Transportation Policy Council Accepted, January 2011

State Highway 6 South

Corridor Access Management Plan

Kimley-Horn and Associates, Inc.
In association with
Klotz Associates Inc.
The Lentz Group
Gateway Planning
CJ Hensch & Associates, Inc.

Project Partners:
Houston-Galveston Area Council (H-GAC)
Texas Department of Transportation
City of Alvin
Brazoria County
Galveston County
City of Manvel
City of Santa Fe

Over the past 36 years, the Houston-Galveston Area Council (H-GAC) has continually worked with local governments to improve mobility throughout the region. Many of the projects funded and managed by H-GAC have been constructed and are examples of successful plan implementation. Furthermore, those projects demonstrate how public involvement and local governmental coordination can generate a long-term plan and achievable vision.

As such, H-GAC has initiated the State Highway 6 (SH 6) South Corridor Access Management Plan, a study with goals to improve mobility and safety and a key mission to provide a transparent process for all citizens and stakeholders.

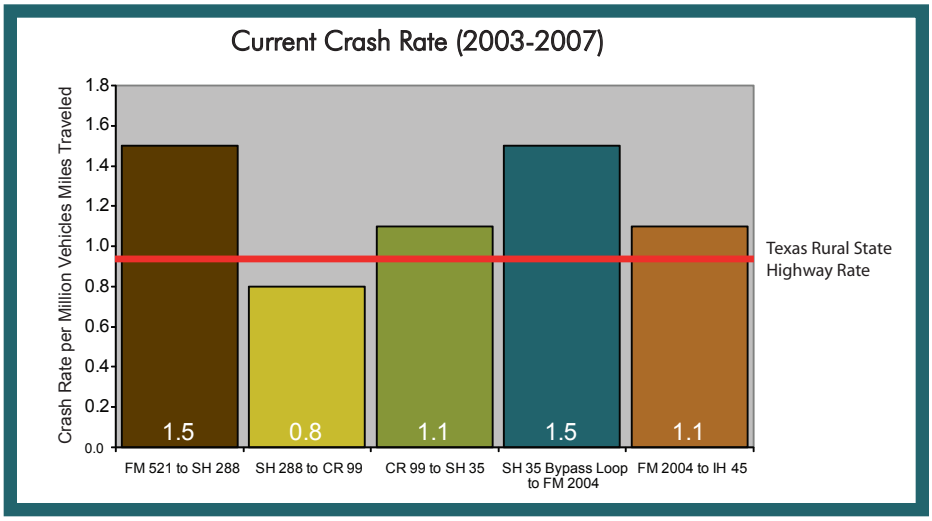
Existing Conditions

The SH 6 South corridor spans from FM 521 at Arcola to IH 45 near Galveston and encompasses the communities of Arcola, Alvin, Manvel, Santa Fe, Hitchcock, and Bayou Vista, as well as Fort Bend, Brazoria, and Galveston counties.

