

Goal 7: Coordinated Land Use Development and Mobility Planning that Supports the Preservation of Neighborhood Integrity

There is an intrinsic link between land use, form, and mobility. For example, land use determines where people take a trip to the grocery store to pick up milk. Form determines how people get to the grocery store. Form is important because of scale and density, both of which determine distances from one destination to the next. The closer the store is to your house, the more likely you are to walk. Providing a variety of land uses within a short distance increases opportunities to walk or bike instead of drive and makes providing transit services more efficient.

If Sugar Land wants alternative transportation options to cars, there are land use considerations that can support those alternatives. According to the Sugar Land Mobility Survey land use planning is the second most important component to providing Superior Mobility for Sugar Land today and in the future. Land use and form are critical components to providing efficient, convenient and cost-effective transportation. Additionally, 67% of respondents agreed that more mixed-use development would be beneficial to the City of Sugar Land. The Form & Typology Matrix in **Figure 10.1-10.2** highlights the relationship between the forms of various land uses and how easy it is to serve those land uses with various modes of transportation.

The matrix identifies forms for each land use with several categories within office, retail, and residential. For example, Business Parks are home to a variety of tenants and are typically set 50 to 200 feet back from the street by surface parking lots with access off a main arterial road. This typology is differentiated from Corporate Campuses, which are typically set back over 200 feet from the public street and can often have controlled access. A Business Park development is easier to serve by bus than a Corporate Campus, which has a long walking distance from the property entrance to the building entrance and is more easily accessed by car. Based on the land planning and zoning in the City, Sugar Land has been comprised mostly of segregated clusters of land uses. Commercial uses are clustered along main arterial and collector roads. The majority of development has been residential cul-de-sac, single family style developments located within planned communities such as First Colony, Sugar Creek, Telfair and Avalon. By mapping the land use types and their relationship to transit, areas of potential opportunity for each mode are revealed as shown in **Figures 10.3-10.4**.

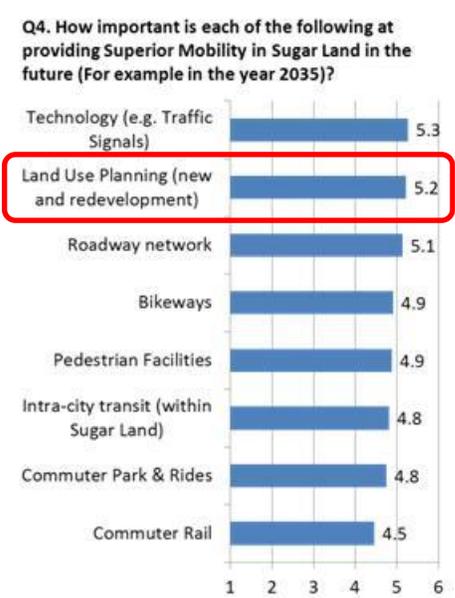




Figure 10.1

SUGAR LAND MOBILITY

FORM & TYPOLOGY

The matrix indicates which transportation modes typically serve the various land uses. The matrix is one tool that can be used to identify mobility solutions in Sugar Land.

EASY POSSIBLE DIFFICULT

Land Use	PEDESTRIAN	BICYCLE	CAR	WANPOOL	PARK & RIDE	BUS	LOCAL RAIL	REGIONAL RAIL
CUL DE SAC SINGLE FAMILY Most Sugar Land residents live in low-density, master-planned communities featuring cul-de-sacs. Sugar Creek was built in the 1970s, and was the first of many others, including Avalon, First Colony, Jellin, and River Park Colony. Connectivity in these areas is low.	Walking is the most popular mode of transportation. It is limited to short distances and has a low user cost. Infrastructure (sidewalks) is inexpensive.	Bicycling is flexible; you can use it for short-to-medium distances. User cost is low and there can be little or no incremental infrastructure cost when riding on roads.	Cars are the most flexible mode of transport to schedule and stop. Distance travelled is unlimited, but the cost to users is high, and road construction is very costly.	Van pools operate on a fixed schedule in small groups (7-15 riders) from home to work. The user cost is low and there is no infrastructure cost - the roads are already there.	Park & Ride lots operate on a fixed schedule. Suburban ridership numbers are required and user cost is low. Infrastructure costs are shared with businesses.	Buses operate at varying regional and express routes. Routes have frequent service, low ridership cost, and low infrastructure cost. They require medium density.	Local rail operates on a fixed route in high-density urban areas. Ridership is more expensive than buses. Infrastructure is very expensive.	Regional rail features long distances between stations. Ridership pay more than local rail and frequent. Infrastructure is very expensive.
ORIGINAL RESIDENTIAL SINGLE FAMILY Sugar Land's original neighborhoods were built around the Imperial Sugar Factory. These single family residences were constructed in the 1920s on a grid street pattern, which allows for high connectivity of streets. This type of low density housing construction continued into the 1960s.	Long walking distances, limited area destinations	Slower traffic makes on-street bicycling safer	Mostly only local traffic	Commuters save time and money	Commuters save time and money	Low connectivity and low density	Low density	Low density
TOWNHOMES Sugar Land is seeing more townhome development as the market demand shifts to include lower-maintenance housing options. This small-lot housing type is typically located near more commercial areas with access to main thoroughfares.	Short blocks, easy to walk	Slower traffic makes on-street bicycling safer	Streets easy to navigate, on-street parking plentiful	Commuters save time and money	Commuters save time and money	Good connectivity	Low density	Low density
MULTI-FAMILY RESIDENTIAL Multi-family residential options are limited in Sugar Land, typically for-sale units. They are well connected to activities and are near major thoroughfares. As a high-density land use type, multi-family housing is very supportive of transit stops.	Higher density, likely close to activity centers	Proximity to activity centers	Streets easy to navigate	Commuters save time and money	Commuters save time and money	Good connectivity, access to many activities	Depends on connectivity and ridership numbers	Low activity
STRIP RETAIL Many master planned communities feature separated land uses with strip commercial sites lining the main roads. Typically there are 2 to 4 rows of parking between the main road and the public sidewalk from the building. Building entrances are designed primarily for cars.	Parking lots separate street from building entrances	Depends on location, safe routes, and availability of bicycle parking	Lots of parking, easy access from main roads	Home to work trips only	Home to work trips only	Depends on location and connectivity	Low density, low activity	Depends on connectivity and ridership numbers
SHOPPING MALL First Colony Mall first opened its doors in 1996, offering Sugar Land over one million sq. ft. of retail. In 2006, the mall added 40,000 sq. ft. of retail and restaurant options in a new outdoor shopping area. The shopping mall is surrounded by surface parking and is a local destination.	Internal pedestrian environment usually not connected to external network	Depends on location, safe routes, and availability of bicycle parking	Lots of parking, easy access from main roads	Home to work trips only	Home to work trips only	High-density activity center	High-density activity center	High-density activity center
MIXED USE Mixed-use developments are more popular in Sugar Land since the completion of the new high-density Town Square. Walkable streets featuring restaurants and shops beneath offices are well-connected by high-quality sidewalks. On-site housing adds people to the street, creates an active street life.	Lots of activities within walking distance	Lots of activities within biking distance	Garage and on-street parking, lots of destinations, good connectivity	Primarily home to work trips	Design dependent; Primarily home to work trips; potential create activity for destination	High-density activity center	High-density activity center	High-density activity center



