

2015

# Pearland

COMPREHENSIVE PLAN



Informal walking path along Harkey Road at Old Oaks

## SECTION 3

# Mobility

Pearland is in an enviable location within the Houston metropolitan area relative to downtown Houston, the Texas Medical Center and other major employment and activity centers, while also offering its residents and businesses quick access to Hobby Airport. However, one of the community's main links to many of these key destinations – the State Highway 288 corridor – has reached a point of severe congestion at peak travel times in recent years. Relief of this situation, and for further projected traffic volume growth on SH 288, is planned through the proposed introduction of managed toll lanes to this freeway corridor and other phased improvements. Furthermore, at the time this Comprehensive Plan was under development, the Harris County Toll Road Authority had just completed a major widening project for the southern segment of the Sam Houston Tollway between SH 288 on the east and US 59 on the west. Looking ahead, the potential for a future rail transit connection to Pearland remains a “wild card” given uncertainty about regional and federal

funding and completing transportation improvement priorities across the area.

Closer to home, municipal government can invest and leverage its own local public dollars toward specific mobility projects that make an immediate and tangible difference in roadway capacity, safety and connectivity. Through its multi-year Capital Improvements Program (CIP), the City of Pearland plans ahead for an array of such projects, some of which are implemented in partnership with other levels of government. Through the subdivision regulation component of its Unified Development Code (UDC), the City also obtains needed right-of-way for new and expanded streets in conjunction with the land development that will generate additional traffic within the community. Private development often constructs such streets as well, in conformance with City engineering design criteria, and in some cases as part of development and cost-sharing agreements that yield benefits to both the private and public sectors. Pro rata assessments also help to fund improvements based on traffic impact analyses.

Community input for this long-range planning effort continues to demonstrate citizen interest in devoting more resources to connectivity and safety improvements that will make biking and walking to nearby destinations a more attractive option, especially in the vicinity of neighborhoods. This has implications for the design approach to future roadway improvements, as well as opportunities for developing more off-street “bike/ped” routes and connections.

It should be noted that all assumptions in this plan section are based on the Land Use Plan in the Land Use and Character section. The planned future transportation system for Pearland, or any extensions to the planned system, may not be able to support future land use scenarios that vary significantly from the development intensities depicted on the Land Use Plan.

## Mobility Context

Funding for transportation improvements is in increasingly scarce supply in the face of unprecedented demands, with ongoing population and economic growth across the nation and especially within Texas and the Houston metropolitan region. Besides the level of funding, the reliability of funding also complicates local planning, project selection and budgeting efforts. This section provides an overview of the funding situation for the Texas Department

of Transportation (TxDOT), along with other key transportation financing methods. It also documents Pearland’s struggle for public transit service through several potential providers, and references the 2040 update of the Houston-Galveston Area Council’s (H-GAC) Regional Transportation Plan, which is a principal method for allocating mobility funds across the area.

## ROADWAY FUNDING

Over the last decade, federal and state transportation revenue streams have not been keeping up with needed transportation investments. Federal and state tax rates on gasoline sales have not changed since the early 1990s, and increases in oil prices have changed behaviors of people with respect to their driving habits and types of cars purchased. Today, the increased options of telecommuting and reduced work weeks have also decreased the amount of cars on the road. This, in conjunction with more fuel-efficient automotive technology, has further decreased the amount of revenue generated from the gas tax per vehicle miles traveled (VMT). During this same time, many states including Texas have not raised their gasoline tax rate. As of January 2013, according to the Institute on Taxation and Economic Policy, 16 states had not increased the rate of gasoline taxation for 20 years or more.<sup>1</sup>

Specifically, the level of gas tax in Texas is 18.4 cents per gallon for the federal excise tax and 20 cents per gallon for the state tax.<sup>2</sup> The Texas rate of 20 cents has not changed in 21 years. To compound the problem, the Texas Legislature has diverted some revenue generated through the gas tax to education and other non-infrastructure expenditures.<sup>3</sup>

Other funding sources for mobility projects include:

## TEXAS MOBILITY FUND

The Texas Legislature created the Texas Mobility Fund to accelerate completion of TxDOT projects and improvements. The Fund allows the state to issue bonds for these purposes, which are backed by a dedicated revenue source. House Bill 3588 also authorizes certain transportation-related fees such as motor vehicle inspection fees and driver’s license fees to be moved from the state’s General Revenue Fund to the Texas Mobility Fund. Also, in 2014, Texas voters approved Proposition 1, which amended the Texas Constitution to expand transportation funding – without creating any new taxes or fees –

<sup>1</sup> “Time to tweak gas taxes? States weigh options,” Larry Copeland, USA TODAY, January 25, 2013.

<sup>2</sup> [http://www.gaspricewatch.com/web\\_gas\\_taxes.php](http://www.gaspricewatch.com/web_gas_taxes.php)

<sup>3</sup> [http://ftp.dot.state.tx.us/pub/txdot-info/sla/education\\_series/txdot\\_funding.pdf](http://ftp.dot.state.tx.us/pub/txdot-info/sla/education_series/txdot_funding.pdf); <http://www.lbb.state.tx.us/Documents/Publications/Primer/Highway%20Funding%20Primer%20312012.pdf>

by enabling some oil and gas tax revenues to be deposited into the State Highway Fund versus the Economic Stabilization Fund.

**STATE INFRASTRUCTURE BANK**

TxDOT set up this banking system with federal and state funds. Given TxDOT’s own funding constraints, the Infrastructure Bank is designed to encourage local entities to pay a larger share of the cost of highway projects, which is a key way to expedite needed improvements. Local entities may apply for loans, lines of credit, letters of credit, bond insurance, and capital reserves for roadway improvement projects.

**ROAD IMPACT FEES ON NEW DEVELOPMENT**

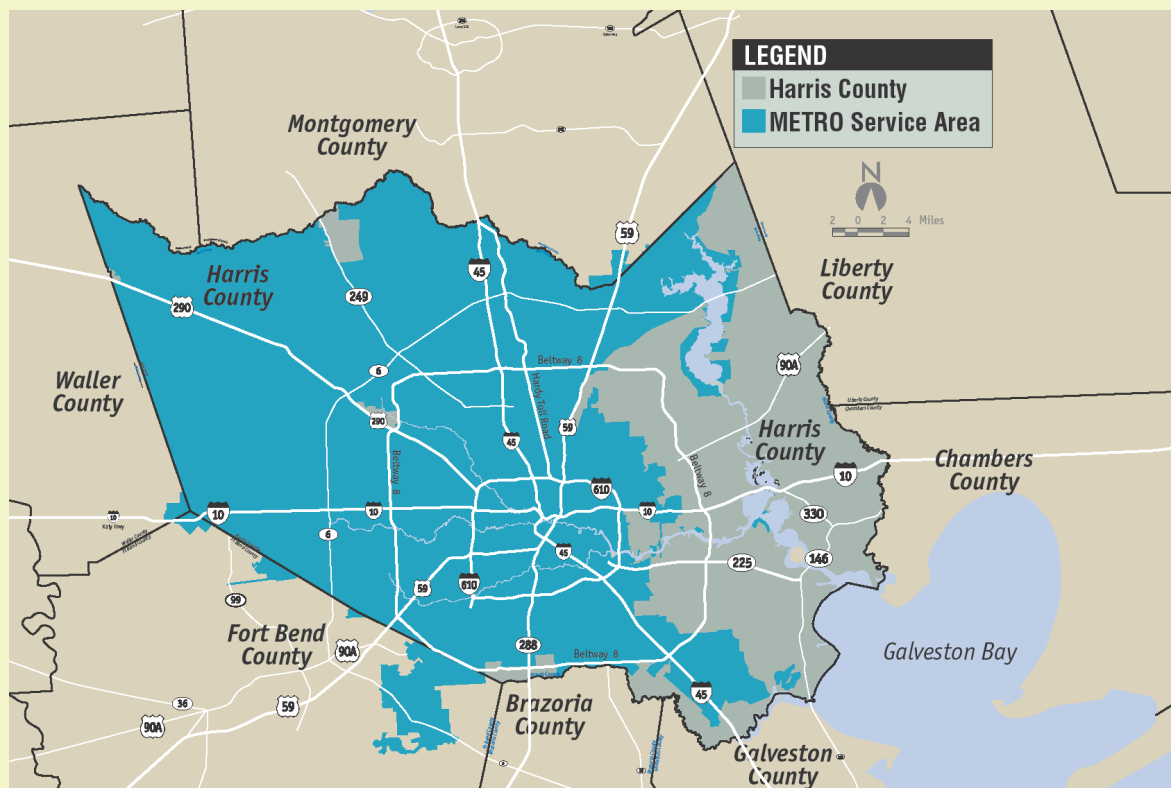
Road impact fees ensure that new development pays its fair share of the cost to improve the transportation system, based on the added traffic demands such development will generate, so as not to exacerbate existing traffic congestion issues or create new problems. The City of Pearland explored this option in the mid-2000s, with City officials ultimately deciding not to pursue it. However, the City has used water/wastewater impact fees for some time, which apply the same “fair share” principle to new development.

**TOLL FEES**

The use of toll revenue financing is attracting increased attention as a means to complete transportation projects when other funding sources may be limited. Issuing bonds secured by toll revenue gives state and local authorities the ability to accelerate transportation projects that might otherwise not be built for some time, if at all, relying only on traditional funding sources. HB 3588 allows TxDOT to enter into an agreement with a Regional Mobility Authority (RMA) through which TxDOT will pay a per-vehicle fee to the RMA as reimbursement for RMA-led construction and maintenance of state highways, or to compensate the RMA for taking maintenance responsibility for certain facilities transferred by TxDOT. Based on pre-determined levels of usage, this approach allows TxDOT to effectively pay “tolls” on behalf of motorists using a new facility, with the revenue derived from traditional funding sources such as the gas tax. The “shadow toll” or “pass-through financing” payments received by the RMA from TxDOT can then be used to repay revenue bonds issued by the RMA to advance the project.

**FIGURE 3.1, METRO Service Area**

Source: Metropolitan Transit Authority of Harris County (METRO)





### LOCAL DEBT MECHANISMS

Cities can generate funds for roadway and other capital improvements through two forms of debt, General Obligation bonds and certificates of obligation (COs). Issuing bonds to fund City improvements largely depends on a favorable bond rating and low interest rates, as well as the support of local voters through bond referenda, while COs do not require voter approval. The City of Pearland has a long history of successful voter-supported bond programs that enabled the phased funding and completion of a range of mobility improvements over a multi-year timeframe.

### TRANSIT FUNDING

Most of Pearland lies within the Census-designated Houston urbanized area. Federal funding generated by Pearland area residents is sent to the Metropolitan Transit Authority of Harris County (METRO). However, Pearland is not within the service area of METRO as shown in **Figure 3.1, METRO Service Area** (on the previous page). Therefore, no federal formula funds have been allocated to Pearland. This must change if Pearland is to offer any type of transit services to residents.

Despite this situation, Pearland's eligibility could change with new Census designations of urbanized areas, Federal Transit Administration (FTA) rules for service areas, or with an expansion of METRO's service area. As a result, Pearland could become eligible for service from either an urban or rural provider at some point in the future.

FTA, through TxDOT, provides funding for public transit in several categories related to geographic area and trip purpose. The primary FTA funding categories include Section 5307 for designated urbanized areas, Section 5311 for non-urbanized areas, and Section 5310 to serve persons with disabilities. Funding categories for special services include Section 5309 for establishing new rail or busway projects, Section 5316 Job Access and Reverse Commute funding for low-income persons, Title III under the Older Americans Act, and Section 1122 of MAP-21 for the Transportation Alternatives Program, which replaces the funding from pre-MAP-21 programs including the Safe Routes to School Program.

### H-GAC REGIONAL TRANSPORTATION PLAN

The Regional Transportation Plan (RTP) maintained

by the Houston-Galveston Area Council (H-GAC) was recently updated, with H-GAC's Transportation Policy Council (TPC) adopting the new 2040 RTP in January 2015. The RTP is a long-range planning document that identifies future transportation needs, and the roadway, transit, and other transportation projects that will best meet those needs. The plan also establishes future transportation policy, projects and programs that meet federal air quality standards and are affordable based on transportation revenue projections. Federal regulations for RTPs require that they have at least a 20-year planning horizon.

The previous active Regional Transportation Plan (RTP) was adopted in October 2010, and was an update of the original 2035 RTP, which had been adopted in October 2007. (Note that all RTP-related information and projections in this plan section are based on the 2010 version as the 2040 RTP update was still pending.) The 2010 update reflected the fiscal outlook at that time compared to what had been projected in the October 2007 version. The projected transportation expenditures in 2007 totaled approximately \$157 billion for financially constrained projects. Due to the 2008 recession, the projected expenditures in 2010 were cut almost in half to \$87 billion for financially constrained projects. Many projects were removed from the RTP entirely, including FM 518 in Pearland, and other projects were changed in terms of their scope, costs and limits. Locally funded projects completed since 2007 were also removed.<sup>4,5</sup>

The new 2040 RTP includes performance measures and standards for the regional transportation system. This is to comply with 2012 federal surface transportation funding legislation, Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21). The 2040 RTP is also based on the newest available demographic data and projected land use changes, and contains reworded and reformulated goals for consistency with the new performance measures and standards.

Once a new RTP is adopted, H-GAC's project selection process screens and determines which transportation projects actually move forward. When a city, county or other public agency wants to use federal or state dollars for a transportation project or program in the region, the project/program must first be submitted, selected and included in the RTP before it can be built.