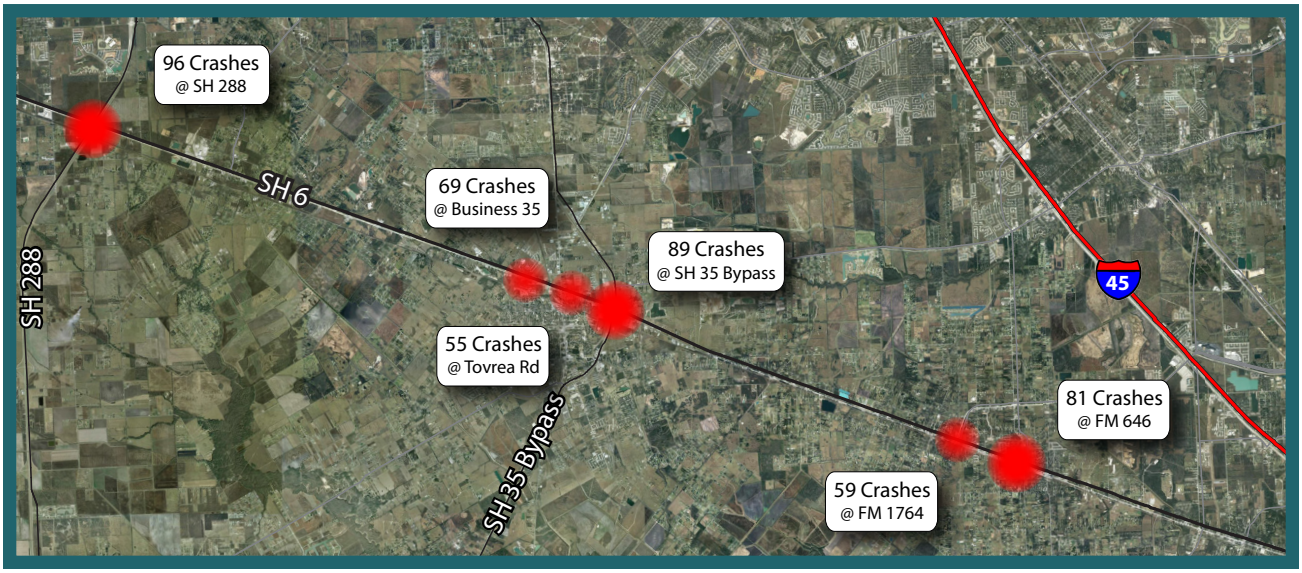
Many cities throughout the corridor consider SH 6 the main retail and commercial corridor for their respective city. Furthermore, the corridor is deemed a vital asset to the future economic development opportunities within the region and serves as a primary evacuation route for many residents.

Although several developers have begun purchasing property along the SH 6 corridor, many plans have yet to begin construction. The corridor is a mixture of greenfield development, areas of transition, and urbanized towns. The rural characteristics and the opportunity for future development provide a unique opportunity for proactive management of the SH 6 corridor. This study focuses on developing long-term goals and defining a clear vision for the future of the corridor *before* the growth spurt occurs.

For the 2003 to 2007 crash data, the crash risk was calculated using the AADT from 2007. Crash rates are shown for each segment along SH 6 South.



The highest crash rates were between FM 521 and SH 288 and from SH 35 Bypass Loop to FM 2005. These areas referred to as "Hot Spots" (illustrated in red below).



Hot spots are any intersection with 50 or more crashes, were identified for the 2003 to 2007 crash data:

- SH 6 at SH 288 (96 crashes)
- SH 6 at Business 35 (69 crashes)
- SH 6 at Tovrea Rd (55 crashes)
- SH 6 at SH 35 Bypass Loop (89 crashes)
- SH 6 at FM 1764 (59 crashes)
- SH 6 at FM 646 North (81 crashes)

Implementation

In order to implement these policies and create a livable corridor, some technical design improvements to the SH 6 South corridor are recommended. To more adequately program funding within the corridor, the recommended improvements have been divided into short, medium, and long term projects. Projects were categorized based on four major variables: existing volumes, crash rates, right of way acquisition, and project cost. The summary for each participating municipality (Manvel, Alvin, and Santa Fe) are found in the Implementation section of the report. It provides the technical information used to determine the proper improvement type and location as well as the time frame in which the implementation of the project is recommended.

Each of the implementation sections consist of different time-line recommendations for each municipality. These sections consist of the following breakdown:

Short Term Improvements

- Safety Lighting Intersection Improvements
- Signalization Improvements
- Intersection Improvements
- Median Improvements

Medium Term Improvements

Medium term improvements involve projects that can be implemented in five to fifteen years. As traffic volumes within the corridor continue to rise, raised medians should be constructed in specified locations.