Figure 10.2

SUGAR LAND MOBILITY

FORM & TYPOLOGY

EASY POSSIBLE DIFFICULT

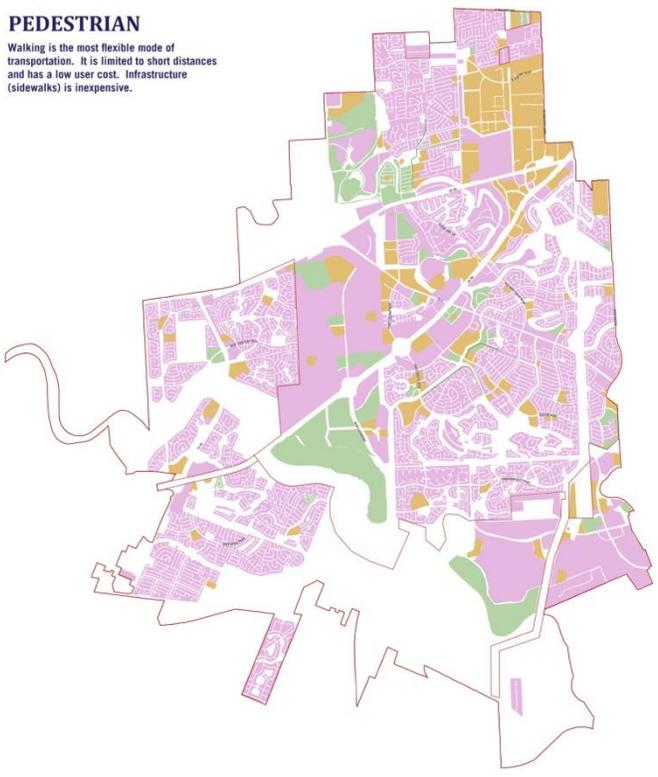
Form & Typology	PEDESTRIAN	BICYCLE	CAR	VANPOOL	PARK & RIDE	BUS	LOCAL RAIL	REGIONAL RAIL
SCHOOLS Primary and secondary schools are typically located at the heart of residential communities with access to major thoroughfares. They are high-density neighborhood centers with bustling morning and evening activities.	Not all neighborhoods feature sidewalk routes to schools	Located within residential areas, close proximity to users	Well-designed vehicle routes for pick-up and drop-off	Home to work trips only	Home to work trips only	High activity	Lacks connectivity	Mostly local traffic, typically not a regional destination
COLLEGE CAMPUS College campuses are pedestrian focused areas with most parking along campus perimeter areas. Buildings are situated within close proximity to each other and can be connected by plazas and open space.	Strong internal pedestrian network	Strong internal bicycling network (likely shared with pedestrians/cars)	Parking along campus perimeter	Commuters can be students or employees	User specific	High activity, local destination	High activity, local destination	High activity, regional destination
BUSINESS PARK Business parks are home to a variety of tenants including office, high tech, manufacturing and distribution. Typically, buildings are set back from the street (approx. 200 ft) by a surface parking lot and accessed off a main arterial road with heavy truck capacity.	Low density sites create long walking distances	Strong internal bicycling network (likely shared with pedestrians/cars)	Access off main roads, parking plentiful	Commuters save time and money	Low density	Access to main roads, building proximity to street	Dependent on connectivity to other activity centers, ridership numbers	Dependent on connectivity to other activity centers, ridership numbers
SUBURBAN OFFICE BUILDINGS Suburban office buildings are located along major routes such as freeways and arterial roads. Building entrances are typically 200+ feet from the public sidewalk, but connections to destinations are not guaranteed. Parking on site is plentiful.	Buildings are usually close to the public sidewalk, but connections to destinations are not guaranteed	Proximity of other uses, on-street bicycling connectivity likely	Access off main roads, parking plentiful	Commuters save time and money	Low density	Access to main roads, building proximity to street	Dependent on connectivity to other activity centers, ridership numbers	Dependent on connectivity to other activity centers, ridership numbers
CORPORATE CAMPUS Corporate campuses can feature from a large area on a regular basis (e.g., regional or national events). They can be a regional or national destination usually require medium to high levels of connectivity in order to accommodate strong concentrations of regular activity.	High security sites, controlled access, long walking distances to buildings from public streets	On-street bicycling connectivity likely	Access off main roads, parking plentiful	Commuters save time and money	Low density	Long distance from public street to building entrance	Long distance from public street to building entrance	Long distance from public street to building entrance
REGIONAL MEDICAL Regional medical facilities are built along major routes with medium-high connectivity to clients traveling from towns in the region. These high-density sites feature plenty of surface or garage parking. Typically, they are low-rise and operate as an independent campus.	Depends on sidewalk network between buildings and connections to adjacent destinations.	Proximity of other uses, on-street bicycling connectivity likely	Access off main roads, parking plentiful	Medical employees only, not for patients	Low density	Access to main roads, high activity	High activity	High activity
PARKS & EVENT FACILITIES Parks and event facilities draw activity from a large area on a regular basis (e.g., regional or national events). They can be a regional or national destination usually require medium to high levels of connectivity in order to accommodate strong concentrations of regular activity.	Inherently pedestrian friendly	Inherently bicycle friendly	Access off main roads, parking plentiful	Home to work trips only	Trip frequency, limited time spent at location	High activity	High activity	High activity
INDUSTRIAL Industrial uses feature controlled or highway access, but can handle heavy truck activity. Parking is accommodated on site. Sites are located far from incompatible uses (e.g., residential) and typically have a heavy security perimeter.	Heavy security perimeter, long walking distances to site entry	Location on busy, high-speed roads to provide access for heavy trucking	Access off main roads	Commuters save time and money	No connectivity	No connectivity	No connectivity	No connectivity