4 [http://www.h-gac.com/taq/plan/2035\\_rtp.aspx](http://www.h-gac.com/taq/plan/2035_rtp.aspx)

5 <http://www.h-gac.com/taq/plan/2040/default.aspx>



**TABLE 3.1,** Major Mobility Projects Completed Since 1999 Pearland Comprehensive PlanSource: *City of Pearland, CDM Smith*

Map ID	Roadway	From	To	Description	Lead Agency	Status
1	Barry Rose Rd	Broadway St/ FM 518	Pearland Parkway	Widen 0.3 mi 2-lane to 4-lane w/ continuous turn lane; 1.8 mi of 4-lane divided roadway on new location	City	Completed
2	Hughes Ranch Road	Stone Rd	Garden Rd	Construct 4-lane	City	Partially Completed
3	Cullen Blvd/FM 865	Broadway St/ FM 518	Southfork	Construct 4-lane	City	Completed
4	Dixie Farm Rd	15 ft S of Broadway St/ FM 518	SH 35	Widen to 4 lanes	City	Completed
5	Dixie Farm Rd	Harris Co line	Broadway St/ FM 518	Widen to 4 lanes	City	Completed
6	Cullen Blvd/FM 865	Harris Co line	Broadway St/ FM 518	Widen to 4-lane divided	TxDOT/City	Completed
7	John Lizer Rd	SH 35	Pearland Pkwy	Widen from 2 to 4-lane divided curb and gutter	City	Completed
8	Magnolia Dr at BNSF RR	-	-	Construct grade separation @ RR track	City	Completed
9	Magnolia St	Dead end west of McLean	Veterans Dr	Widen from 2 to 4-lane divided curb and gutter	City	Completed
10	Magnolia St	Veterans Dr	SH 35	Widen from 2 to 4-lane divided curb and gutter	City	Completed
11	Magnolia/ Southfork	Magnolia dead end	CR 89	Construct 4-lane divided	City	Completed
12	McHard Rd	SH 35	Pearland Pkwy	Construct 4-lane divided urban road on new location	City	Completed
13	Pearland Pkwy	Beltway 8	Oiler Drive	Construct new 4-lane extension	City	Completed
14	SH 288 at Bailey Rd/ CR 101	-	-	Construct grade separation	TxDOT	Completed
15	SH 288 at CR 58 and CR 59	-	-	Construct four overpass structures	TxDOT	Completed
16	SH 288	McHard Rd/FM 2234	CR 59	Construct 2-lane frontage roads on both sides	City	Partially Completed
17	SH 288	Harris Co line	McHard Rd/FM 2234	Connect existing frontage roads	TxDOT	Completed
18	SH 35	Harris Co line/ Beltway 8	Broadway St/ FM 518	Widen to 6-lane divided w/ curb and gutter in sections	TxDOT	Completed
19	Bailey Rd/CR 101	SH 288	SH 35	Construct 3.5 mi of 4-lane roadway, rehab 4.7 mi of existing roadway	City/County	Partially Completed
20	FM 2234	FM 521	SH 288	Widen to 4 lanes	TxDOT	Completed
21	FM 518 extension	Alameda School Rd	FM 521	Construct 4-lane	City/ Developer	Completed
22	Southfork/John Lizer/ CR 59 (Magnolia St)	Kirby Dr	Pearland Parkway	Widen from 2 to 4 lanes	City	Completed

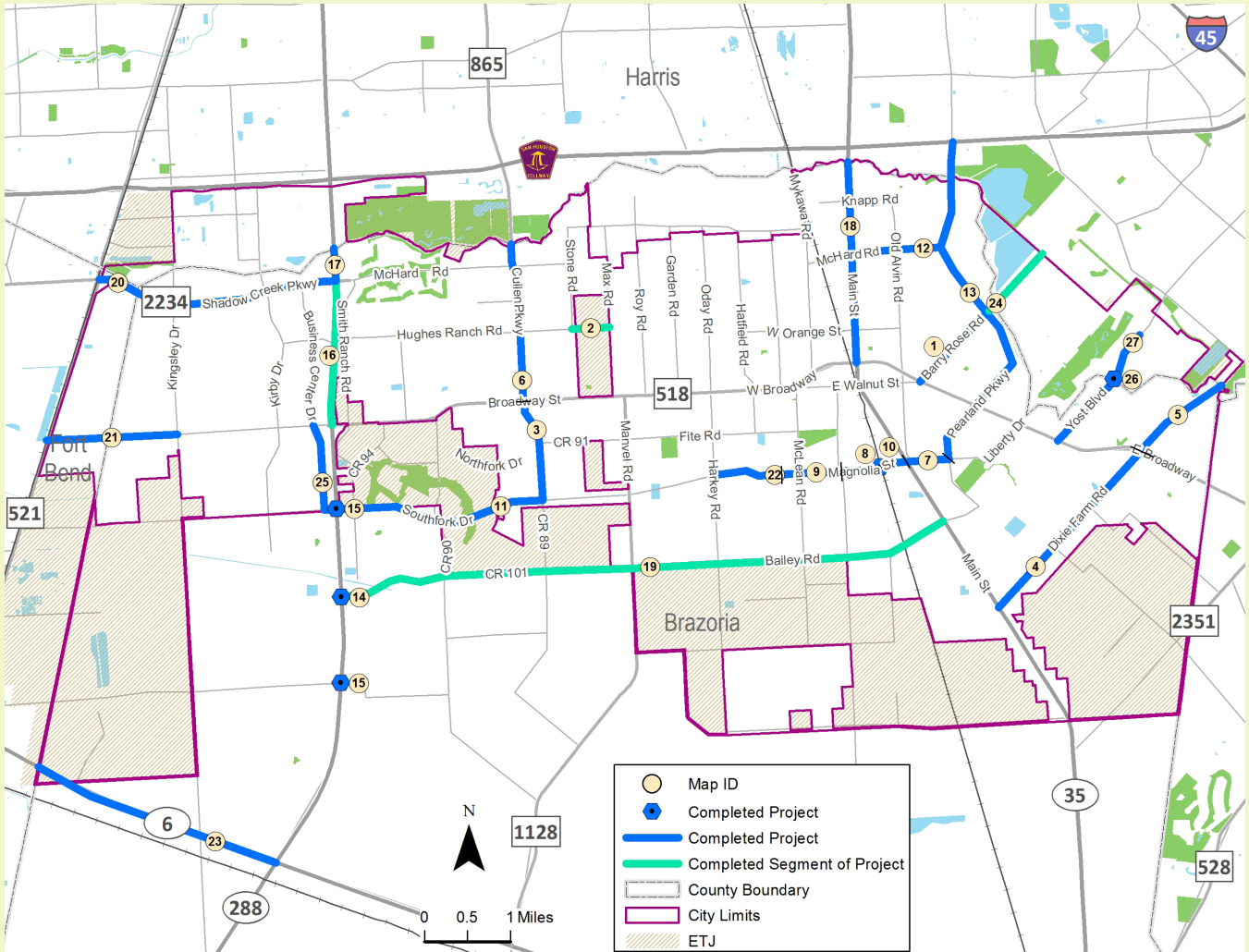
**TABLE 3.1,** Major Mobility Projects Completed Since 1999 Pearland Comprehensive Plan

Source: City of Pearland, CDM Smith

Map ID	Roadway	From	To	Description	Lead Agency	Status
23	SH 6	Fort Bend Co line	SH 288	Widen to 6-lane divided	TxDOT	Completed
24	Hughes Rd	Pearland Parkway	City limits	Construct new 4-lane extension	City/ Developer	Completed
25	Business Center Dr	Broadway St	Southfork/ CR 59	Construct 4-lane divided w/ curb and gutter on new alignment	City	Completed
26	Yost Rd/ Scarsdale Rd	-	-	Extend Yost Rd across Clear Creek eastward	City/Harris County	Completed
27	Yost Blvd	Broadway St/ FM 518	Scarsdale dead end	Widen 4-lane undivided	City	Completed

**FIGURE 3.2,** Major Mobility Projects Completed Since 1999 Pearland Comprehensive Plan

Source: City of Pearland, CDM Smith



**TABLE 3.2,** Committed Projects in 2035 Regional Transportation Plan

Source: H-GAC 2035 Regional Transportation Plan

Map ID	Project ID	Roadway	From	To	Description	Total Cost (MIL)	Date	Status
1	668	Bailey Rd/CR 101	FM 1128	Veterans Dr	Widen from 2 to 4-lane divided with raised median	\$33.8	5/1/2015	TIP
2	671	Hughes Ranch Rd/CR 403	Smith Ranch Rd	Cullen Blvd/ FM 865	Widen from 2 to 4 lanes, add median and shoulders, and sidewalks	\$22.3	8/1/2017	Short
3	7602	Mykawa Rd	Beltway 8	Broadway St/ FM 518	Widen from 2 to 4 lanes with raised median (S of McHard) and flush median (N of McHard)	\$20.7	7/1/2016	TIP
4	7624	Mykawa Rd	Broadway St/ FM 518	Walnut St W	Construct new 4-lane divided to connect Mykawa to Veterans	\$6.7	1/1/2021	Short
5	7625	Hughes Ranch Rd/CR 403	Max Rd	Garden Rd	Construct 4-lane	\$12.8	1/1/2018	Short
6	7626	CR 48	Beltway 8	Clear Creek	Widen from 2 to 4-lane divided	\$9.9	1/1/2018	Short
7	7628	Fite Rd	McLean Rd	Veterans Dr	Construct 4-lane undivided	\$5.3	8/1/2014	TIP
8	7630	Pearland Pkwy	Dixie Farm Rd	FM 2351	Construct 4-lane divided on new location	\$19.5	1/1/2018	Short
9	7631	Orange St W	O'Day Rd	Hatfield St	Construct 4-lane undivided	\$5.6	1/1/2018	Short
10	7874	McHard Rd/ FM 2234	Cullen Blvd/ FM 865	Mykawa Rd	Construct 4-lane divided on new location	\$45.9	2/1/2016	TIP
11	11633	Cullen Blvd/ FM 865	Southfork Dr	Bailey Rd	Widen from 2 to 4-lane divided curb and gutter	\$9.5	1/1/2018	Short
12	11635	Max Rd	McHard Rd/ FM 2234	Hughes Ranch Rd/CR 403	Widen from 2 to 4 lanes divided curb and gutter	\$8.9	1/1/2018	Short
13	11636	Max Rd	Hughes Ranch Rd/CR 403	Broadway St/ FM 518	Widen from 2 to 4-lane divided curb and gutter	\$7.9	12/1/2014	TIP
14	11639	Harkey Rd	Broadway St/ FM 518	Bailey Rd/CR 101	Widen from 2 to 4-lane divided curb and gutter	\$22.3	1/1/2021	Short
15	11640	Veterans Dr	Walnut W	Bailey Rd/CR 101	Widen from 2 to 4-lane divided curb and gutter	\$24.5	1/1/2018	Short
16	11641	Veterans Dr	Bailey Rd/CR 101	Hastings Cannon Rd	Widen from 2 to 4-lane divided curb and gutter	\$45.7	1/1/2020	Short
17	11642	Hastings Cannon Rd	Harkey Blvd	Veterans Rd	Widen from 2 to 4-lane divided curb and gutter	\$4.1	1/1/2032	Long
18	11643	Hastings Cannon Rd	Veterans Rd	SH 35	Widen from 2 to 4-lane divided curb and gutter	\$38.8	1/1/2033	Long
19	11653	CR 894	Fort Bend Co line	CR 48	Widen from 2 to 4-lane divided curb and gutter	\$37.6	1/1/2031	Long
20	11654	Smith Ranch Rd/CR 94	Hughes Ranch Rd/CR 403	N of Broadway (FM 518)	Widen from 2 to 4-lane divided curb and gutter	\$5.3	5/1/2017	TIP
21	11655	O'Day Rd	McHard Rd/ FM 2234	Broadway St/ FM 518	Widen from 2 to 4-lane divided curb and gutter	\$20.7	1/1/2018	TIP



**TABLE 3.2,** Committed Projects in 2035 Regional Transportation Plan

Source: H-GAC 2035 Regional Transportation Plan

Map ID	Project ID	Roadway	From	To	Description	Total Cost (MIL)	Date	Status
22	11764	SH 288	Alameda Line GRT (RR ROW)	Intermodal Terminal	SH 288-Alameda line guided rapid transit	\$250	9/1/2033	Long
23	12759	CR 59	Fort Bend Co line	CR 48	Widen from 2 to 4-lane divided with bridge	\$12.6	1/1/2023	Short
24	13564	Harkey Rd	Bailey Rd/CR 101	Hastings Cannon Rd	Widen from 2 to 4-lane divided curb and gutter	\$26.1	1/1/2025	Long
25	13565	Max Rd	BW 8	McHard Rd/ FM 2234	Widen from 2 to 4-lane divided curb and gutter	\$13.9	1/1/2018	Short
26	13566	O'Day Rd	Brookside Rd	McHard Rd (future alignment)	Widen from 2 to 4-lane divided curb and gutter	\$1	1/1/2018	Short
27	13856	SH 288	IH-610	Brazoria Co line	Construct 4 toll lanes	\$192	8/1/2014	TIP
28	13583	CR 48	Broadway St/ FM 518	CR 894	Widen from 2 to 4-lane divided rural section with 10 ft outside shoulders	\$15	6/1/2014	TIP
29	12760	CR 59	CR 48	Business Center Dr	Widen from 2 to 4 lanes with bridge	\$20.3	1/1/2015	TIP
30	13765	SH 288	Harris Co line	CR 58	Construct 4 toll lanes with grade separations	\$196.4	1/1/2014	TIP
31	11644	Palmetto Rd/ CR 49	Alameda Rd/ FM 521	Fort Bend Co line	Widen to 4-lane divided	\$1.9	1/1/2020	Short
32	669	FM 2351	SH 35	Galveston Co line	Reconstruct and widen to 4-lane divided rural section	\$3.3	9/1/2019	Short
33	13767	SH 288	CR 58	SH 99	Construct 4 toll lanes with grade separations	\$261	8/1/2032	Long
34	12402	CR 58	SH 288	FM 1128	Widen to 4 lanes	\$34.8	1/1/2020	Short
35	14255	SH 288 at Beltway 8	-	-	Construct 4 direct connectors at Beltway 8 interchange	\$130	4/1/2032	Long
36	7622	Pearland Pkwy	Oiler Dr	Dixie Farm Rd	Construct new 4-lane divided with raised median	\$6	8/1/2013	LET/TIP
37	5070	Beltway 8 at Mykawa Rd and SFRR	-	-	Extend Beltway 8 with grade separations (two 3-lane frontage roads)	\$8.6	8/1/2014	TIP