Long Term Improvements

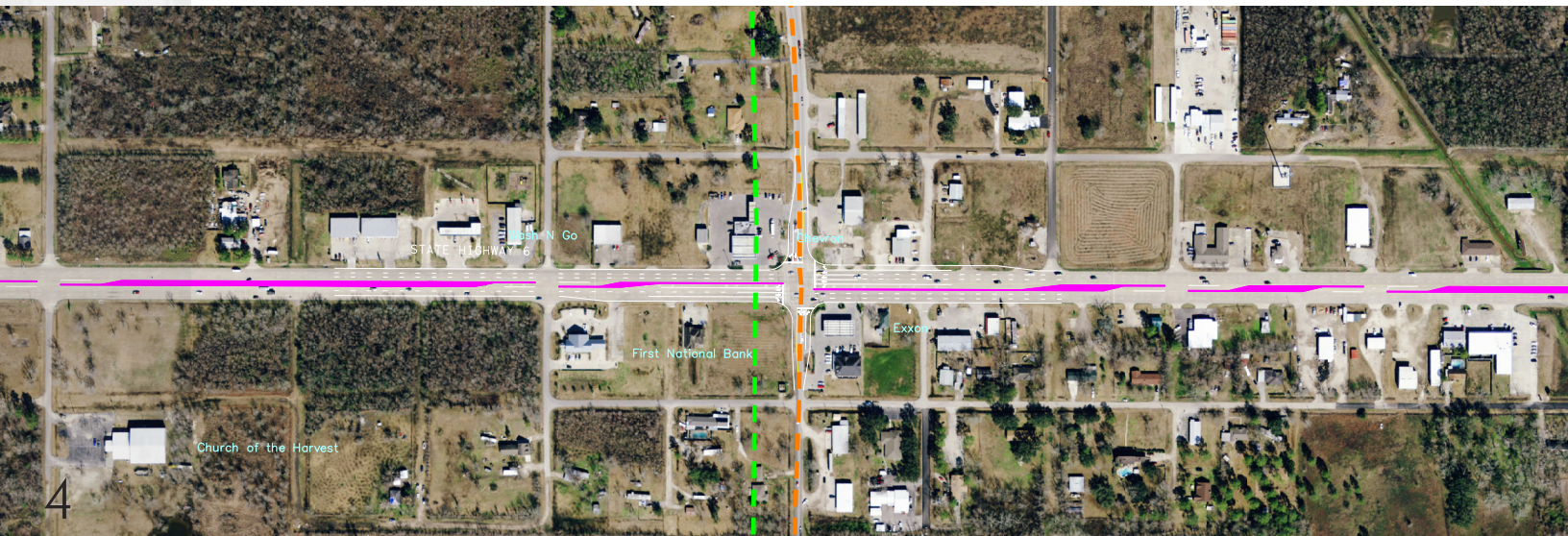
- Thoroughfare Improvements
- Roadway Flood Improvements
- Pedestrian Improvements
- Transit Improvements

Improvement Costs

City	Short	Medium / Long
Manvel	723,200	1,310,000
Alvin	518,200	702,400
Arcola	0	503,000
Santa Fe	0	825,500

*See SH6 South Report for Additional Details

Below is an example of a Medium Term Improvement for Manvel found on page 28 of the report. Furthermore, the table to the right details the summary of improvements recommended for this section of State Highway 6.