Figure 10.3

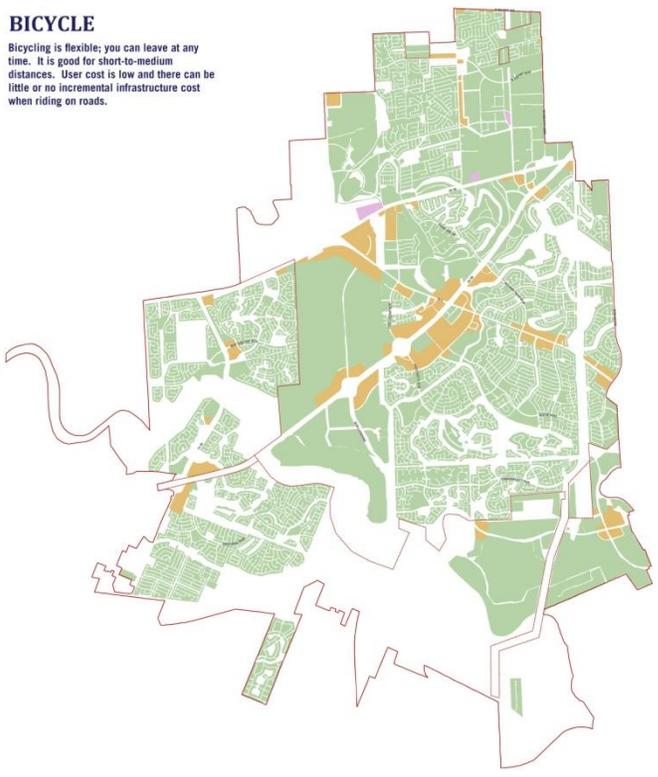
PEDESTRIAN

Walking is the most flexible mode of transportation. It is limited to short distances and has a low user cost. Infrastructure (sidewalks) is inexpensive.



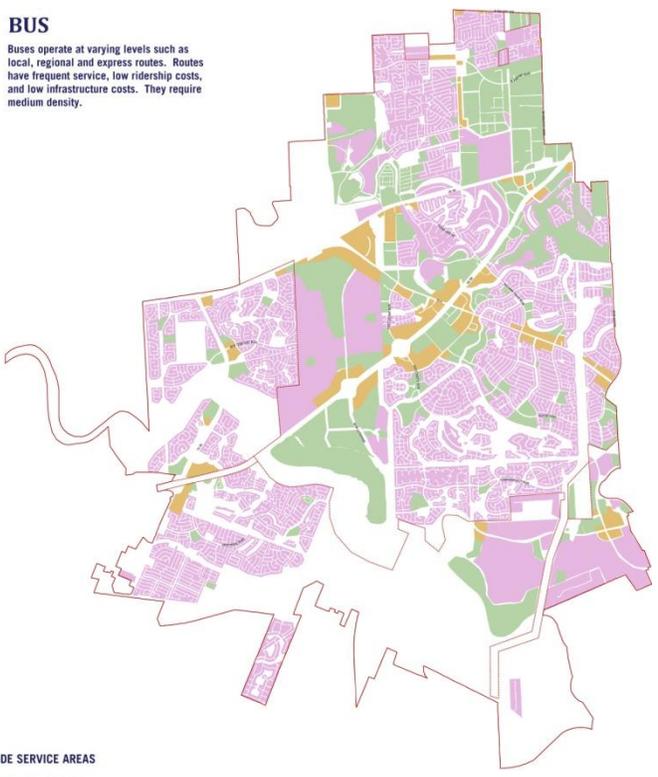
BICYCLE

Bicycling is flexible; you can leave at any time. It is good for short-to-medium distances. User cost is low and there can be little or no incremental infrastructure cost when riding on roads.



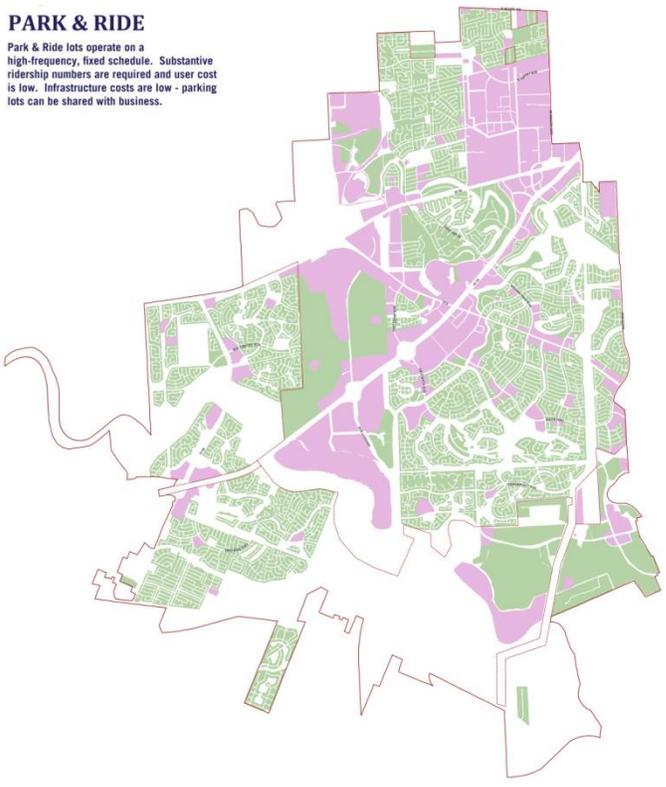
BUS

Buses operate at varying levels such as local, regional and express routes. Routes have frequent service, low ridership costs, and low infrastructure costs. They require medium density.



PARK & RIDE

Park & Ride lots operate on a high-frequency, fixed schedule. Substantive ridership numbers are required and user cost is low. Infrastructure costs are low - parking lots can be shared with business.