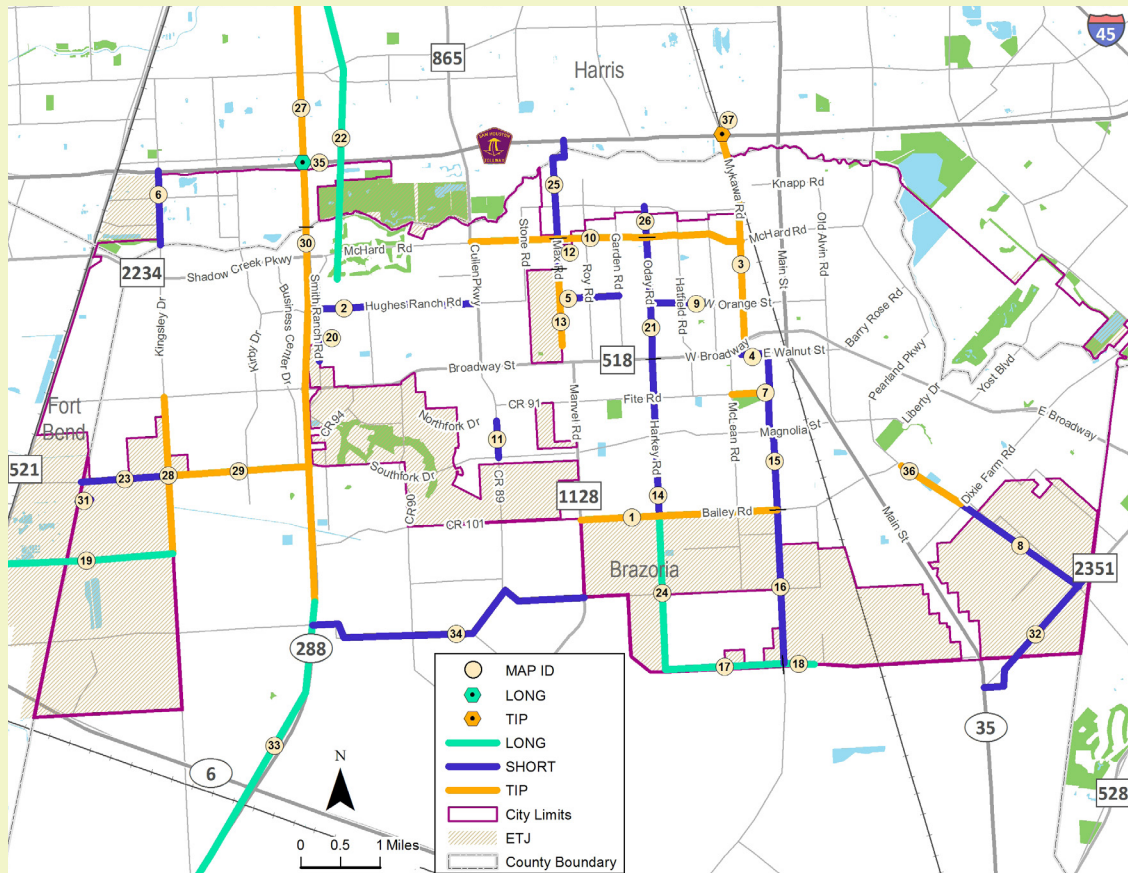
## Legacy of Past Long-Range Planning

Since the time of the City's 1999 Comprehensive Plan, numerous major transportation projects have been completed within Pearland's jurisdiction as listed in **Table 3.1, Major Mobility Projects Completed Since 1999 Pearland Comprehensive Plan**, and as illustrated in **Figure 3.2** (same title) on page 3.6. These projects were identified in the 1999 Comprehensive Plan and/or in periodic H-GAC regional transportation plans. Among the most significant projects were:

- Dixie Farm Road, which is now a four-lane divided roadway between SH 35 and I-45.
- Pearland Parkway, with an initial four-lane segment constructed between Oiler Drive and Beltway 8.
- SH 35, which was widened to a six-lane divided facility between Beltway 8 and FM 518/ Broadway.
- Sam Houston Tollway, which was widened from four to eight lanes between US 59 and SH 288, and has its four original main lanes from SH 288 to just west of I-45.

**FIGURE 3.3**, Committed Projects in 2035 Regional Transportation Plan

Source: H-GAC 2035 Regional Transportation Plan



A number of major projects were also identified in H-GAC's 2035 Regional Transportation Plan, which was adopted several years ago and recently updated as the 2040 RTP. These projects are listed in **Table 3.2, Committed Projects in 2035 Regional Transportation Plan** on page 3.7, and illustrated in **Figure 3.3** (same title).

Among the most significant projects are:

- Pearland Parkway, involving construction of another four-lane divided segment from Dixie Farm Road to FM 2351.
- SH 288, involving construction of four toll lanes from IH-610 to the Brazoria County line.
- SH 288, involving construction of four toll lanes with grade separations from CR 58 to SH 99.
- SH 288, involving construction of four direct connectors at the Beltway 8 interchange.

## Status and Outlook for Mobility

### EXISTING TRANSPORTATION SYSTEM

The Pearland regional roadway network consists of freeway, toll road, arterial, collector, and local roadways providing mobility and access at the regional and local levels. TxDOT maintains the state roadway system, which mainly provides regional mobility. Cities and counties collectively maintain the rest of the road network, which provides access to the state system and also serves travel needs within the region and between and within local communities.

As the city of Pearland has reached the threshold population of 50,000 for implementing the program, the TxDOT Signal Takeover Program has been implemented to turn over control, operation, and

maintenance of 50 previously TxDOT-maintained traffic signals to the City. The locations of these signals are shown in **Figure 3.4, TxDOT Traffic Signals Operated by the City of Pearland**. The TxDOT traffic signals which are now operated and maintained by the City include signals on McHard Road/Shadow Creek Parkway/FM 2234, Broadway Street/FM 518, Southfork Drive/CR 59, Cullen Boulevard/FM 865, Manvel Road, SH 35, and SH 288.

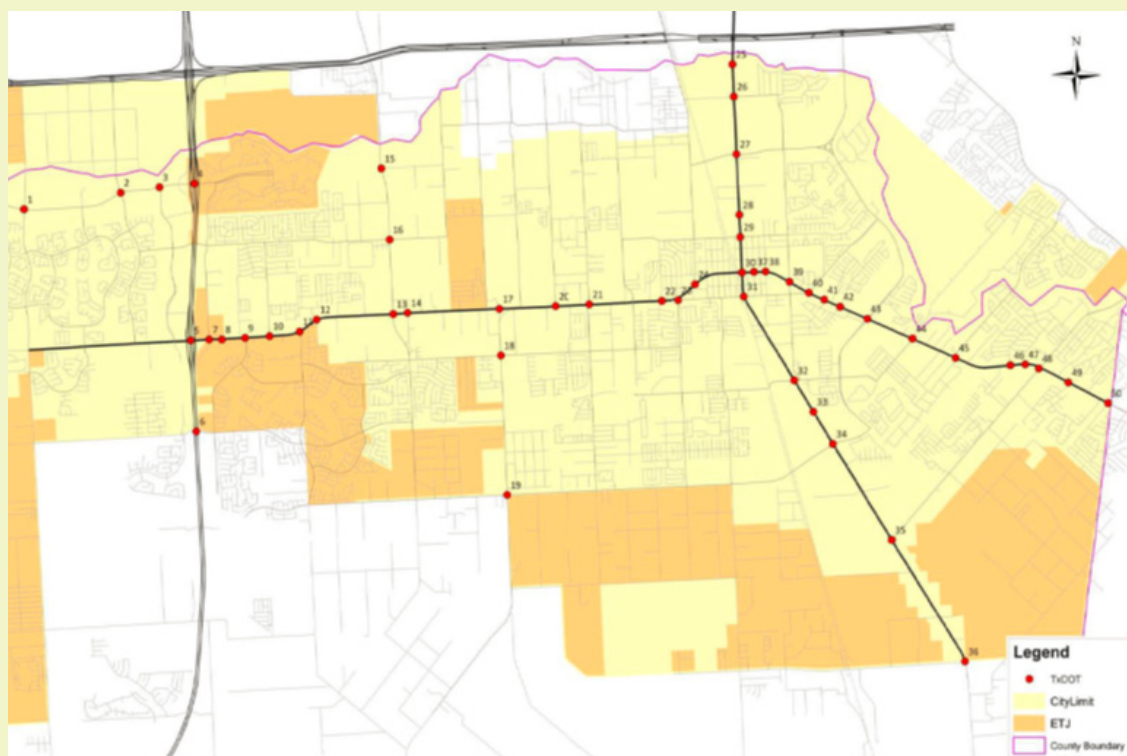
Pearland is known as primarily a bedroom community, with many travel destinations located in and around Houston. The resultant travel patterns focus on north-south movement along major roadways such as SH 288. Secondary east-west movements to access SH 288 impose high traffic demands on arterials such as FM 518/Broadway.

Significant regional and local roadways in the Pearland area include:

- **Sam Houston Tollway and Beltway 8**, which are components of an outer loop around the City of Houston. It is the second circumferential loop outside of Houston with IH-610 being the innermost loop. Tolloed main lanes are known as the Sam Houston Tollway, and are operated by
- **SH 288** has been identified in numerous plans and public meetings as the primary “hot spot” traffic location for Pearland. It is the primary route providing access to the Texas Medical Center and downtown Houston locations. In addition to providing regional access for commuters, SH 288 serves local traffic needs with retail uses focused at its intersection with FM 518/Broadway and other major intersecting roadways.
- **SH 35 / Main Street** runs north and south on the eastern side of Pearland.
- **SH 6** crosses the southwest corner of Pearland’s ETJ, connecting FM 521, Old Airline Road, and SH 288.

**FIGURE 3.4.** TxDOT Traffic Signals Operated by the City of Pearland

Source: Pearland TxDOT Signal Takeover Technical Memorandum #1







Improvements to Bailey Road ▲ will make it a much safer four-lane roadway, while recent upgrades to Dixie Farm Road ▼ include sidewalks and on-street bike lanes



- **FM 518 / Broadway** is the major east-west route in Pearland. Discussions during small-group listening sessions held in August and September 2013 and informal polling results from a later Comprehensive Plan Advisory Committee meeting showed that improving east-west circulation was considered one of the most important mobility issues in the community.
- **FM 521** runs north-south, parallel to SH 288 and about three miles west of the corridor, and forms portions of the western border of Pearland. Its current configuration is six lanes with a center turn lane from Beltway 8 running south, dropping quickly to five lanes and then to four at Riley Road. South of Riley Road it reduces to two lanes with a center turn lane. The four-lane section of FM 521 is being extended, with an overpass at the railroad tracks near Alameda Road. Construction on this extension is slated to start in 2015.
- **FM 2234 / Shadow Creek Parkway / McHard Road** is an east-west corridor which currently is not continuous across the city. The City's adopted Thoroughfare Plan calls for completing the corridor. The corridor has an existing interchange at SH 288 and an at-grade crossing at SH 35. Construction of the extension is slated to begin in 2017. An overpass at FM 521 and the railroad tracks is scheduled for construction in 2015. According to the 2035 RTP update, the referenced project (MPO ID 7873) is included in the 2014 TIP.
- **Kirby Drive** and the parallel **Business Center Drive** provide important access from residential areas and from the Pearland Town Center to FM 518/Broadway, FM 2234/McHard Road, and SH 288.
- **Cullen Boulevard** provides access to Beltway 8 and enables north-south movement into Houston.
- **Max Road** is parallel to and east of Cullen Boulevard and also provides for north-south movement. It currently does not connect with Beltway 8, but roadway widening and an extension to Beltway 8 are planned. Traffic on Max Road is expected to increase with the completion of a soccer complex currently under construction.
- **Mykawa Road** has four lanes throughout the southern portion of Pearland, but transitions to two lanes north of Orange Street. Comments received at a public open house event for this Comprehensive Plan in October 2013 called for making it four lanes to Beltway 8. Mykawa currently intersects Beltway 8 at a point where the Beltway lanes do not cross the railroad tracks to the east, so it provides direct access to the Sam Houston Tollway only in the westbound direction.
- **Dixie Farm Road** is a four-lane divided arterial for the full extent of its length from SH 35 northward through Pearland. It connects SH 35 with FM 518/Broadway on the east side of Pearland and also provides access to IH-45 in Houston.

- **Pearland Parkway** was built as an entirely new roadway connecting Beltway 8, a new section of McHard Road, and FM 518/Broadway. Long-term plans are to extend the roadway to FM 2351, which will tie into a future extension in Friendswood and League City to provide access to IH-45. Construction on the Pearland Parkway extension to Dixie Farm Road is currently under way. The design of the roundabout at Pearland Parkway and McHard Road is interesting in that it has one lane over part of the circle and two lanes over another part. In some parts of the circle, traffic within the roundabout yields to entering traffic, while at another part incoming traffic yields.
- **Magnolia Street** is parallel and to the south of FM 518/Broadway. It is configured as four-lane divided along most of its length through Pearland, from Business Center Drive in the west to Pearland Parkway in the east. It serves as a reliever route for FM 518.
- **Bailey Road** is parallel and to the south of FM 518/Broadway and Magnolia Street. It is two lanes through most of its length. The portion within Pearland is from FM 1128 to just east of Pearland Parkway. East of SH 35, where its name changes to Oiler Drive and then Marys Village Drive, it is a four-lane divided section. To the west, the two-lane section ends at Silverlake Parkway, where it becomes four-lane divided as far as SH 288. The segment from SH 288 to FM 1128 is in unincorporated Brazoria County and the City of Manvel ETJ.

### SH 288 CORRIDOR

The SH 288 corridor is the focus of several major studies and planned projects for expansion and enhancement, including new managed lanes, a park and ride lot, and commuter bus service. The 2005 *SH 288 Corridor Feasibility Report* reported Level of Service (LOS) on SH 288 from SH 6 to FM 518/Broadway as in the C/D range, dropping to the E/F range north of there all the way to downtown Houston. With the 2005 study projecting that traffic on SH 288 could increase anywhere from 32 to 74 percent through 2035, further degradation in future LOS was expected.