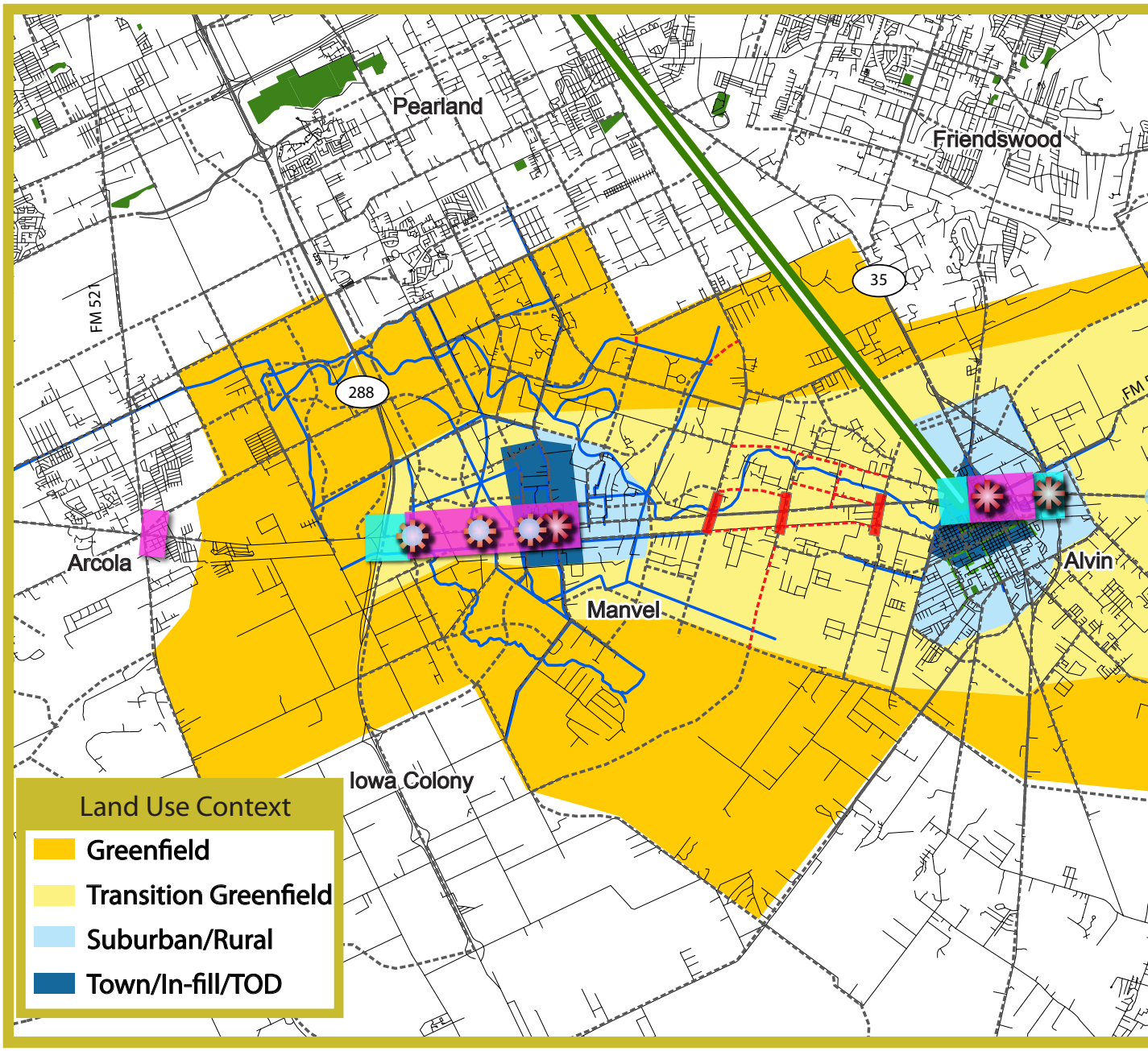
Recommended Improvements

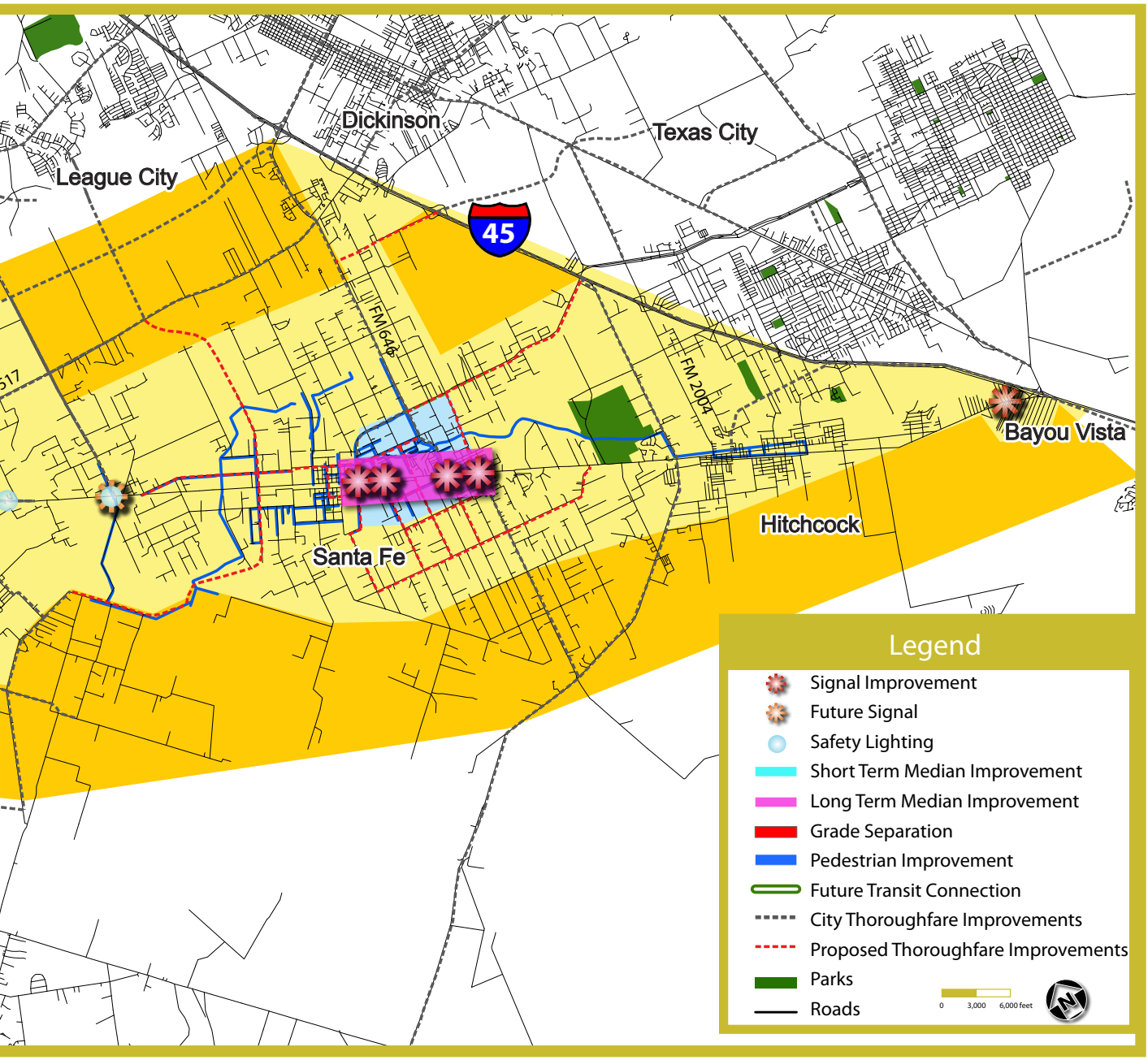
Jurisdiction	Segment	Length (miles)	Existing Number of Lanes	Daily Volume (2005)	Projected Number of Lanes	Projected Daily Volume (2035)	Crashes (2003-2007)	Crash Rate per million VMT	Recommendation		
									Short Term	Medium Term	Long Term
Arcola/Fort Bend County	FM 521 to Old Airline Drive (CR 48)	3	6	14600	6	33000	63	0.79		Raised Median	Continuous lighting
Brazoria County	Old Airline Drive to SH 288	1	6	14600	6	32000	23	0.86			Continuous lighting
Manvel	SH 288 to Proposed Colony Drive	0.5	6	20300	6	41800	98	5.29	Raised Median Add luminaires and signalize proposed Colony Drive intersection		Continuous lighting
Manvel	Proposed Colony Drive to Palmetto Street	2.2	6	20300	6	41800	44	0.54		Add luminaires and signalize proposed Iowa Lane	Continuous lighting
Manvel	Palmetto Street to FM 1128 (Masters Road)	0.25	6	20300	6	41800	40	4.32		Raised Median, signalize Corporate Drive	Continuous lighting
Manvel	FM 1128(Masters Road) to Cemetery Road	0.5	6	21800	6	35800	29	1.46		Raised Median	Continuous lighting
