160.00		5	1300 SF	\$9.00			\$11,700.00			
Irrigation / Tree			8	Each	\$100.00		\$800.00			8	Each	\$100.00		\$800.00		
Street Amenities		2						0	2					0		
Seating			1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00		
Bike Racks			1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Waste Receptacles			1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00		
Bus Shelters							\$0.00							\$0.00		
Total				Each	\$6,000.00		\$69,450.00	0		12	Each	\$6,000.00		\$70,440.00	0	

Appendix E – Livable Centers Analysis Spreadsheet

East End District - East/West Corridors													
EAST SIDE OF STREET							WEST SIDE OF STREET						
Standards	Score	Qty.	Unit	Unit Cost	%	Cost	New Score	Score	Qty.	Unit	Unit Cost	%	Cost
York													
York between RR to Lenke (@ Tony Morun Park)													
Block Length (ft)	260	Driveways Length (ft)	0	0	Curb to B.L. (ft)	14	260	Driveways Length (ft)	0	0	Curb to B.L. (ft)	10	
Land Use	5	Office	2										
Sidewalks (width)													
Demolition		1300	SF	\$2.00	100%	\$2,600.00			1300	SF	\$2.00	100%	\$2,600.00
Installation		1300	SF	\$12.00	100%	\$15,600.00			1300	SF	\$12.00	100%	\$15,600.00
Driveways (depth)	9	0							5				
Demolition		0	SF	\$3.00		\$0.00			0	SF	\$3.00		\$0.00
Installation		0	SF	\$9.00		\$0.00			0	SF	\$9.00		\$0.00
Curbs		1							1				
Demolition		65	LF	\$4.00	25%	\$260.00			65	LF	\$4.00	25%	\$260.00
Installation		65	LF	\$14.00	25%	\$910.00			65	LF	\$14.00	25%	\$910.00
Ramps		2							2				
Demolition		2	Each	\$100.00		\$200.00			2	Each	\$100.00		\$200.00
Installation		2	Each	\$1,500.00		\$3,000.00			2	Each	\$1,500.00		\$3,000.00
Stripping			Budget	\$3,000.00		\$3,000.00				Budget	\$3,000.00		\$3,000.00
Lighting (spacing)	30	2	8	Each		\$24,000.00	0	30	2	8	Each		\$24,000.00
Landscaping		2					0		2				
Trees (spacing)	30	8	Each	\$400.00		\$3,200.00		30	8	Each	\$400.00		\$3,200.00
Curb to sidewalk treatment	9	2340	SF	\$9.00		\$21,060.00		5	1300	SF	\$9.00		\$11,700.00
Irrigation / Tree		8	Each	\$100.00		\$800.00			8	Each	\$100.00		\$800.00
Street Amenities		2					0		2				
Seating		1	Each	\$2,000.00		\$2,000.00			1	Each	\$2,000.00		\$2,000.00
Bike Racks		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Waste Receptacles		1	Each	\$1,000.00		\$1,000.00			1	Each	\$1,000.00		\$1,000.00
Bus Shelters			Each	\$6,000.00		\$0.00				Each	\$6,000.00		\$0.00
Total		11				78630	0		11				\$69,270.00