To address this issue, TxDOT, HCTRA and METRO all show the SH 288 managed lanes project in their future project plans. As shown in **Figure 3.5, SH 288 Managed Lanes Project**, the project will have

several phases. The ultimate build-out of the project is for four toll lanes within the existing median with direct connectors at Beltway 8. The total ultimate project length is 25 miles from US 59 in Houston to Grand Parkway/CR 60 north of Rosharon. The initial project runs from US 59 to CR 58. TxDOT will be responsible for the portion from US 59 to the Harris/Brazoria county line, with the Brazoria County Toll Road Authority responsible for the portion from the county line to CR 58. The initial project will construct a four-lane section, but the exact configuration of the direct connectors has not been finalized. Construction is scheduled to begin in 2015 and be complete by 2018.

Complementing the managed lanes project, a separate TxDOT project has identified the preferred alignment for direct connectors from SH 288 to the Texas Medical Center, running along Holcombe Boulevard.<sup>6</sup> Construction there is expected to coordinate with the SH 288 toll lanes project, commencing in 2015 and becoming operational by 2018. The public transit discussion later in this section highlights another initiative intended to relieve SH 288 congestion.

<sup>6</sup> According to TxDOT Houston District design office.

**FIGURE 3.5, SH 288 Managed Lanes Project**

Source: TxDOT Houston District



## THOROUGHFARE NETWORK

### PEARLAND THOROUGHFARE PLAN AND FUNCTIONAL CLASSES

The City-prepared **City of Pearland Thoroughfare Plan map** included in this plan section is the City's current Thoroughfare Plan as last updated and adopted by City Council in February 2014. Line styles are applied to roads on the Thoroughfare Plan map to identify the status of roads and projects and to define each road by its functional class. Line styles identify roads with several options as to their status and of the proposed projects:

- A solid black line indicates a freeway.
- An intermittent line identifies the location of proposed frontage roads on SH 288.
- Other solid lines indicate roads where the width is sufficient for projected needs.
- A dashed line indicates a road for which a widening project is planned.
- A dotted line indicates the alignment for a new road or road connection where right-of-way usually must be acquired.

Existing and planned area roadways are shown and defined in four functional classes. Functional class defines characteristics of a road and its relationship with other roads in the area. It is a somewhat subjective measure, and may change over time as traffic patterns change with residential and commercial development. Generally, the higher level functional classes focus on providing mobility,

### Prospects for Toll Lane Use

As an informal polling exercise, Comprehensive Plan Advisory Committee members were asked, "If special toll lanes are added to SH 288, would you be likely to use the toll lanes?" More than two-thirds of members said they would use the lanes regularly (20 percent) or occasionally (50 percent), with 10 percent saying rarely, and 20 percent never. When the same question was posed to participants in the MindMixer online discussion forum site, the distribution of responses was: 31 percent regularly, 29 percent occasionally, 23 percent rarely, and 17 percent never. Therefore, in both forums, a clear majority of respondents – 70 percent in one case and 60 percent in the other – indicated they would take advantage of the new toll lane option at least on occasion.

providing paths between origins and destinations. Lower level functional classes focus on providing access, with multiple driveway cuts and connections.

- **Freeways** are shown in black, and are part of the state system. They serve high-volume, high-speed regional traffic with full access control. Freeways in the Pearland region are SH 288 and HCTRA's Sam Houston Tollway.
- **Major Thoroughfares**, shown in blue, have a minimum 120-foot right-of-way width. They primarily function to provide regional mobility, but also have a smaller element of providing access. This functional class is designed to serve 15,000 to 30,000 vehicles per day. Major thoroughfares in Pearland include roads such as FM 518/Broadway, FM 2234/McHard Road, SH 35/Main Street, Bailey Road, Dixie Farm Road, FM 521, and Pearland Parkway.
- **Secondary Thoroughfares**, shown in green, have a minimum 100-foot right-of-way width. This functional class is designed to serve 10,000 to 20,000 vehicles per day. Examples of secondary thoroughfares in Pearland include Kirby Drive, Southfork Road, Magnolia Street, Harkey Road, and Veterans Drive.
- **Major Collector Streets**, shown in red, have a minimum 80-foot right-of-way width. This functional class is designed to serve 1,500 to 10,000 vehicles per day. In practice, collector streets provide a larger degree of access to homes and to destinations than do thoroughfares. Stone Road, Walnut Street, Fite Road, and a portion of Orange Street are examples of major collectors.
- **Minor Collector Streets**, shown in purple, have a minimum 60-foot right-of-way width. This functional class is designed to serve 1,500 to 5,000 vehicles per day. Minor collector streets in Pearland include Northfork Drive, Clear Lake Loop, and a portion of Orange Street.

The Thoroughfare Plan also shows the locations of grade separation projects, both for road interchanges and for roads crossing over railroad tracks. It also presents intersection design as a strategy for discouraging through traffic in neighborhood areas. This is done by specifying that collector streets should have offsetting intersections or terminate at "T" or right-angle intersections. Locations for several neighborhood intersections with this treatment are identified on the plan where collector streets are to be widened or right-of-way acquired.



### The Dilemma of Local Street Network Design

The choices that are made in defining the Pearland transportation system will address particular community goals and contribute to solving local mobility issues. However, in an environment of multiple and sometimes conflicting goals, at a practical level a strategy to achieve one goal may not be the optimum solution to address another goal. The current approach to local street networks in Pearland and elsewhere illustrates this dilemma.

A grid street system is promoted in much of the literature relating to neo-traditional development and livable communities. A grid pattern with short block lengths has the advantage of providing multiple paths and shortening travel distances. On the other hand, long straight lengths of street tend to promote speeding, and multiple paths promote “rat runs” of regional traffic seeking alternate routes through residential neighborhoods. This has led to the need for traffic calming programs in neighborhoods with traditional grid street patterns.

Local street patterns in Pearland have mostly been developed with a different approach, often being structured with cul-de-sacs and isolated blocks that define small “neighborhood clusters” such as in the aerial clip below from the Shadow Creek Ranch area (Source: Google Earth). Streets in the distinctly defined neighborhood clusters are often curvy and short, with visual variety in streetscapes and in the shapes of individual lots. Landscaping, parks, and trails can easily be provided between neighborhood clusters to provide green space and recreation. In the



Shadow Creek Ranch example, a water feature is provided in the space between clusters. Through traffic and excessive speed is discouraged without the need for dramatic after-the-fact traffic calming techniques such as traffic humps to try to fix issues that are based on the underlying design of the street system. On the negative side, the cul-de-sac design creates higher-intensity traffic loading points at discrete spots along the collector streets and allows for few alternate travel paths.

Therefore, the choice in the design of the local street structure requires a balancing of multiple goals. In the case of the grid system as compared to the cul-de-sac system, transportation efficiency is balanced against quality of life issues. Trade-offs between such choices will be an issue throughout the Pearland transportation system as it develops and is upgraded to accommodate future growth, with the intent of building an efficient yet “friendly” environment where people have ready access to destinations and a practical choice of travel modes.

### LEVEL OF SERVICE








The sufficiency of a roadway or its need for new capacity is often assessed by its Level of Service (LOS). LOS is an indicator of congestion on a roadway and of the ease of driving conditions that a driver has to face. LOS is not physically measured. Rather, it is typically calculated based on the ratio of a road’s traffic volume to its capacity for a full 24-hour period. These two inputs were obtained from the Pearland portion of the Houston-Galveston Area Council (H-GAC) regional travel demand model, for

the model’s base year (2012) and forecast year (2035), to calculate local LOS.<sup>7</sup>

<sup>7</sup> The LOS information and maps in this section are from Pearland-specific modeling completed in 2013. No new modeling was completed specifically for this Comprehensive Plan update. Such modeling helps to illustrate potential future conditions based on existing conditions and certain assumptions about how current trends may continue or change during the time horizon reflected in the model. The 2013 modeling for Pearland reflected whatever assumptions about the timing and extent of surrounding area growth and resulting traffic generation that were factored into H-GAC’s regional traffic modeling. As H-GAC periodically completes newer modeling in support of Regional Transportation Plan updates, the actual pace of emerging growth in Manvel and other areas south of Pearland will be factored into the newer modeling.

**FIGURE 3.6,** Roadway Level of Service “Grades”

Source: CDM Smith

	<b>A</b> <b>Excellent</b> Very low vehicle delays, free traffic flow, signal progression extremely favorable, most vehicles arrive during given signal phase.		<b>Free Flow</b>
	<b>B</b> <b>Good</b> Good traffic flow, good signal progression, more vehicles stop and experience higher delays than for LOS A.		
	<b>C</b> <b>Average</b> Stable traffic flow, fair signal progression, significant number of vehicles stop at signals.		
	<b>D</b> <b>Acceptable</b> Noticeable traffic congestion, longer delays and unfavorable signal progression, many vehicles stop at signals.		
	<b>E</b> <b>Congested</b> Unstable traffic flow, poor signal progression, significant congestion, traffic near roadway capacity, frequent traffic signal cycle failures.		
	<b>F</b> <b>Severely Congested</b> Unacceptable delay, extremely unstable flow, heavy congestion, traffic exceeds roadway capacity, stop-and-go conditions.		<b>Severe Congestion</b>

Generally, a traffic volume/road capacity ratio leading to LOS in the range from A to D is acceptable. The instability of traffic flow at LOS E and F is generally unacceptable, even for brief times during the morning or evening peak periods. Roads with current or projected LOS in the E or F range are strong candidates for capacity or operational projects.

Pearland’s extraordinary population growth has had a significant impact on the amount of traffic on local and regional streets. The increased traffic has degraded road LOS at all times of the day, but even more severely during the morning and evening peak periods as illustrated in **Figure 3.7a, LOS F Roadways in 2012 from Pearland Travel Demand Model**, which shows the most congested area roadways in 2012. The City has responded to this challenge by implementing a Thoroughfare Plan with projects that enhance the capacity of existing roads, involve new roads, or focus on intersection improvements. These projects are expected to help improve roadway LOS, although the continuing increases in population and trip generation will contribute to ongoing needs for road network improvements as illustrated in **Figure 3.7b, LOS F Roadways in 2035**

from **Pearland Travel Demand Model**, which shows the projected extent of congested roadways in 2035. The 2035 transportation network includes committed projects in the 2035 RTP and projects in the City of Pearland’s Capital Improvements Program (CIP).

Pearland’s key mobility issues and needs are verified by other planning documents for the region, including H-GAC’s Subregional Plan for the Pearland area and the *Pearland 20/20 Strategic Plan*. The Strategic Plan, in particular, points out “...the rapid increase in population, the volume of out-commuters, the dominance of solo commuting, and sub-optimal east-west arterial options” as core challenges to mobility in Pearland. Traffic congestion was identified as the community’s primary challenge.

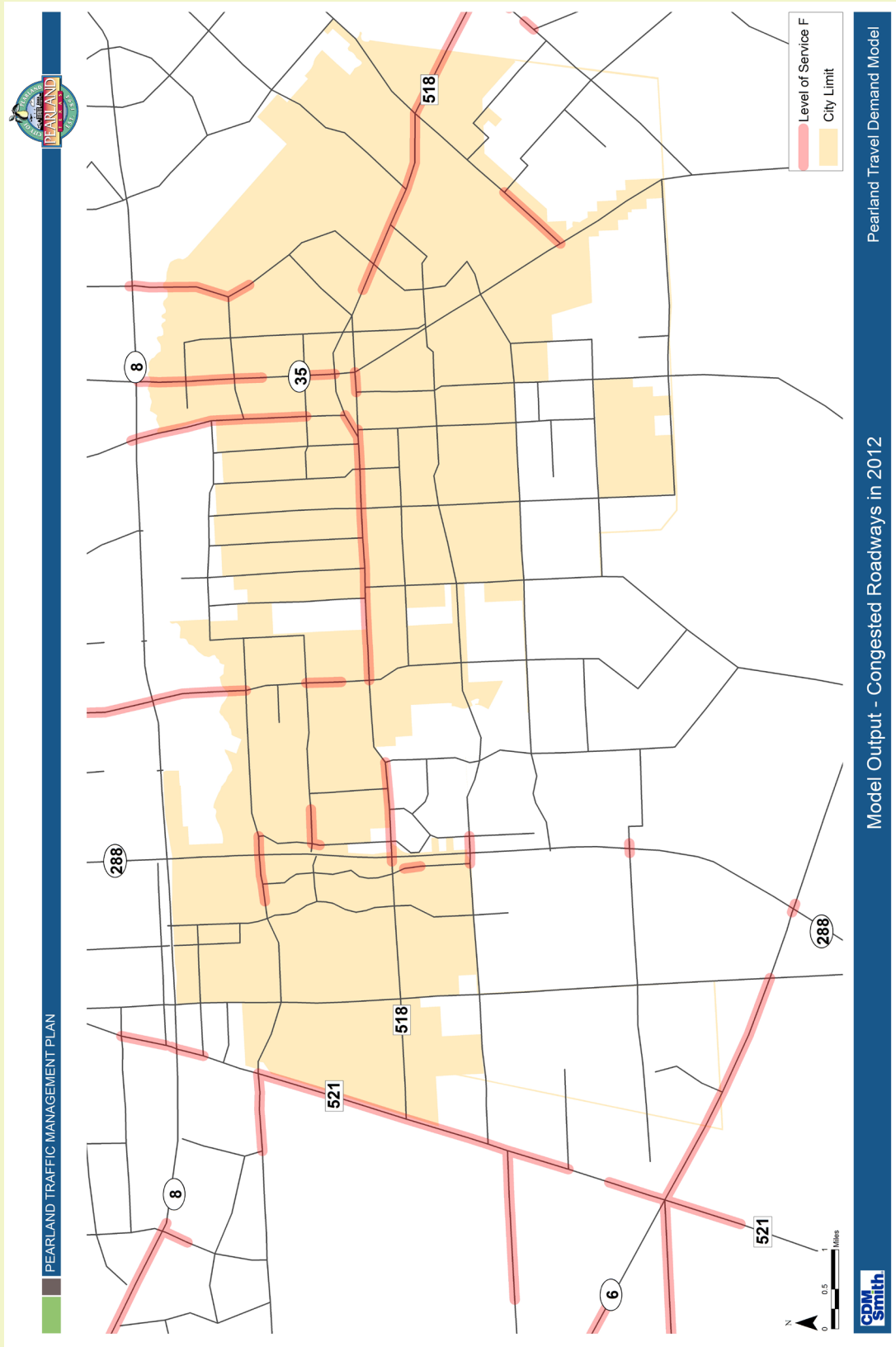
One approach to increased traffic levels is to expand roadway capacities, as Pearland certainly continues to do through its Thoroughfare Plan and Capital Improvements Program. Another approach is to reduce the volume of traffic – or the rate of increase in such volume – even while population is increasing. Pearland is also pursuing this strategy with the pending managed lanes and park and ride lot along the SH 288 corridor. A longer-term approach to reducing traffic congestion is to pursue land development patterns that accommodate multiple uses and have distinct nodes of activity. Pearland Town Center is a good example of this strategy, with retail, office, hotel, residential and civic uses in a unified, master-planned setting.