Manvel/Brazoria County	Cemetery Road to Pearland	2	6	21800	6	35800	55	0.69			Raised Median Continuous lighting
Fort Bend County/Alvin	Pearland Sites(CR 99) to 2nd Street/Brazos Street	3.75	6	21800	6	24000	119	0.80			Grade Separation at Pearland Sites (CR 99) per MTP Grade Separation at Schroeder Lane (CR 146) per MTP Grade Separation at Cardinal Drive (CR 149) per MTP
Alvin	2nd Street/Brazos	0.75	6	21800	6	24000	92	3.08		Raised Median	
Alvin	SH 35 Bus (Gordon Street) to SH 35 Bypass	1	4	17300	6	24000	139	4.40	Raised Median		
Alvin/Galveston County	SH 35 Bypass to Algoa Friendswood	3.5	4	13700	6	20000	49	0.56	Safety lighting at intersection of Faber Drive Add luminaires and signalize Algoa-Friendswood Road		
Galveston County/Santa Fe	Algoa Friendswood to FM 1764	4.1	4	13700	4	27400	206	2.01			
Santa Fe	FM 1764 to FM 646 South	1.5	4	14000	4	16500	161	4.20			Raised Median
Santa Fe/Hitchcock	FM 646 South to FM 2004	5.4	4	9800	4	14000	76	0.79			Raised Median
Hitchcock	FM 2004 to FM 519	1.5	4	13700	4	17500	55	1.47			
Hitchcock/Galveston County	FM 519 to IH 45	5.5	4	10000	4	10000	55	0.55			