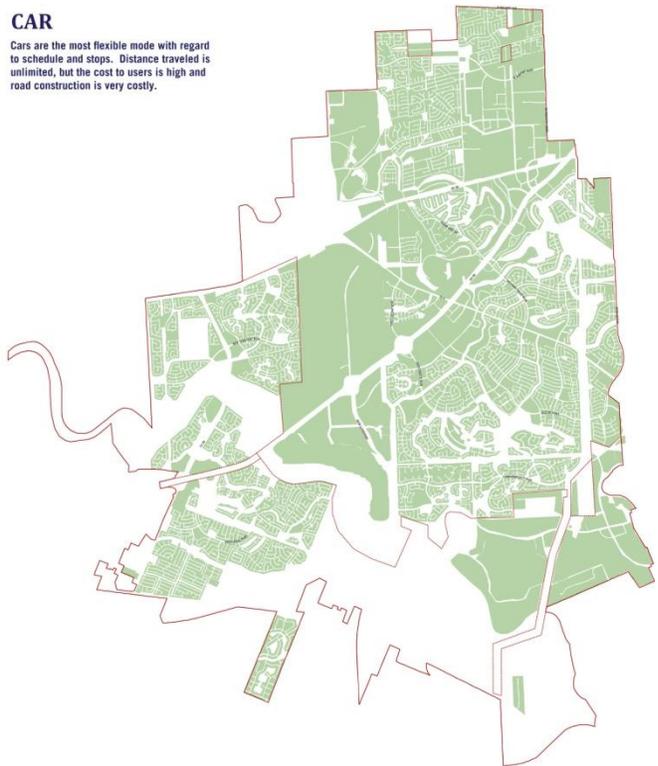
MODE SERVICE AREAS
 ■ SERVICE AREA
 ■ NON - SERVICE AREA
 ■ SERVICE POSSIBLE



Figure 10.4

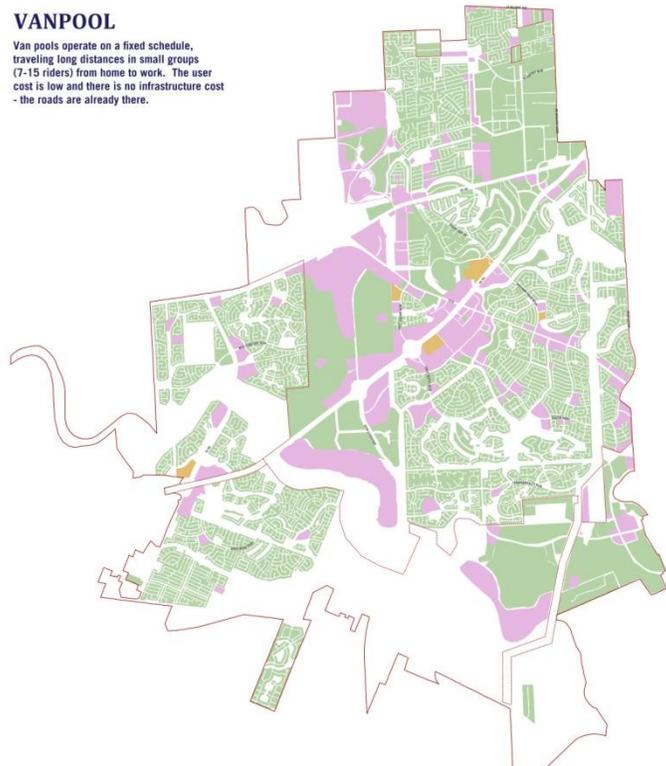
CAR

Cars are the most flexible mode with regard to schedule and stops. Distance traveled is unlimited, but the cost to users is high and road construction is very costly.



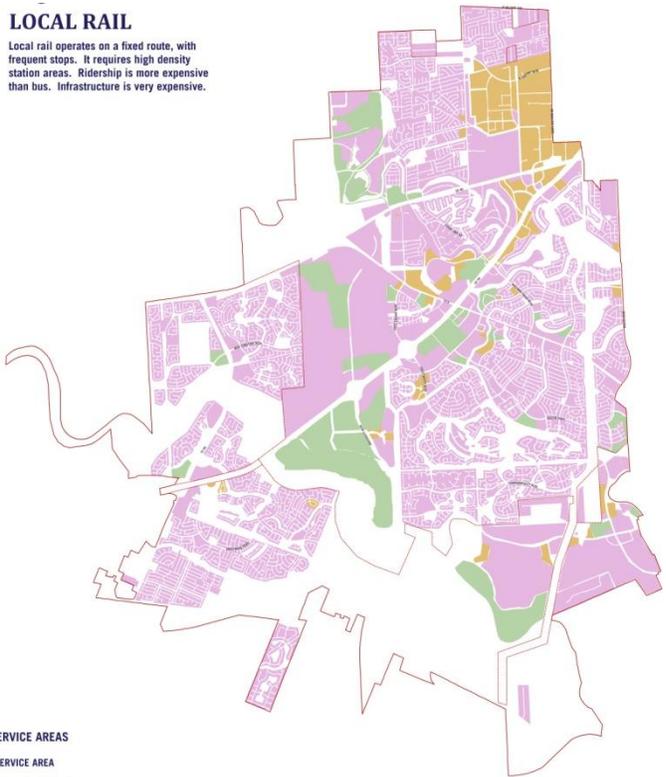
VANPOOL

Van pools operate on a fixed schedule, traveling long distances in small groups (7-15 riders) from home to work. The user cost is low and there is no infrastructure cost - the roads are already there.



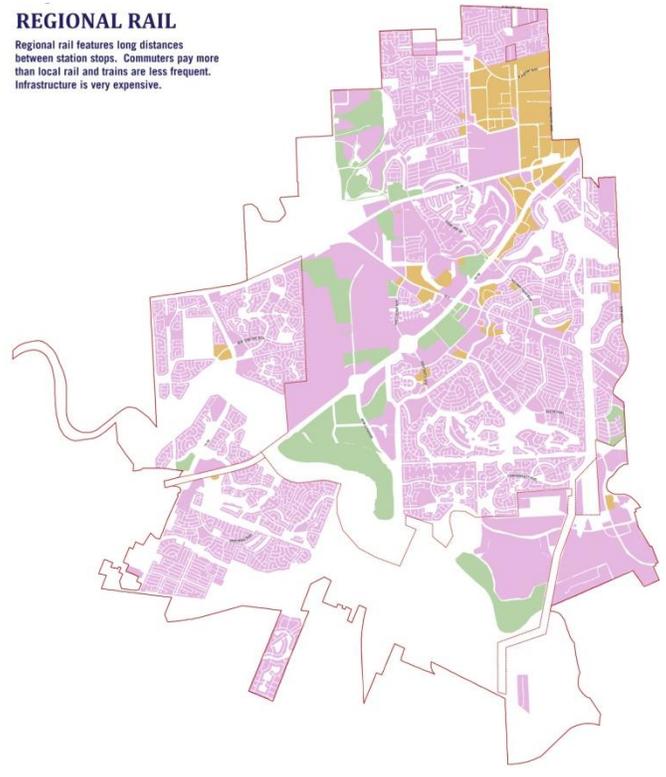
LOCAL RAIL

Local rail operates on a fixed route, with frequent stops. It requires high density station areas. Ridership is more expensive than bus. Infrastructure is very expensive.



REGIONAL RAIL

Regional rail features long distances between station stops. Commuters pay more than local rail and trains are less frequent. Infrastructure is very expensive.



MODE SERVICE AREAS
 SERVICE AREA
 NON - SERVICE AREA
 SERVICE POSSIBLE



For each mode, the following factors influence the ease in providing service: reasonable walking distances to destinations, connectivity to destinations, frequency and cost of service, potential ridership. The effectiveness of transportation modes is dependent on these factors to provide cost effective, convenient and timely service. There are implications for each land use type with regard to which transportation modes are the best fit.