Accommodating multimodal choices for travelers is both a quality of life issue and a way to make more efficient use of available roadway space. Pearland is addressing this need with the proposed park and ride facility on SH 288, as a first step toward high-profile transit service in the area. Additionally, the Pearland Trail Master Plan captures the vision of a community-wide trail network for pedestrians and bicycles.

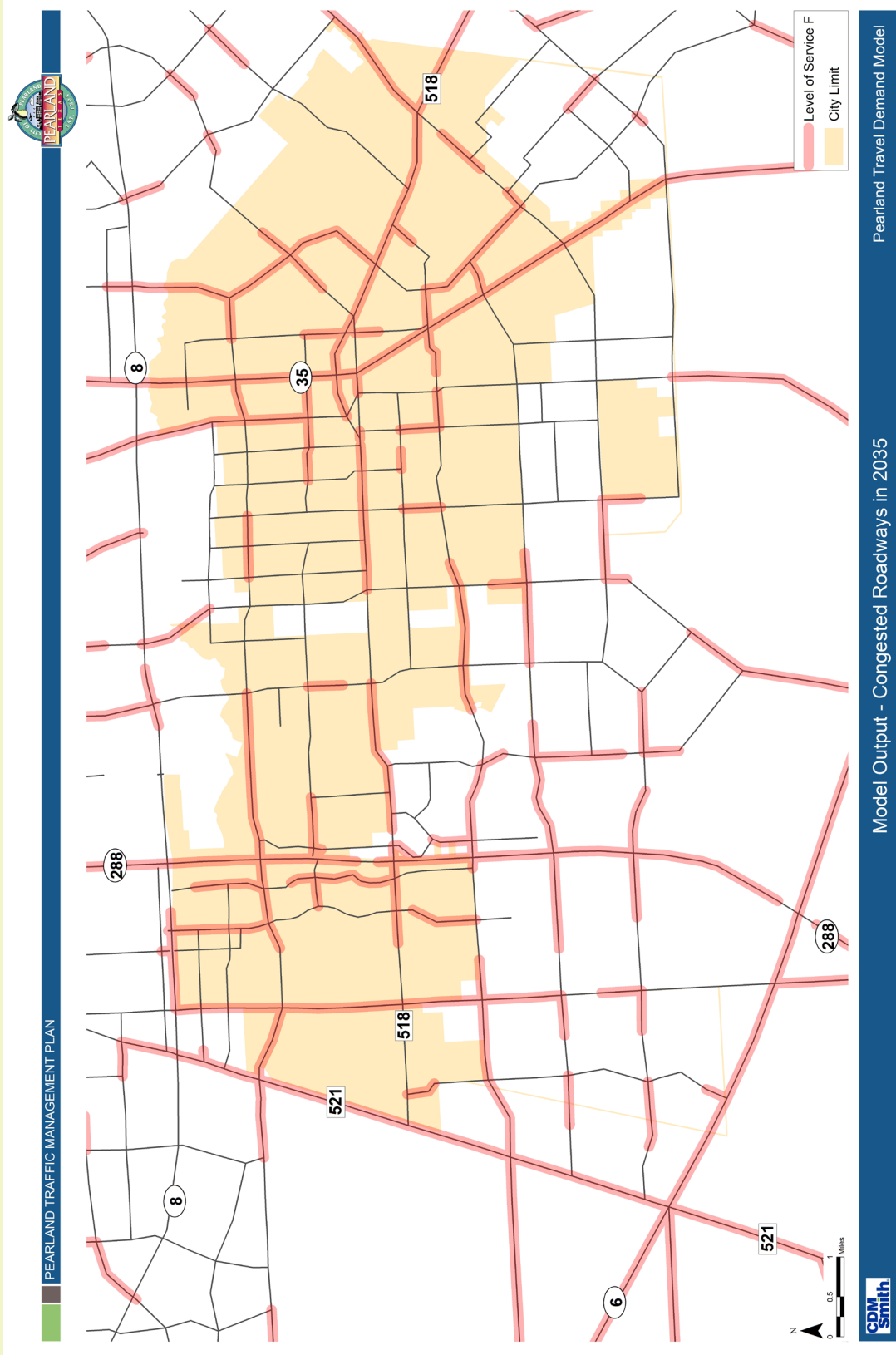
Access management is another strategy for preserving a road’s capacity and enhancing its ability to provide mobility. The balance struck between the functions of supporting mobility and providing access depends on the functional class of a road. Unlimited driveways and other access points on a thoroughfare can compromise its ability to provide mobility by imposing too many traffic loading points on the system. Access management strategies seek to address this issue by defining the number and location of access points on a road to more appropriately match its functional class. Specific access management strategies may

**FIGURE 3.7a**, LOS F Roadways in 2012 from Pearland Travel Demand Model

Source: CDM Smith

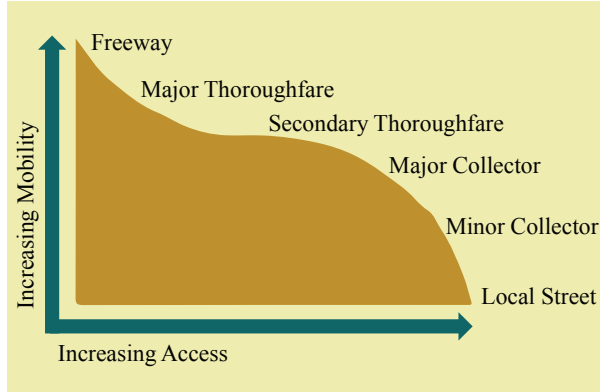






**FIGURE 3.7b**, LOS F Roadways in 2035 from Pearland Travel Demand Model

Source: CDM Smith



include controlling mid-block turns with turn lanes or medians, limiting access points close to intersections, and providing an interconnected street system that allows for alternate travel paths.

Finally, Travel Demand Management (TDM) strategies address the LOS issue in a different way to form a more comprehensive approach to solving traffic issues. Complementing the traditional approach of adding more capacity to a road, TDM is designed to reduce the amount of traffic that the road must carry. TDM strategies include measures to eliminate road trips, as well as to divert them to other travel modes. Specific strategies include promoting ridesharing, working at home or at other satellite locations (“telecommuting”), peak period spreading, and greater transit use. The planned park and ride lot on SH 288 and the proposed commuter bus service to the Texas Medical Center are examples of TDM. A longer-term TDM strategy involves altering land use patterns to eliminate or shorten trips, or to remove them from the regional network and put them on the local street system. Pearland Town Center, which places multiple land uses within easy walking distance, is a local example of this TDM strategy.

### NON-VEHICULAR MOBILITY

Convenient and safe travel for pedestrians and bicyclists is an issue of quality of life as well as of transportation. Both modes can play an important role in the mix of transportation options in Pearland. Additionally, as part of the Houston-Galveston designated non-attainment area for air quality, Pearland can contribute to the overall health of the region as well as to personal health by promoting these non-vehicular modes. A comprehensive pedestrian and bicycle network, as envisioned in the City’s Trail Master Plan, can help to promote

connectivity, convenience, and safety, and thus encourage these other travel modes. Between the Trail Master Plan and the City’s Capital Improvements Program, key components to pursue include:

- **Trails**, which are off-road facilities primarily focused on recreational use. They are generally provided in a totally separate right-of-way from roads, and, in Pearland’s case, sometimes alongside creeks. They are well suited for use by children and inexperienced bicyclists, but are generally not preferred by experienced riders because of potential conflicts with pedestrians.
- **Bicycle Routes**, which are numbered and marked “shared roadways” that place bicycles in mixed traffic without an exclusive right-of-way. The designated routes improve bicycle safety by alerting drivers to the likely presence of bicyclists. By law, bicycles are vehicles and may use any public road other than interstate highways. So, the designation of bicycle routes does not preclude bicyclists from still using public roads.
- **Bicycle Lanes**, which are portions of the roadway that have been exclusively reserved for bicycles, typically by striping or pavement markings. Bike lanes define road space for multiple uses, remind motorists to look for cyclists, and promote an orderly flow of traffic. Bike lanes also encourage cyclists to ride in the street rather than on the sidewalk, encourage them to ride with the flow of traffic rather than against it, and also encourage them to obey traffic laws, which addresses the most common causes of crashes between bicycles and motor vehicles.

### PUBLIC TRANSIT

In November 2011, METRO purchased approximately 16 acres of property along SH 288 to build and operate the Northern Brazoria County Park and Ride facility. The total land cost was \$3.97 million. METRO used 20 percent of its own money (\$794,000) to purchase the property. In December 2012, METRO met with the City and informed Pearland that the METRO Board had changed its mind and was heading in a different direction and would no longer be a partner in the Pearland area park and ride.

Based on this new information, the City entered into an agreement with Goodman Corporation in November 2013 to determine the feasibility of the



Certain areas along Broadway/FM 518, such as segments not yet in the City limits just east of SH 288, lack sidewalks for pedestrians compared to the newest improved thoroughfares in the city



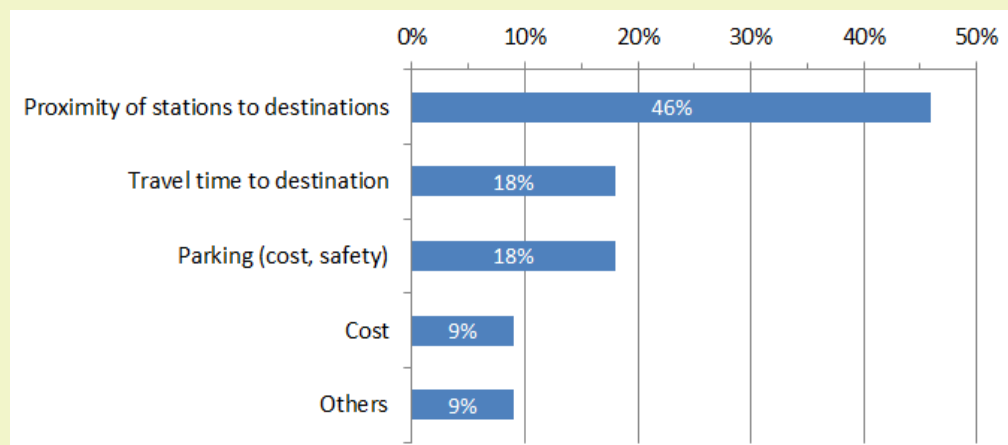
City potentially operating a park and ride and how to fund the operation if it was deemed financially feasible. On May 28, 2014, the City sent a letter to METRO Board Chairman Gilbert Garcia requesting to purchase the 16 acres from METRO for the park and ride. The City also requested the use of federal 5307 funds to be credited as the City's portion of the funding for the project.

Ultimately, if METRO does agree to sell or release the property to the City, the City will need to design the facility, purchase or lease buses, and then construct the facility. For the project to be financially viable, the City must secure federal transit dollars to supplement local funds devoted to operating costs.

### EXISTING TRANSIT SERVICES

In August 2012, the City entered into a contract with Gulf Coast Center - Connect Transit to provide transportation services for eligible residents within the Pearland City limits. Eligible participants must be 60 years of age or older and be disabled and/or low-income designated individuals/families. This is a collaborative effort between the City of Pearland, Gulf Coast Center, and the Harris County Rides Program. The service is a door-to-door taxi program that provides one-stop transportation within Brazoria, Harris and Galveston counties at a reduced rate. The program is a three-year initiative funded partially through Jobs, Access Reverse Commute (JARC) funds and the City of Pearland.

In an informal polling exercise during a Comprehensive Plan Advisory Committee meeting, committee members were asked, "What factors might make you choose rail transit versus private car if such service linked Pearland to major job centers?" The resulting distribution of responses was:



### FUTURE TRANSIT SERVICES

Future transit services must be considered within the City as the population continues to increase and local Transit Indicators demand the service. Pearland must also look at services outside its City limits as the population of the Houston metropolitan area continues to grow and as traffic congestion increases within the City and along major highways in the area.

One possible long-term solution or option is the Kirby Corridor at the northern boundary of Pearland and the southern boundary of Harris County. On January 11, 2010, Pearland City Council passed a resolution “Declaring Kirby Rail Route as the Preferred Passenger Rail Route in Pearland.” Pearland must work closely with the Houston-Galveston Area Council (H-GAC), METRO, Harris County, Brazoria County, and the City of Houston to ensure that rail transit someday extends southward from Houston to Pearland to transport residents to and from Pearland, Downtown Houston, and the Texas Medical Center.