Continuous lighting warrants meet when volume over 30000 ADT.

Vision Summary

When establishing the vision, a clear growth strategy was key in determining the proper improvement tool. H-GAC's Livable Centers Program promotes new growth strategies that accommodate growth and redevelopment in a sustainable manner. Its key features are compact mixed-use, walkable design, connectivity, and accessibility to multiple modes of transportation. Although intended for higher intensity urban centers, the same policies can be applied on a smaller scale along SH 6 South.



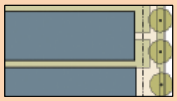
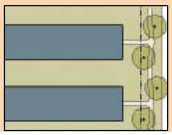
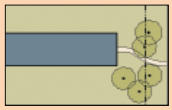

Dickinson
Texas City
League City
45
FM 646
FM 2004
Bayou Vista
Hitchcock
Santa Fe
Legend
Signal Improvement
Future Signal
Safety Lighting
Short Term Median Improvement
Long Term Median Improvement
Grade Separation
Pedestrian Improvement
Future Transit Connection
City Thoroughfare Improvements
Proposed Thoroughfare Improvements
Parks
Roads
0
3,000
6,000 feet

Based on our analysis, the current development standards and transportation policies will not attract, enhance, or manage growth as desired by residents and stakeholders within the area. Therefore the communities along the SH 6 South corridor have choices when forming their region. Policies and investment strategies can be amended to preserve agricultural and native heritage while accommodating growth in a wise manner. These changes require consideration of new programs, policies, and investment strategies that will require cooperation of multiple governmental entities.

The implementation phase of any project can be a complex task for any city. Using any or all of these tools can give any city the regulatory authority to employ development policies, and in turn, provide uniformity throughout the planning, development and building process. The Development Context Matrix on the following page be employed within the corridor. Three major development contexts were identified for livable center projects along SH 6 South. Those contexts are:

- In-fill / Redevelopment Opportunities Within A Traditional Downtown Context
- In-fill / Redevelopment Within An Under-Performing Suburban Strip Commercial Context
- Greenfield Development