PEDESTRIAN

Pedestrian trips rely on short distances between destinations. Good connectivity is an important key to encouraging pedestrian trips. Pedestrian access is difficult in most areas because the existing residential neighborhoods are designed with limited entrances and little connectivity to other land uses or activity areas. Trips are specifically non-recreational, so while it may be easy to take an evening stroll through your neighborhood it is difficult to walk to the store for milk.

BICYCLE

Safety is the most critical component for bicycling, as was shown through the Mobility Survey results where only 16% of respondents felt safe riding a bike in the City. Long distances through even poorly connected neighborhoods are easy to traverse by bicycle, but longer trips that require on-street riding through high-volume intersections can be dangerous enough to discourage bike trips. For example, strip retail with multiple curb cuts on major arterial roads, are less attractive destinations for bicyclists.

CAR

Sugar Land is very car friendly. The City continues to invest in a well-maintained road network to address any capacity constraints. It is easy to travel to or from anywhere by car and parking is plentiful. Sugar Land will continue to be a car-friendly city in the future.

VANPOOL

Vanpool typically supports low-medium density residential at one end and a concentration of jobs at the other. Vanpools operate very easily for travel from home to work destinations. They operate on a fixed schedule and require substantive ridership numbers (7-15 people).

PARK & RIDE

Park & Ride locations link low-medium density residential uses to a fixed route transit system. Park & Ride service is limited to home-to-work trips. This mode is dependent on density (primarily employment) on one end in order to create sufficient ridership numbers to support the cost of providing service. Stations may be located in shared parking lots, but ridership is generated by residential land uses.

BUS

Buses rely on ridership numbers within walking distance of bus stops. This mode serves riders at both the origin and the destination. Bus service is easier to offer along main arterial and collector roads with easy pedestrian access from bus stops to destinations. Medium- to high- density land uses are beneficial to create sufficient ridership numbers.

LOCAL RAIL

Local Rail requires high ridership or a significant density. High activity areas such as Shopping Malls, Mixed-Use Districts, Regional Medical and Park & Event Facilities are good station location anchors.



Business Parks, Suburban Office Buildings and higher density residential land uses can potentially support rail service if they are well-connected to stations and provide adequate ridership numbers. Multi-Family and Townhome land uses can be big drivers for Local Rail service.

REGIONAL RAIL

Regional Rail requires significant density at one end to create ridership demand. There is usually a Park & Ride at a Regional Rail station, but this is not 100% of the riders. There must be a critical mass around the station itself to justify its location, which is likely to have a region-wide draw of activity. Multi-Family and Townhomes may not be enough alone to support Regional Rail. High activity areas such as Shopping Malls, Mixed-Use Districts, Regional Medical and Park & Event Facilities can be good station location anchors.

Land use and form have a significant impact on mobility planning and transportation choices. Typologies and modes can be helpful in determining the potential for transportation options and the development or redevelopment patterns that can transform areas to support greater transportation choice. As Sugar Land strives to provide superior mobility for its residents, there is a specific concern for maintaining the integrity of neighborhood character. Mobility initiatives must revisit the impacts transportation choices will have on existing neighborhoods.

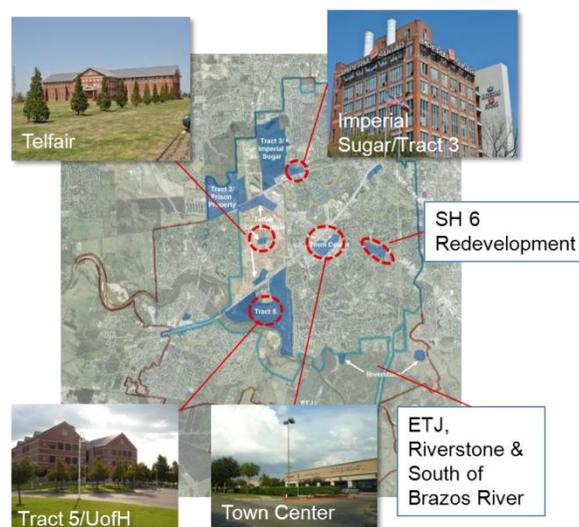
Strategies for Coordinated Land Use Development and Mobility Planning that Supports the Preservation of Neighborhood Integrity

Strategy #1: Consider land use/transportation relationship when developing and prioritizing mobility options.

The relationship between land use and transportation is undeniably linked. Sugar Land has to consider the implications transportation planning has on land use and the implications land use planning has on transportation.

Initiative 1A - Leverage opportunity areas to create mixed-use developments that support walking, biking and transit.

Mobility can be improved by focusing on future development sites as well as redeveloping existing sites to better accommodate multimodal options. Sugar Land has to create places where it is easy to use alternative transportation options for people to be able to walk, bike and ride transit. The best opportunity to do this is with new development. There are several core opportunity areas where new development patterns can be implemented to better support alternative transportation: Telfair, Tract 5/University of Houston – Sugar Land, Imperial Development (Tract 3), and areas in the ETJ.





Adding mixed-uses, multimodal centers to the network will enhance alternative transportation service by simply adding more destinations on a bike route, for example. To facilitate mixed-use development, the City should partner with land owners, provide clear examples of desired development patterns, and implement changes in zoning and development regulations, where applicable. In some cases, the City may choose to offer development incentives for additional site specific enhancements not included in regulations.

An example of this is shown in **Figure 10.5**. This shows an example of what could be possible on a high potential development like the portion of Tract 5 in the southeast corner of University Boulevard and US 59. The City of Sugar Land already has identified parcels of this area as the site for a potential 6-7,000 seat entertainment venue and a hotel and convention center site. Lexington Boulevard is also planned to be extended through the site. As part of this study the intersection of University Boulevard at 59 was identified as a high potential location for a transit hub for some form of high capacity transit (Park & Ride, Bus Rapid Transit, and Rail). The site is also along the Ditch H corridor, which will one day provide a major spine for pedestrian and bicycle connectivity. The proposed site identifies the potential for a mix of land uses, commercial and residential development types supported by true transportation choice. The location could link to the Town Center area to the east to support a meaningful set of activity centers with a high degree of connectivity and represent a major realization of the Vision for Superior Mobility linking transportation and development.