In the meantime, additional park and ride locations should be explored to enable more local residents to transition seamlessly from single-occupant vehicles to transit vehicles for the remainder of their commute to key regional job hubs. This typically occurs in close proximity to freeways, meaning that potential locations with good access should be considered along the Sam Houston Tollway/Beltway 8 (e.g., in

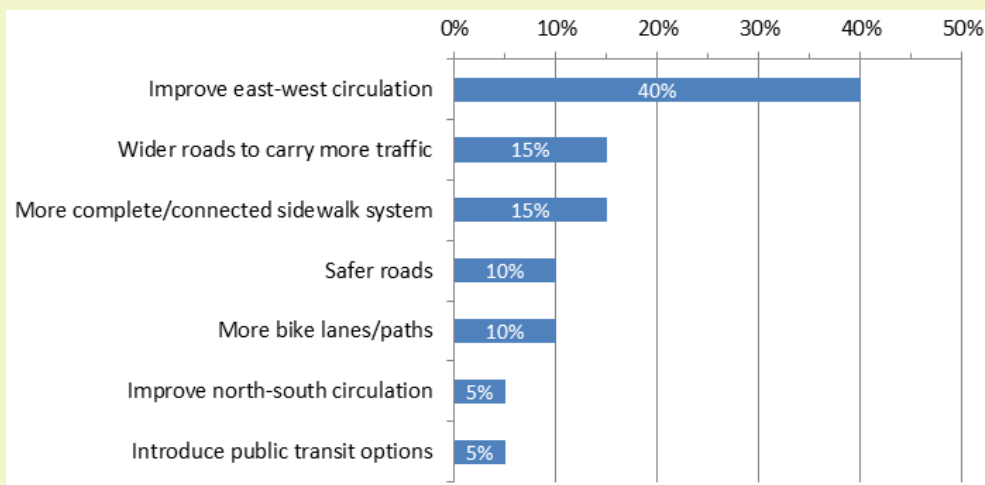
the vicinity of Cullen Boulevard, SH 35, or Pearland Parkway), and possibly at a smaller satellite location away from the IH-45 corridor (e.g., along or near Dixie Farm Road) for residents who commute in that direction.

## Key Planning Considerations

Input and discussions for this Comprehensive Plan update, through workshops with City Council and Planning and Zoning Commission, informal small-group sessions, a community-wide public open house event, the online Virtual Town Hall forum, interaction with the Comprehensive Plan Advisory Committee, and background discussions with City staff, yielded the following concerns related to this Mobility section of the plan:

- The need to celebrate and publicize even more the benefits of mobility projects completed in recent years, ranging from Pearland Parkway and other north-south freeway connections to the multiple railroad overpasses.
- The continued importance of maintaining local and regional focus on investments that will make the journey to and from work a less burdensome aspect of living in Pearland, which remains largely a commuter city.

In an informal polling exercise during a Comprehensive Plan Advisory Committee meeting, committee members were asked, “To improve mobility, what are the most important aspects to focus on [with the opportunity to select two]?” The resulting distribution of responses was:





### What the (Transportation Technology) Future May Hold

Perhaps in more than any other aspect of this Comprehensive Plan – along with innovative green building practices – potential breakthroughs in various transportation-related technologies could have a profound effect on basic daily commuting and travel activities, plus in other areas such as reduced parking needs. The challenge for community planning is that the nature and timing of



such technological advances remains uncertain, although some possibilities and scenarios are becoming less abstract and “futuristic” all the time. This includes everything from vehicle design and materials to fuel options, lowered energy consumption and emissions, and future mobility infrastructure in general.

At the time of this Comprehensive Plan, the prospect of “driverless vehicles” was receiving more attention than ever given the enthusiastic research and development efforts of Google and others (Photo Source: Bloomberg Financial LP). The auto industry group IHS Automotive, in early 2014, forecast that about nine percent of all car sales, or nearly 12 million automobiles, will be self-driven by 2035.<sup>1</sup> The IHS forecast assumes that consumer sales will begin around 2025 and account for about 230,000 cars, or less than one percent of car sales at that point, mainly in the U.S., Europe and Japan. Other sources expect that the trend will start with “luxury” driverless vehicles on public roadways by 2020. IHS also expects growth in self-driving car sales to outpace electric car sales given the continued high cost of batteries.

Here in Texas, the Cockrell School of Engineering at The University of Texas at Austin is among various academic institutions putting research effort and dollars toward such technologies. Researchers in the School’s Center for Transportation Research are studying scenarios involving “shared autonomous vehicles” (SAVs), which would be part driverless vehicle fleets in “on-demand” car-sharing programs, in which users reserve vehicles on a pay-per-use basis after paying an initial subscription fee. (It was noted that two conventional car-sharing programs are already gaining popularity, including ZipCar with 850,000 members and Car2Go with 140,000 subscribers.)<sup>2</sup>

Along with potential level of user interest, especially with likely “premium” price points early on, other considerations for SAVs include the reliability of collision avoidance technology, security issues, and environmental impacts. Computer models run for an area of Austin showed that one SAV would take 11 conventional vehicles off the road, and also eliminate the need for that many parking spaces. Furthermore, ridesharing among SAV users who are going to or from the same places could further reduce overall driving trips. Another research question is whether such systems could be economically viable in other places besides larger and denser urban areas.

<sup>1</sup> “Forecast: 9% of cars will be self-driven in 20 years,” Ed Arnold, Memphis Business Journal, January 4, 2014.

<sup>2</sup> “Shared Autonomous Vehicles: Rethinking The Morning Commute,” University of Texas at Austin Cockrell School of Engineering, April 22, 2014 (<http://www.engr.utexas.edu/features/shared-autonomous-vehicles>).

- The impetus to relieve the community's most intensive traffic "hot spot" focused around the intersection of FM 518/Broadway and SH 288, as confirmed by area-wide studies and citizen sentiment, yet recognizing the financial and engineering challenges involved.
- The need for continued improvement of key cross-town roadways, both east-west and north-south, to improve internal circulation within the city and add more freeway connections (e.g., Bailey, Mykawa, CR 100 connection to SH 288, etc.).
- The strong desire to see the SH 35/Main Street project finally completed, and the needed redevelopment momentum this could spur.
- The potential land use and economic development implications of the eventual completion of the McHard Road corridor across north Pearland, and of the full upgrade of the Bailey Road corridor across south Pearland.
- Concern about the further traffic implications of Pearland's continued rapid growth pace, and how this should factor into future land use planning and policy decisions on allowable development intensities.
- The desire for Pearland to progress toward being a more bike- and pedestrian-friendly community, with well-connected sidewalk and trail networks, and a place where certain neighborhoods and districts are intentionally designed to focus on walkability more than accommodation of vehicular circulation.
- The need to capitalize on the recognized links between roadway design and community image and aesthetics, especially in a community that so many residents and visitors experience primarily from their automobiles.
- Maintaining Pearland's readiness to accommodate potential rail transit investments, if and when they occur in this part of the region, to reap the mobility and economic development benefits of this new travel option.

### Citizen Survey Results

The Pearland Citizen Survey (conducted December 2014 through February 2015) identified mobility as one of two priority issues to focus on in the next two years.

## Goals and Action Strategies

### GOALS

A "goal" is a statement of a desired outcome ("end") toward which efforts are directed, as expressed by more specific objectives and action priorities ("means"). Below are four goals intended to focus plan implementation efforts related to Mobility that follow the adoption of this new Comprehensive Plan:

- Goal 3.1:** A mobility system with **adequate connectivity** to provide multiple travel options, accommodate cross-town trips, and ensure effective emergency response.
- Goal 3.2:** A mobility system that **safely accommodates all modes of travel**, including vehicular, pedestrian, and bicycle – plus public transit if and when feasible.
- Goal 3.3:** A mobility system that supports **local economic development and tax base growth** through the City's own investments in transportation infrastructure, plus those it gains through advocacy with other agencies and levels of government that administer transportation funding.
- Goal 3.4:** A mobility system that helps to establish and reinforce the **desired community image and identity** for Pearland.

### ACTION STRATEGIES

Itemized below are a set of potential actions for responding to the key issues and community needs identified in this Comprehensive Plan section. In particular, three items are highlighted as strategic initiatives for the immediate future.



#### STRATEGIC PRIORITY 1: STATE HIGHWAY 288 CORRIDOR IMPROVEMENTS

Without question, the uppermost quality of life concern expressed by Pearland residents during this comprehensive planning effort is the need to "fix" the extreme traffic congestion situation in the SH 288 corridor during peak morning and afternoon

commuting times. The City of Pearland, on its own, can only marginally affect this situation with direct physical improvements, mainly related to the roadways and intersections where traffic accesses, exits and passes under the freeway. As the City already recognizes, the more essential role it can play is to maintain active and close relationships with all levels of government and public agencies that administer transportation dollars and/or directly implement critical projects such as major freeway improvements. Through such advocacy efforts, Pearland aims to receive its “fair share” of mobility funding given the area’s recent and ongoing growth trajectory, and also ensure that programmed improvements are carried out expeditiously.

Among its 2013-14 City Council Goals, Council’s first priority under Transportation was to “Continue to Build Relationships with All Stakeholders and Actively Lobby Elected Officials/TxDOT to Ensure Pearland’s Priority Transportation Interests/Needs are Met.” The City of Pearland is already well represented at all levels of the Houston-Galveston Area Council (H-GAC), the “Metropolitan Planning Organization” that annually allocates significant transportation funds to projects across the region through its Transportation Improvement Program (TIP). This includes City officials and senior staff serving at the Board of Directors and policy level (Transportation Policy Council), and also participating on committees that deal with more technical and programmatic matters (e.g., Technical Advisory Committee, TIP Subcommittee, and Pedestrian and Bicycle Subcommittee). The City also monitors and coordinates with other key agencies such as TxDOT, area Toll Road Authorities, County precincts, and



METRO and BayTran in the transit arena. Additionally, the Greater 288 Partnership has long provided a convenient forum for engaging state and federal elected officials and agency leaders, along with a network of other interested parties and advocates. Finally, subregional transportation planning efforts in recent years have afforded another opportunity for coordination and partnerships across jurisdictional boundaries, which will continue as the focus has shifted to implementation and ongoing cooperative planning.

### STRATEGIC PRIORITY 2: TARGETED CAPITAL PROJECTS

The City of Pearland is noted for its commitment to meticulous and effective capital improvements planning and programming, necessitated by the community’s growth pace and associated demands for new and expanded public facilities. Given Pearland’s extensive geographic area and automobile dependence, ongoing investment in street and highway construction, extensions and upgrades will remain a prime focus of municipal government. This is prudent and essential given the long-term Level of Service outlook for the area roadway network summarized earlier in this plan section, which is even after factoring in the extent of mobility improvements anticipated in the years ahead. The City’s 2013-14 annual budget also cited citizen survey results that confirmed traffic as the number one concern of Pearland residents.

Mobility-related projects accounted for approximately 45 percent of the City’s five-year Capital Improvements Program (CIP) for 2014-18, or \$160.1 million of the total \$354.3 million package. Within the five-year cycle, capital expenditures on street projects will rise from \$9.2 million in 2014 to a peak of \$72.2 million in 2017, when such projects will account for nearly two-thirds (64 percent) of all CIP spending that year.

The largest source of funding is “other funding sources,” which reflects the City’s continued success at securing transportation appropriations and support through programs at the federal, state and regional levels. Over the 2014-2018 CIP cycle, just over \$67 million (42 percent) of the mobility total will come from these other sources. For example, the City’s 2013-14 annual budget pointed out that \$32.6 million in TIP funds will support design and construction of the McHard Road extension from Mykawa to Cullen. This means that TIP funds will cover 80 percent of the project cost, with the City providing the required 20 percent match with \$8.6 million from future General Obligation bonds. Likewise, 80 percent (\$21.8 million) of the construction cost of widening and improving Bailey Road from Veterans Drive to FM 1128 will be covered by federal funds via the TIP. City bond funds will cover the other 20 percent, along with other City funds for related drainage improvements. Nearly \$4 million in TIP funds will also go toward County Road 94 improvements.

Other key funding streams for the streets portion of the 2014-2018 CIP included future General Obligation bonds (\$49.25 million, or 31 percent), general revenue (\$950,316, or 0.6 percent), and Certificates of Obligation (\$700,000, or 0.4 percent) – plus another 26 percent (\$42.19 million) for which funding sources are still to be determined.

CIP-funded projects will involve replacement of failed pavement on certain existing streets, extensions of other roads, and widening and reconstruction of some major streets to improve mobility and safety and reduce traffic congestion. Along with the McHard and Bailey Road projects noted above, other major projects include:

- Max Road.
- Fite Road.
- Hughes Ranch Road.
- CR 59 expansion.
- Mykawa Road widening from Beltway 8 to FM 518.
- Old Alvin Road widening from Plum Street to McHard Road.
- Old Alvin rehabilitation from McHard to Knapp.

Several other projects – reconstruction of Grand Boulevard, and Hughes Ranch Road expansion from Cullen to Stone – were identified in the CIP as needs although funding sources are still to be determined.

The CIP transportation portion also funded preliminary engineering on future projects yet to be identified so that more precise project scopes and estimated construction costs can be included in the next City bond referendum eventually put before Pearland voters.

At the end of this plan section is supplemental discussion of an extensive pavement management assessment effort completed by the Public Works Department in Spring 2015. The resulting report and City Council presentation reaffirmed that it is in the City’s best interest to invest further in existing infrastructure before it reaches a poor condition. A more strategic, life-cycle approach to infrastructure maintenance will enable the City to reap the benefits from lengthening the useful life of physical assets and reducing their total cost to the City over time.

Regarding pavement rehabilitation work, the City’s 2013-14 annual budget highlighted a partnership with Brazoria County Precinct 3 through which the City furnishes materials and flag personnel while the County provides equipment and operators. This intergovernmental approach enables the City to complete these projects at about 40 percent less than if privately contracted. Furthermore, the City pays for both the asphalt street improvements plus separate sidewalk rehabilitation work with dollars recovered from mobility projects done in conjunction with TxDOT, from which some City contributions were refunded as the projects were completed under budget. The Public Works Department budget also included \$300,000 to assess street and sidewalk conditions for future rehabilitation phases.