Development Context Matrix

Livable Center Tools/Criteria	Town/In-fill/TOD	Greenfield	Transition Greenfield	Suburban/Rural
Development Context Descriptions				
State Highway 6 Elements				
Lane Width	11' to 12'	11' to 12'	12'	12'
Intersection Type (Preferred Thoroughfare Spacing)				
Major Arterial	Signalized intersection (1 mile min, 2 mile max)	Signalized intersection (1 mile min, 2 mile max)	Signalized intersection (1 mile min, 2 mile max)	Stop controlled intersection (1 mile min, 2 mile max)
Minor Arterial	Signalized intersection (1/4 mile min, 1/2 mile max)	Stop controlled intersection (1/4 mile min, 1/2 mile max)	Stop controlled intersection (1/4 mile min, 1 mile max)	Stop controlled intersection (1/4 mile min, 1 mile max)
Collector	Stop controlled intersection (800 feet min, 1,000 feet max)	Stop controlled intersection (800 feet min, 1,000 feet max)	Stop controlled intersection (<1,500 feet min)	Stop controlled intersection (<1,500 feet min)
Local Street	Stop controlled intersection (400 feet min, 600 feet max)	Stop controlled intersection (400 feet min, 800 feet max)	Stop controlled intersection (<1,000 feet min)	Stop controlled intersection (<1,000 feet min)
Intersection Access				
Major Arterial	Full Access	Full Access	Full Access	Full Access
Minor Arterial	Reduced (noc cross street access)	Reduced (no cross street access	Full Access	Full Access
Collector	Right turn only	Right turn only	Reduced (no cross street access)	Full Access
Context Speed	30 mph	45 mph	45 mph	55 mph
Driveway Spacing Standards	Primary access through adjacent thoroughfare, driveway access limited to one (1) shared driveway per block	Primary access through adjacent thoroughfare, driveway access limited to one (1) shared driveway per block	Primary access through adjacent thoroughfare, driveway access limited to two (2) shared driveways per block	Primary access through adjacent thoroughfare, driveway access limited to three (3) shared driveways per block
Medians type	Raised, landscaped medians	Two way left turn lane	Raised concrete median	Two way left turn lane
Corridor Lighting	Continuous lighting through urban areas that conform to context design standards	Safety lighting at major arterials that exceed 13,000 vehicles per day	Safety lighting at major arterials that exceed 13,000 vehicles per day	Safety lighting at major arterials that exceed 13,000 vehicles per day
Lanscaping Elements	Street trees in tree wells or landscape strips and in orderly rows and spaced 40' on center 	Street trees (40' - 60' on center) in landscape strips/ parkways in orderly rows or grouped; shrubs/landscape berms separating roadway from sidewalk 	Street trees in informal rows and groupings 	Natural vegetation 
Pedestrian Amenties	Pedestrian scale lights, sidewalks, street furniture, etc.	Sidewalks, street lights	Sidewalks	None
Drainage Type	Curb and gutter	Curb and gutter	Curb and gutter or swale	Swale
Connecting Roadway Network				
Number of Intersections per sq. mile	>150	100 - 150	<100	<100
Block width ranges	200' - 500' (max)	600' - 800'	<1000'	>1000'
Street types	Commercial Street, Avenue, Boulevard	Commercial Street, Avenue, Boulevard	Avenue, Boulevard	Road
Pedestrian/Bicycle mobility & linkages	Sidewalks and on-street shared facility	Sidewalks and on-street shared facility	Sidewalks and trails	Paths and trails
Integration with Community thoroughfare plans	Design standards for each appropriate thoroughfare type should be included in the community thoroughfare plans. of new thoroughfares including critical connectivity goals should be included in community thoroughfare plans.			Locatio
Driveway Spacing Standards	200'	200'	200' - 400'	>400'
Design Speed	See street type document			
Parking Types	On street (parallel and angled)	On street (parallel and angled)	Angled	None
Placemaking Elements				
General Land Use Mix	Mixed use (commercial/retail on the ground floor and office/residential above)	Mixed use, professional offices, general offices and mixed residential	Retail, restaurant, office, auto-oriented uses, auto-service uses	Low intensity residential and commercial, institutional (churches and schools)
Development Orientation	Pedestrian oriented	Pedestrian and auto-oriented	Auto-oriented	Auto-oriented
Scale/Intensity (building heights)	2 - 3 stories (generally 2 stories)	2 stories	1 story (generally)	1 - 2 story
Pedestrian accommodation	High	High	Limited (some sidewalks)	none
Neighborhood linkages	High	High	Limited (some sidewalks)	Trail connections along creeks and other natural features
Building types	Mixed use building, lofts over retail	Mixed use buildings, office buildings, apartment buildings	Single-use retail (big-box), strip retail, retail pad sites, etc	Farms, churches, schools, small residential, other related commercial structures (metal and wood barns, etc)
Open/Civic space types	Plazas, squares, and greens	Plazas, squares, greens, and parks	Parks	Parks and envionmental preserves

Acknowledgements

Lead Agency: Houston-Galveston Area Council (H-GAC)

Project Manager: Noel Bowman
Transportation Department

Contract Manager: Christy Willhite
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