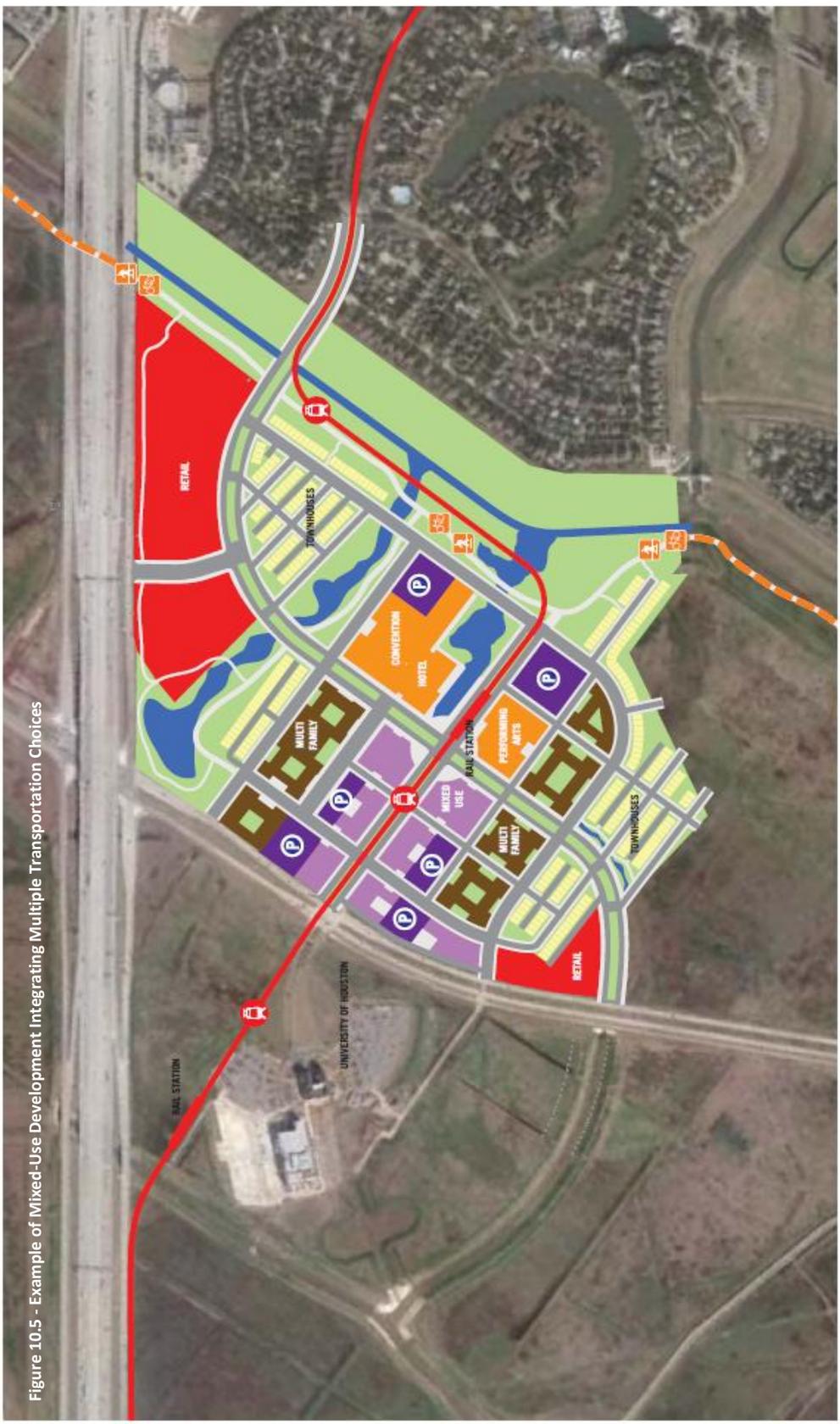


Figure 10.5 - Example of Mixed-Use Development Integrating Multiple Transportation Choices

SUGAR LAND COMPREHENSIVE MOBILITY STUDY: TRACT 5

MORRIS
ARCHITECTS

ADVANCEDDESIGN



Redeveloping properties are a secondary opportunity to incorporate transit-friendly activity centers into the City landscape. The *Market Research and Analysis / Baseline Data* prepared for the City of Sugar Land in 2008 identifies several key opportunity sites for redevelopment. This includes vacant properties as well as several office and retail sites with redevelopment potential. Some development in the City is old enough to increase the likelihood and consideration of redevelopment. As strip malls begin to age, retailers move to newer centers. Older retail centers reach the end of their useful life and can be redeveloped and repositioned for new markets.

The SH 6 corridor is experiencing this shift in commercial retail development. Newer retail centers are replacing old ones, and today there are vacancies such as the vacant Randall's at Dulles Avenue. Sites like these will become available for redevelopment in the near future. **Figure 10.6** shows a redevelopment scenario for a typical retail strip redevelopment site along Highway 6 at Settler's Way Boulevard known as The Market at First Colony. As with the mixed-use development on Tract 5 (see **Figure 10.5**), the plan is intended to be illustrative of what may be possible by rethinking some of these areas. The site is located along a bike trail at a key connection to Oyster Creek Park. At the eastern boundary, Settler's Way is a main entry road into a residential planned community. The site features a stretch of waterfront access at the northern edge, which is designated as a future hike and bike trail head.