Additionally, the 2013-14 annual City budget kicked off a multi-year initiative to fund upgraded traffic signals and equipment along FM 518/Broadway and various other locations. This was intended to improve traffic circulation and alleviate delays through this specific aspect of traffic management, which will also improve intersection aesthetics. The 2014-18 CIP also included funding for signal installation at currently unsignalized intersections, to improve mobility and safety. Along with the City’s General Fund budget, Community Development Block Grant funds and dollars from the Traffic Impact Improvement Fund (a special revenue fund from pro rata fees paid by private development) will help to pay for the traffic signal work.





**STRATEGIC PRIORITY 3: SIDEWALK NETWORK UPGRADES**

While SH 288 congestion was highlighted as a top concern of Pearland residents under Strategic Priority 1 above, not far behind during this comprehensive planning process was repeated mention of needed sidewalk improvements, especially in and around neighborhoods, to encourage walking and make it a safer and more enjoyable experience. The City continues to devote funds, through its annual budgeting, for ongoing repair and replacement of damaged and hazardous sidewalks, including \$437,000 allotted in 2013-14. In the meantime, the Public Works Department is assessing the extent and estimated cost of addressing all such sidewalk upgrades comprehensively given the effects of both age and drought on so many sidewalk segments. This may lead to a stepped-up, multi-year effort, using either debt mechanisms or a “pay as you go” approach through further General Fund allocations.

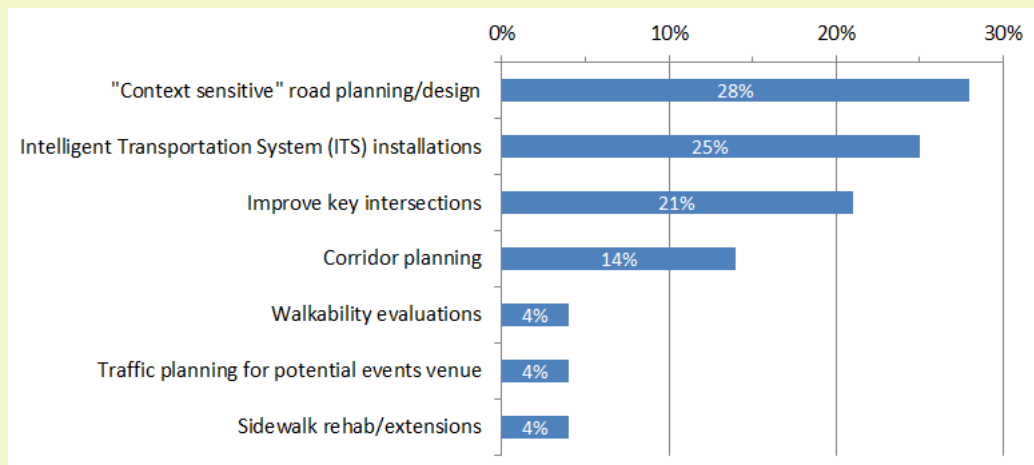
Additionally, the City’s 2014-18 CIP included a multi-year Sidewalk Installation initiative, with projects already prioritized, in part, through a Safe Routes to Schools (SRTS) study. This also addresses pedestrian needs in areas where Community Development Block Grant (CDBG) funds cannot be used, and could help to reduce driving in favor of walking. Direct project

funding that previously came through the federal SRTS program now flows through the broader federal Transportation Alternatives Program (TAP). These funds will be allocated through the regional TIP administered by H-GAC, and some funds were also distributed through a statewide call for projects by TxDOT.

Another CIP project anticipated the possibility of devoting \$1 million toward sidewalk improvements in the area between Houston Street and Grand Avenue, from FM 518/Broadway to Orange Street, in furtherance of Old Townsite Master Plan implementation. Given that Old Town currently has no sidewalks, and adding sidewalks to current conditions would require additional street right of way, this initiative will enclose existing roadside ditches so sidewalks may be installed above them.

Ongoing Trail Master Plan implementation provides further justification for sidewalk system extensions and upgrades across the community as this 2007 plan highlighted the role of local sidewalks in providing access to and filling gaps in the ultimate trail network.

In an informal polling exercise during a Comprehensive Plan Advisory Committee meeting, committee members were asked, “The most important near-term action items from this Comprehensive Plan related to Mobility should be [with the opportunity to select three]?” The resulting distribution of responses was:





## OTHER ACTION ITEMS

### ACTION: CONTEXT-SENSITIVE ROADWAY DESIGN

At the time of this Comprehensive Plan, the City was already exploring flexible design approaches to new and improved roadways to accommodate varying needs and situations. Pearland was already a leader among communities in the Houston area by incorporating a roundabout into the design of the Pearland Parkway-McHard Road interface. The need for greater flexibility and consideration of design alternatives is consistent with a nationwide movement toward "context-sensitive" roadway planning and design. In some cases this could lead to a "super street" cross section in which efficient flow of high-volume vehicular traffic is the primary focus of roadway design. Elsewhere, a "complete street" approach could be more appropriate given the need to accommodate bicycle, pedestrian and/or transit vehicle activity along with automobile traffic. Along with consideration of how various travel modes are incorporated into a corridor, another emphasis of context-sensitive design is to match roadway design (and cross section transitions) with the existing or intended development character of the area the roadway will serve and traverse, whether primarily an Urban, Suburban or Rural character area.

As in the Pearland Parkway scenario, this can also have implications for how traffic flows and turning movements are best handled where major thoroughfares meet – plus where lesser streets such as collectors intersect with busy arterials – in terms of traditional signalization and turning lane layouts relative to other potential configurations. Another

significant design consideration, which can and should vary depending on the specific corridor context, is whether bicycle circulation should be handled on-street with bike lanes, or if a wider off-street solution would be safer, allow for use by both cyclists and pedestrians, and also enhance corridor aesthetics through attractive streetscape design. Given these options, another topic already under discussion in Pearland during this planning effort was whether a right-of-way width of more than the current 120 feet for major thoroughfares may be needed (also given the need in Pearland to accommodate drainage improvements as part of many road projects). The reality, however, is that a wider cross section for major thoroughfares could be difficult given the extent of rights-of-way already dedicated to the City at the 120-foot standard through previous platting. After-the-fact acquisition of additional right-of-way width could be costly and/or disruptive in various locations. Wider rights-of-way going forward could also affect the cost and design of newer land development projects.

Nonetheless, a context-sensitive design approach allows for such discussions and exploration of alternatives early in a roadway planning and design process, well before definitive engineering and financial decisions must be made. As promoted by the Federal Highway Administration and the Institute of Transportation Engineers (ITE), context-sensitive design is a way of planning and building a transportation system that balances the many needs of diverse stakeholders and offers flexibility in the application of design controls, guidelines and criteria, resulting in facilities that are safe and effective for all users regardless of the mode of travel they choose. The basic principles of context-sensitive solutions, as highlighted in ITE and numerous other transportation industry publications, include:

- Balance safety, mobility, community and environmental goals in all projects;
- Involve the public and stakeholders early and continuously throughout the planning and project development process;
- Use an interdisciplinary team tailored to project needs;
- Address all modes of travel;
- Apply flexibility inherent in design standards; and,
- Incorporate aesthetics as an integral part of good design.

Another intended outcome is to help specific mobility projects move from design to construction faster and with less objection by applying a design and stakeholder involvement process that ensures that the project elements respond to area-specific transportation needs as well as overall community values. This typically requires adjustments in a City's project development process, along with potential amendments to the Thoroughfare Plan map and tools used to implement the plan, such as engineering design criteria and associated street standards in the City's land development regulations.

A context-sensitive planning approach may also require reconsideration of typical arterial spacing assumptions. For example, arterials spaced as far as one mile apart may carry the anticipated future traffic volumes but will likely require six lanes, which may be inappropriate for some contexts. Closer spacing of arterials could carry the same volume of traffic but reduce the number of lanes necessary. Likewise, collectors spaced closer together (e.g., one-eighth mile) result in lesser block lengths and promote greater pedestrian and bicycling activity. Also, local streets should connect as frequently as practical to the collector network to keep block lengths short and to promote connectivity throughout the street system.

In general, context-sensitive solutions are focused on streets that play the most significant roles in the local transportation network and that offer the greatest multi-modal opportunities – arterials and collectors. Primary mobility routes or freeways, such as SH 288, are generally intended to move very high volumes of high-speed traffic through the area, providing connections to the larger region. These facilities should be the focus of their own unique planning and design process. Similarly, local or residential streets are generally not the focus of context-sensitive design, although they generally should be designed to accommodate bicycles and pedestrians and should be interconnected to one another and into the larger transportation network.

### **ACTION: STREET CONNECTIVITY INDEX**

To promote a more interconnected local street system within and between new developments, which also helps to relieve some traffic demands on the major thoroughfare network by removing very localized trips, the City should consider incorporating a street

connectivity index into its subdivision regulations as adopted by various other Texas and U.S. cities. In UDC Section 3.2.6.2, Adequacy of Streets and Thoroughfares, the regulations currently include a broad statement of "General Adequacy Policy" for subdivision street layouts in subsection (b):

*Every subdivision shall be served by improved streets and thoroughfares adequate to accommodate the vehicular, bicycle and pedestrian traffic to be generated by the development. Proposed streets shall provide a safe, convenient and functional system for traffic circulation; shall be properly related to the City's Thoroughfare Plan, road classification system, Comprehensive Plan and any amendments thereto; and shall be appropriate for the particular traffic characteristics of each development.*

Along with such general statements of policy, a connectivity index can be used to quantify how well a proposed (or existing) roadway network connects origins and destinations for all travel modes. Indices can be measured separately for motorized and non-motorized travel, taking into account non-motorized "shortcuts," such as paths that connect cul-de-sacs (as already addressed in subsection (y), Pedestrian Connectivity, within Section 3.2.6.4.), and barriers such as highways and streets that lack sidewalks. Several different index methods can be used:

- The number of roadway "links" divided by the number of roadway "nodes."<sup>8</sup> Links are the street segments between intersections, while nodes are the intersections themselves. Cul-de-sac heads count the same as any other link end point. A higher index means that travelers have greater route choice, providing more direct connections between any two locations.
- The ratio of the number of intersections divided by the number of intersections plus dead-ends. The result is expressed on a scale from zero to 1.0, with a ratio over 0.75 being desirable.<sup>9</sup>
- The number of surface street intersections within a given area, such as a square mile. The more intersections, the greater the degree of connectivity.

<sup>8</sup> Reid Ewing, *Best Development Practices: Doing the Right Thing and Making Money at the Same Time*, Planners Press (www.planning.org), 1996.

<sup>9</sup> U.S. Environmental Protection Agency, *Smart Growth Index (SGI) Model* (www.epa.gov/smartgrowth/topics/sgipilot.htm), 2002. (www.epa.gov/smartgrowth/pdf/4\_Indicator\_Dictionary\_026.pdf)



Unique local factors, such as a large school and/or park “superblock” within a residential area, can affect the calculation results. Therefore, it is important to use professional judgment in addition to quantitative measurements when evaluating street system connectivity.<sup>10</sup>

#### **ACTION: PEDESTRIAN/BICYCLE ACCOMMODATION ON COMMERCIAL SITES**

The City’s UDC, in Chapter 4 on Site Development, already includes typical and sound provisions to ensure consideration of non-vehicular circulation and safety in site planning and design. This includes:

- A general statement regarding the “provision of a safe and efficient vehicular and pedestrian circulation system” in the criteria for site plan review and approval. [Section 4.1.1.3.(c)(3)]
- Required incorporation of pedestrian lanes in the design of off-street parking areas for more than 100 vehicles, such that “separate, marked pedestrian walkways [will] enable pedestrians to safely transit the parking area with minimum hazard.” Such walkways must have a clear width of at least four feet, exclusive of any vehicle overhang where head-in parking adjoins a walkway. [Section 4.2.1.3.(l)]
- Required design of landscaping within the interior of parking areas “in such a manner that it will assist in defining ... pedestrian paths,” among other objectives from effective integration of landscaping and parking lot design. [Section 4.2.2.4.(e)]

A next step would be to make the UDC language more explicit as to necessary accommodation of non-vehicular movement at all stages, from first

accessing a commercial site at its edges (whether from an adjacent street, sidewalk, trail or property), then traversing parking areas safely, and providing direct and convenient access to building entrances. The closest example of this currently is in the zoning portion of the UDC, in Section 2.4.4.1. regarding the potential establishment of Residential Retail Nodes (which are fairly limited in scope within the context of the overall non-residential zoning regulations). Among the considerations for such nodes, subsection (l)(2) cites the “existence or provision of pedestrian access, including but not limited to walkways, bikeways, trails, and traffic controls, to promote safe pedestrian friendly access and environment.” Chapter 4 also could call out on-site circulation of bicycles more specifically as it currently refers only to “pedestrian” needs.



**H-E-B example in Central Texas with a direct path to entrance through parking area**

Other possibilities include requiring dedicated bike parking areas near building entrances, and designated pedestrian pathways to adjacent developments and/or transit stops. These commercial site design considerations are especially important in close proximity to residential neighborhoods. Explicit requirements for bicycle parking are currently included in the provisions of the Corridor Overlay District (COD), in Section 2.4.5.1.(f). Through the overlay, bicycle parking is an added site development requirement where COD overlaps the underlying Office and Professional, Neighborhood Service, Business Park-288, General Business, and General Commercial base zoning districts. In these instances, the required number of bicycle parking

<sup>10</sup> Victoria Transport Policy Institute, Roadway Connectivity: Creating More Connected Roadway and Pathway Networks, TDM Encyclopedia, 2012. (<http://www.vtpi.org/tdm/tdm116.htm>)



spaces must be at least five percent of the number of required vehicle parking spaces.

## Mobility Tools

The highway and roadway networks are the most visible components of the transportation system and are used by private, commercial and public transportation vehicles. A comprehensive transportation system not only supports efficient vehicular circulation within the region and local areas but also advances community goals such as a friendly environment for bicycles, pedestrians and public transit; enhanced safety; and a higher level of streetscape design. While the Pearland street network has historically been developed with a focus on automobile mobility, there is a clear desire going

forward to balance transportation needs with quality of life considerations while also providing practical choices among all transportation options.