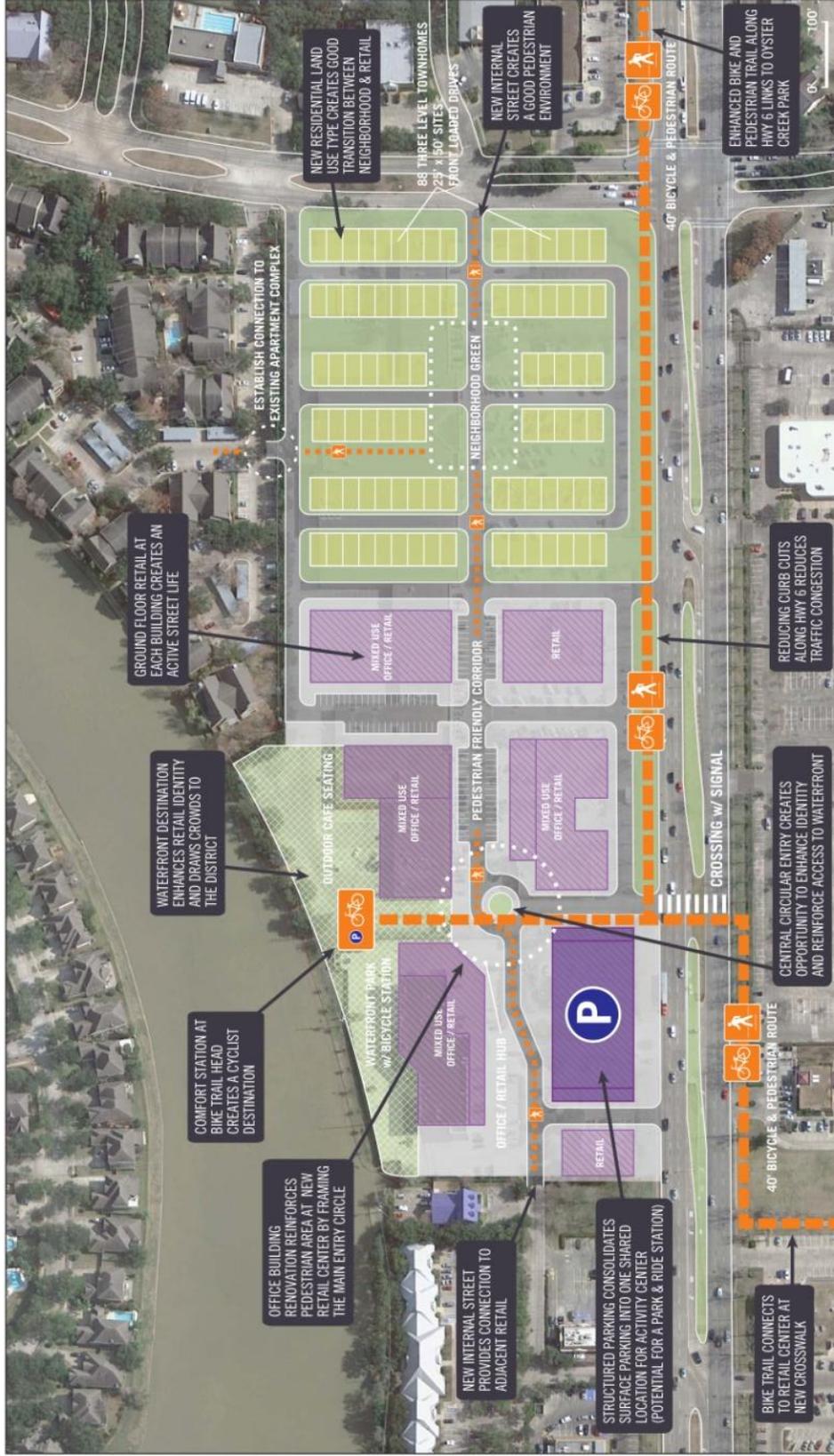
Over the next 20 years, the SH 6 at Settler's Way site could transform into a vibrant village with a central main street corridor. The redeveloped neighborhood center can be accessed by cars, bikes, and pedestrians and would be a logical location for any future transit service. The site could include new mixed-use retail with office uses above and a shared structured parking facility to serve tenants, visitors, and park & ride transit riders. New townhouses provide a critical addition of households to support retail businesses while offering additional housing opportunities for a growing, aging Sugar Land population or young professional that will support area growth. There is a demand from existing neighborhoods for mixed-use neighborhood centers, and the economic viability of these centers requires an adequate number of households. A new traffic signal at SH 6 would allow easy access to the development through one main entrance in place of six curb cuts into the former street-front, surface parking lot. Reducing curb cuts improves traffic flows on Highway 6 and creates safer access to the activity center. Bike and pedestrian routes along Highway 6 would provide a needed connection from Oyster Creek Park to the Highlands bike trail, which terminates at a waterfront park lined with restaurants. Additional connections to the adjacent properties would provide needed alternative access to increase activity at the site's new retail destinations and amenities. The site accommodates 3-4 story structures at most, a smaller-scale development in comparison to Town Square, to better integrate with the surrounding neighborhoods and offer a character that does not compete with the City's central business district. This typological approach can be applied to other redeveloping neighborhood strip retail sites throughout Sugar Land. The City can facilitate and encourage implementation of this typology through development standards and codes and possibly by providing economic incentives. When a developer meets with the City about the redevelopment of an existing retail center, the City should discuss the desired development typology with the developer and find out how the City can facilitate the construction of a mixed-use neighborhood center.



BEFORE

REIMAGINING STRIP RETAIL DEVELOPMENT

HIGHWAY 6 @ SETTLER'S WAY



REDEVELOPMENT OPTION

Figure 10.6 - Example of Redevelopment of Strip Retail Center on SH 6

**Initiative 1B – Identify mobility improvements and multimodal transportation corridors to strengthen local activity centers.**

As additional activity centers are developed (Imperial Development, the concert venue and convention center/hotel development on Tract 5, University of Houston and the Festival Site in Memorial Park), multimodal access should be addressed in the development plans, both within each center, as well as between the activity centers. The locations of the activity centers facilitates the designation of portions of SH 6, US 90A, University Boulevard and Lexington Boulevard as multimodal transportation corridors.

Construction of “arterial” bicycle trails, such as the Ditch H Trail will provide connections between activity centers; however, additional bike lanes and/or shared paths along the designated multimodal transportation corridors will be needed to provide comprehensive access by bicyclists. Pedestrian access should be strengthened along these corridors, typically in conjunction with bicycle improvements. Also, the implementation of transit circulator service will provide important connections between these employment centers.

Initiative 1C - Institutionalizing multimodal connectivity through City ordinances and the development review process. Designing for multimodal developments is a key to changing the landscape to better accommodate choices in transportation. It’s not only about creating higher density activity centers; it’s about the details on each parcel. Developers can extend hike and bike trails, connect to pedestrian and bike routes, and provide amenities on their properties. Roughly seventy percent of Mobility Survey responders indicated they would ride their bikes more often if the network was improved. The review process can encourage developers to provide multimodal connectivity and amenities for each project. The City of Sugar Land can offer financial and other incentives for enhanced multimodal features and amenities. Zoning approval can drive developers to include designs to accommodate multiple modes of transportation for each development site. Traffic Impact Analysis mitigation efforts can include alternative transportation improvements such as enhanced pedestrian areas or bike comfort stations. Incentives, zoning requirements and TIA mitigation options will ensure that each new development contributes to improving mobility throughout the network.

Strategy #2: Further utilize modified parking requirements to improve flexibility and accessibility for new development/redevelopment

Sugar Land’s parking supply currently exceeds its parking demand. This can fuel low density development and large open surface parking lots, which remain empty for long periods and create undesirable places for pedestrians. Shared parking is a good solution for matching supply with demand. Sugar Land modified parking requirements in the development of Town Square to create a more walkable environment and can extend this option to other areas as well. Seventy-six percent of survey responders agree that parking requirements should be relaxed for higher density, more walkable development. The City can use modified parking requirements for new development and redevelopment sites to minimize an oversupply of parking.