### AVAILABLE MUNICIPAL TOOLS

As a home rule municipality, the City of Pearland has various authorities, methods and partnership opportunities for advancing its mobility priorities and accomplishing needed improvements. The City also remains active in various forums and processes to advocate for its “fair share” of available transportation funding. Summarized in **Table 3.3, *Tools for Advancing Mobility Objectives***, are key mechanisms through which Pearland is already pursuing its mobility-related objectives. These tools are shown in five categories that represent the main ways that comprehensive plans are implemented:

**TABLE 3.3,** Tools for Advancing Mobility Objectives

TOOL	PEARLAND EXAMPLES
<b>Overall Framework for Mobility System Development</b>	
Long-Range Planning	<ul style="list-style-type: none"> <li>• Comprehensive Plan               <ul style="list-style-type: none"> <li>» Thoroughfare Plan</li> <li>» Land use-transportation coordination</li> </ul> </li> </ul>
Strategic Planning	<ul style="list-style-type: none"> <li>• Pearland 20/20 Strategic Plan               <ul style="list-style-type: none"> <li>» High-impact mobility projects</li> </ul> </li> </ul>
<b>Capital Projects</b>	
Multi-Year Programming and Budgeting	<ul style="list-style-type: none"> <li>• Capital Improvements Plan (CIP)               <ul style="list-style-type: none"> <li>» Complete Street design approaches</li> </ul> </li> </ul>
<b>Policies and Programs</b>	
Municipal Policies	<ul style="list-style-type: none"> <li>• Engineering design criteria</li> <li>• Developer pro rata contributions for improvements based on traffic impact analyses</li> </ul>
Special Initiatives	<ul style="list-style-type: none"> <li>• Safe Routes to School</li> <li>• Railroad Quiet Zones</li> <li>• Intelligent Transportation System (ITS) technology, signalization upgrades</li> <li>• Sidewalk repair/replacement</li> <li>• Access management</li> <li>• Traffic law enforcement (City Code Chapter 29)</li> </ul>
External Funding Opportunities	<ul style="list-style-type: none"> <li>• Direct appropriations</li> <li>• Grants</li> <li>• Community Development Block Grant (CDBG)</li> </ul>

**TABLE 3.3,** Tools for Advancing Mobility Objectives

TOOL	PEARLAND EXAMPLES
Special Districts	<ul style="list-style-type: none"> <li>• Municipal Management Districts</li> <li>• Tax Increment Reinvestment Zones (TIRZ)</li> </ul>
<b>Regulations and Standards</b>	
Land Development Regulations	<ul style="list-style-type: none"> <li>• Unified Development Code (UDC)               <ul style="list-style-type: none"> <li>» Street/sidewalk design and connectivity provisions</li> <li>» Sight distance and visibility provisions</li> <li>» Access management provisions</li> <li>» Traffic impact analysis provisions</li> </ul> </li> <li>• Thoroughfare Plan implementation via required dedications and improvements</li> </ul>
<b>Partnerships and Coordination</b>	
Public/Public	<ul style="list-style-type: none"> <li>• Multi-jurisdiction planning (subregional)</li> <li>• Intergovernmental and interagency agreements</li> <li>• Pearland Economic Development Corporation</li> <li>• Houston-Galveston Area Council               <ul style="list-style-type: none"> <li>» Regional Transportation Plan (RTP)</li> <li>» Transportation Improvement Program (TIP)</li> </ul> </li> <li>• Texas Department of Transportation (TxDOT)</li> <li>• Counties and Commissioner precincts</li> <li>• Toll Road Authorities (Harris, Fort Bend, Brazoria)</li> <li>• School districts (bus routing/operations, campus area traffic management and safety)</li> <li>• Metropolitan Transit Authority of Harris County (METRO)</li> <li>• Bay Area Houston Transportation Partnership (BayTran)</li> </ul>
Public/Private	<ul style="list-style-type: none"> <li>• Development agreements</li> <li>• Land development community</li> <li>• Employers/institutions (trip-reduction measures)</li> <li>• Railroad companies (crossing safety, quiet zones)</li> <li>• Advocacy and resource organizations               <ul style="list-style-type: none"> <li>» Pearland Chamber of Commerce</li> <li>» Greater 288 Partnership</li> <li>» Biking clubs and associations</li> </ul> </li> </ul>
<b>Targeted Planning</b>	
Special-Area Planning	<ul style="list-style-type: none"> <li>• Corridor plans</li> </ul>
City Master Plans	<ul style="list-style-type: none"> <li>• Traffic Management (and Travel Demand Model)               <ul style="list-style-type: none"> <li>» Targeted corridor and intersection improvements</li> </ul> </li> <li>• Trail Master Plan</li> </ul>

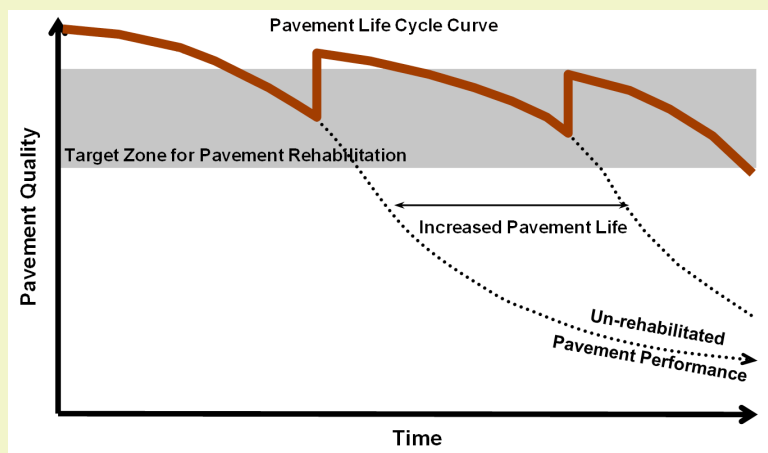
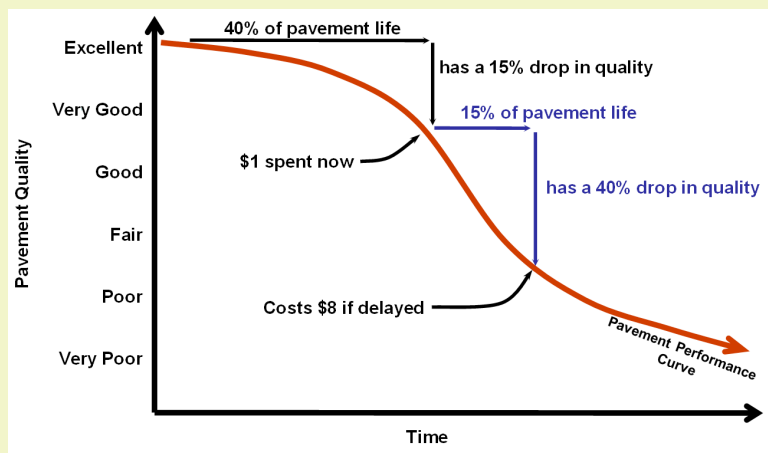
1. Capital projects.
2. Policies and programs.
3. Regulation and standards.
4. Partnerships and coordination.
5. More targeted planning (especially as required to qualify for external funding opportunities).

Given its size and the resulting level of sophistication of its municipal government, Pearland benefits from activities that are done here routinely relative

to smaller cities with lesser means and capabilities – and compared to some larger cities with limited will or support to take certain actions. Along with the strategic priorities and other actions outlined in this plan section, it is important to capture in the Comprehensive Plan those ongoing functions of City government, such as those highlighted in Table 3.3, that will also help to attain the vision and goals within this plan.

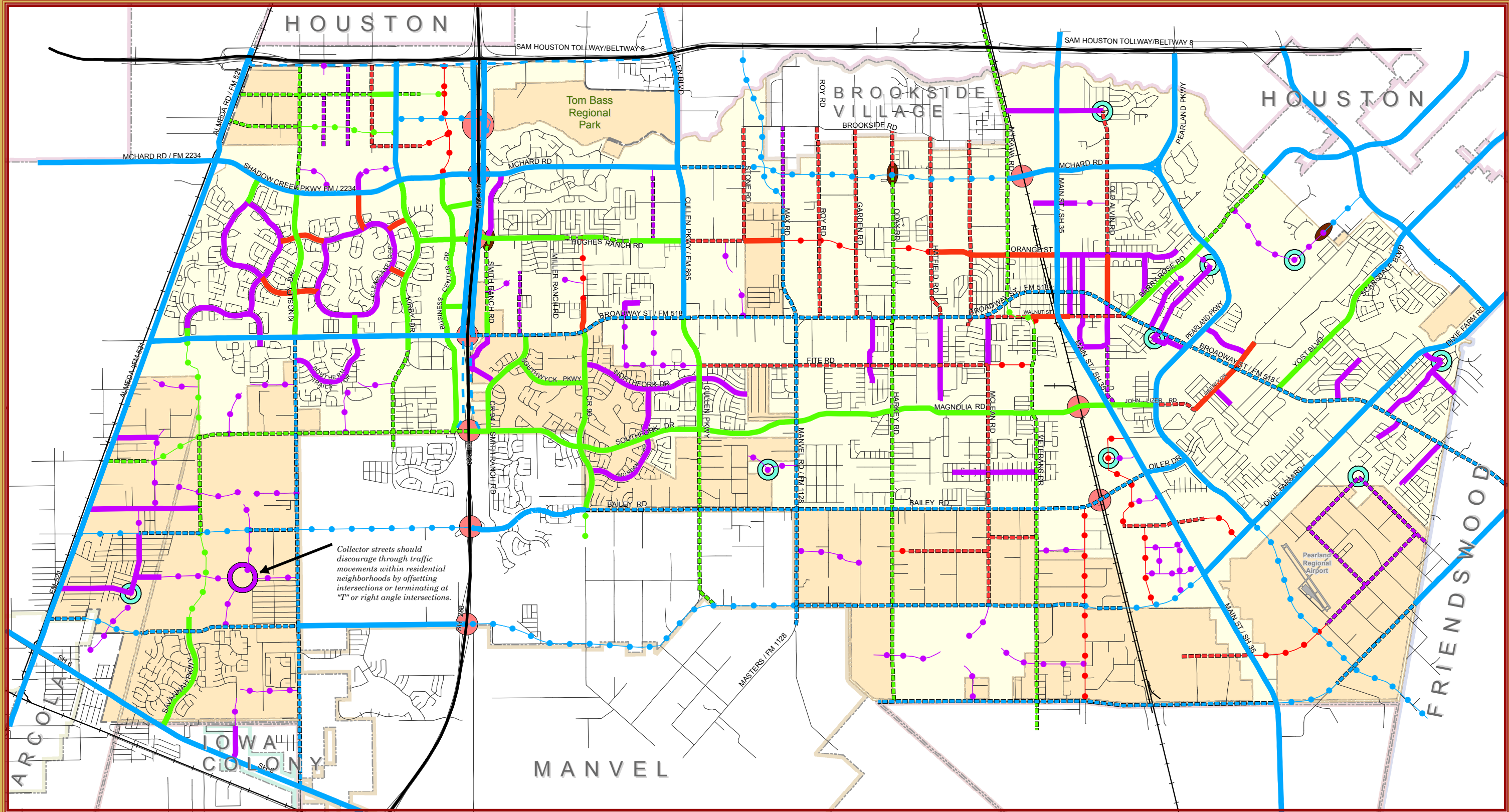
### Better Street Maintenance Through an Infrastructure Life-Cycle Approach

In 2014 the Public Works Department engaged an infrastructure management consultant to assist in the development of a Rights of Way (ROW) Assessment that would provide the City with a strategic approach for effective maintenance of City infrastructure. This was accomplished through an automated data collection process that identified and spatially located City assets using GPS and GIS technology. The data collected from the ROW was analyzed and a condition rating was assigned to each asset. The condition rating was used to determine the remaining usable life of each asset which also determined the methodology by which those assets should be maintained to ensure that their maximum usable life is realized. This work was presented to the City Council in



2015 and was well received. The ROW Assessment provided a comprehensive picture of the City’s infrastructure assets and served as the impetus to further develop and expand better infrastructure maintenance programs in the Public Works Department. Additional information is contained in the final report, City of Pearland, Texas Pavement Management Analysis Report (March 2015).

The first chart illustrates the value of infrastructure from the life-cycle costing perspective, focusing on street pavement in this case. The chart also validates that it is prudent for the City to invest further in existing infrastructure before it reaches a poor condition. Strategic investments early in the life of the asset will lengthen its useful life and cost less over time. The second chart illustrates the benefits of strategic infrastructure investment and also compares the life cycle of properly versus improperly maintained infrastructure.



# CITY OF PEARLAND THOROUGHFARE PLAN

Plan Approved: 24 MAR 2014  
(Ord 943-21)

- 120' Minimum ROW**
- Major Thoroughfares - Sufficient Width
  - Major Thoroughfares - To Be Widened
  - Major Thoroughfares - To Be Acquired
  - Major Thoroughfares - Proposed Frontage Road
  - Freeway

- 100' Minimum ROW**
- Secondary Thoroughfares - Sufficient Width
  - Secondary Thoroughfares - To Be Widened
  - Secondary Thoroughfares - To Be Acquired

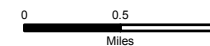
- 80' Minimum ROW**
- Major Collector Streets - Sufficient Width
  - Major Collector Streets - To Be Widened
  - Major Collector Streets - To Be Acquired

- 60' Minimum ROW**
- Minor Collector Streets - Sufficient Width
  - Minor Collector Streets - To Be Widened
  - Minor Collector Streets - To Be Acquired

- Proposed Grade Separation
- 15:1 R.O.W. Transition
- Collector Streets
- Street intersect at a right angle as part of a T or 4-way intersection
- Pearland City Limits
- Pearland ETJ



1:63,360 or 1 inch = 1 miles



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

MAP PREPARED: MAY 2014  
CITY OF PEARLAND GIS DEPARTMENT