**Initiative 2A - include district-wide, shared parking at activity centers, including parking for public facilities and potential transit hubs.**

Shared parking encourages and allows visitors to park in one location and walk to several destinations thereby reducing car trips and encouraging a more active pedestrian realm. Additionally, activity centers with a mix of uses can efficiently combine parking demands from several separate uses whose timing varies, such as Park & Ride commuters and movie theater patrons. Reducing the total amount of parking required and the cost to provide that parking allows for more uses on the same site supporting increased economic development. The challenge here is accepting structured and shared parking scenarios in an environment accustomed to private surface lots. A recommendation is to revisit the percentages of off-site shared parking permitted for each use in Development Code *Sec. 2-209 Location of Parking Spaces* to encourage more shared structured parking. District wide, shared parking can contribute to a more vibrant pedestrian environment.

Initiative 2B - Evaluate the potential for market-driven parking capacity in higher-density activity centers (e.g., elimination of parking requirements). In Houston's Central Business District, there are no parking requirements. The private market builds parking garages, many of which are shared among tenants and visitors of various buildings, based on pure demand. There are additional parking opportunities with on-street parking, from which the City generates revenues. The result is dense development and high activity. This option may be suitable for Sugar Land Town Square and other major local activity centers.

Strategy #3: Encourage commercial/mixed-use development in undeveloped portions of the City to reduce trips through congested corridors.

A key to improving mobility is reducing trip distances by providing more local destinations so people don't have to drive long distances and even have alternative transportation options to get groceries, go shopping, see a movie, and eat out. The majority of land area in Sugar Land is made up of residential uses, mostly single-family detached houses. While there are neighborhood services in strip centers near these communities, there are a limited number of true activity centers. Without neighborhood activity centers, City activity centers experience increased traffic congestion, as is the case near Highway 6 at US 59. Undeveloped sites in the City are great opportunities to relieve the pressure on existing nuclei of activity and provide new destinations within closer proximity.

Activity generated in clusters of the City puts pressure on major transportation corridors. While this is not always a negative (lots of people in Town Square is a good thing), it is important that the development of the ETJ not require additional capacity from the network beyond what it can absorb. That is to say, roads leading from the ETJ to Town Square may not be able to accommodate the capacities of automobile trips generated from new residential development, and having destinations within the ETJ can help provide alternatives.

Initiative 3A - Develop neighborhood centers in the ETJ.

New activity centers must be developed in the ETJ to service new residents and eliminate the need for longer trips to existing centers along Highway 6 and US 59. Opportunities are likely to exist in the locations like the planned Riverstone development which have identified commercially zoned locations that could serve as neighborhood centers.

**Initiative 3B - Identify alternative mode access to activity centers (bike and pedestrian routes), thus reducing car trips.**

Creating alternative modes of transportation to local activity centers can also alleviate traffic congestion. Residents can choose to bike to the movies or walk to the store to pick up a few groceries instead of driving their cars for these trips. Planned communities should have identifiable routes to activity centers for bikes and pedestrians. Creating and identifying continuous and safe routes will encourage people to use them. Currently bike routes move from separated lanes into shared lanes with vehicles and it is not obvious to cyclists where routes go. Additionally, the City should explore an alternative alignment for regional rapid transit (bus or light rail) that stops at local activity centers. Stations along Lexington Boulevard could provide service to Town Square, First Colony Mall, AMC Theatres, Tract 5 and the University of Houston for local residents and regional commuters. Providing alternative access to activity centers helps reach two of the most important goals as indicated by survey responders: to provide transportation choices and reduce roadway congestion.

Strategy #4: Include neighborhood considerations in mobility planning

Sugar Land is made up of many master-planned communities, whose character is an integral piece of why so many people call Sugar Land home. First and foremost, residents must be a part of planning their future and shaping mobility projects in and around their communities. It is the local stakeholders who often know the issues most intimately and they are a great resource for informed planning of successful projects. A focused public engagement process for major mobility projects and initiatives will benefit the development of these projects. While improving connectivity, Sugar Land needs to prioritize maintaining neighborhood integrity.

Initiative 4A - Ensure mobility projects (new and reconstruction projects) preserve neighborhood connectivity and integrity.

Connectivity can be enhanced by creating more intersections and additional thoroughfares. But Sugar Land neighborhoods are inherently disconnected with limited entry points and transforming them would compromise their character. Balance should be an objective when considering increased connectivity. Projects that will enhance connectivity from neighborhood entry points must be a priority. An example could be ensuring safe, comfortable pedestrian and bike paths from community entrances to neighborhood retail destinations. Overall mobility improvements can be made while maintaining the integrity of neighborhoods and adapting to the neighborhoods vision.

Strategy #5: Encourage increased communication between the City and school districts to improve access to schools and reduce impacts on mobility

Neighborhood schools have a major effect on mobility. Many master-planned communities were built around neighborhood schools. According to the 2009 American Community Survey, there are approximately 18,200 Sugar Land residents enrolled in primary and secondary schools. School districting and enrollment have a great impact on traffic patterns in and around communities, and therefore it is critical to have good coordination between schools, transportation, and residents.



Initiative 5A - Encourage school districts to include the City early in the process of site location and site plan decisions.

Small adjustments in school entry access points and public realm design of sidewalks and bike infrastructure can encourage alternative transportation options. For example, some schools experience long carpool lines that back up traffic on major thoroughfares. In some cases, drop off and pick up locations can be moved elsewhere on site to eliminate traffic on these major routes. With the proper coordination, school districts and City departments can work together to improve access to and reduce congestion around neighborhood schools. Proper design can encourage an increase in walking and biking to school. As shown in the following example, lack of good access can make what could be a short trip long and circuitous and encouraging automobile trips.

**Elementary School – Sugar Land
Cul de sac Neighborhood**



**Elementary School – Houston
Grid Network**



Where schools are located and how they are designed to connect with street, sidewalk and bike networks can impact mobility.

Initiative 5B - evaluate the need for Safe Routes to School Plans in coordination with school districts. Kids and parents will walk or bike to school if there is a clear, safe network to support them. This would reduce car trips to school and can have a big impact on neighborhood traffic congestion. The openings or closings of schools and redistricting of residential areas should be coordinated with City departments to anticipate needs and mitigate any negative impacts on mobility.

Metrics

The success of strategies for coordinated land use development and mobility planning that supports the preservation of neighborhood integrity can be evaluated by the following metrics:

Residents within 1/4 mile walk to retail: Identified the share of the population that would be within a reasonable distance for a walking or biking trip or an area that could be more easily serve through a transit circulator.



Average City Walkscore (Walkscore.com): The overall City Walkscore is a 38 (out of 100) with a peak in the Town Square area of 78. An overall increase in Walkscore would be an indication of a greater integration between mobility and land use

Citizen Survey - Availability of Mixed Use Destinations & Citizen Survey - Level of Citizen Involvement: These measures, captured through the citizen survey conducted by the City, will provide input into the perceptions of citizens on the continued availability of mixed use (a stated preference in the Mobility Survey) and the level of engagement in the development process.