



1 According to the Houston-Galveston Area Council (H-GAC), the regional population is  
2 expected to increase by approximately 3 million by 2035. The 2010 population in the study  
3 area is 61,372 and is estimated to increase 25 percent to 76,866 by 2035. Harris County is  
4 projected to increase in population by 41% and Fort Bend County by 60% over the same  
5 period.

6 The 2010 employment in the corridor is 100,049 and is projected to increase 17 percent to  
7 116,977 by 2035. Over the same period employment is projected to increase by 33 percent  
8 in the City of Houston, 39 percent in Harris County, and 89 percent in Fort Bend County.

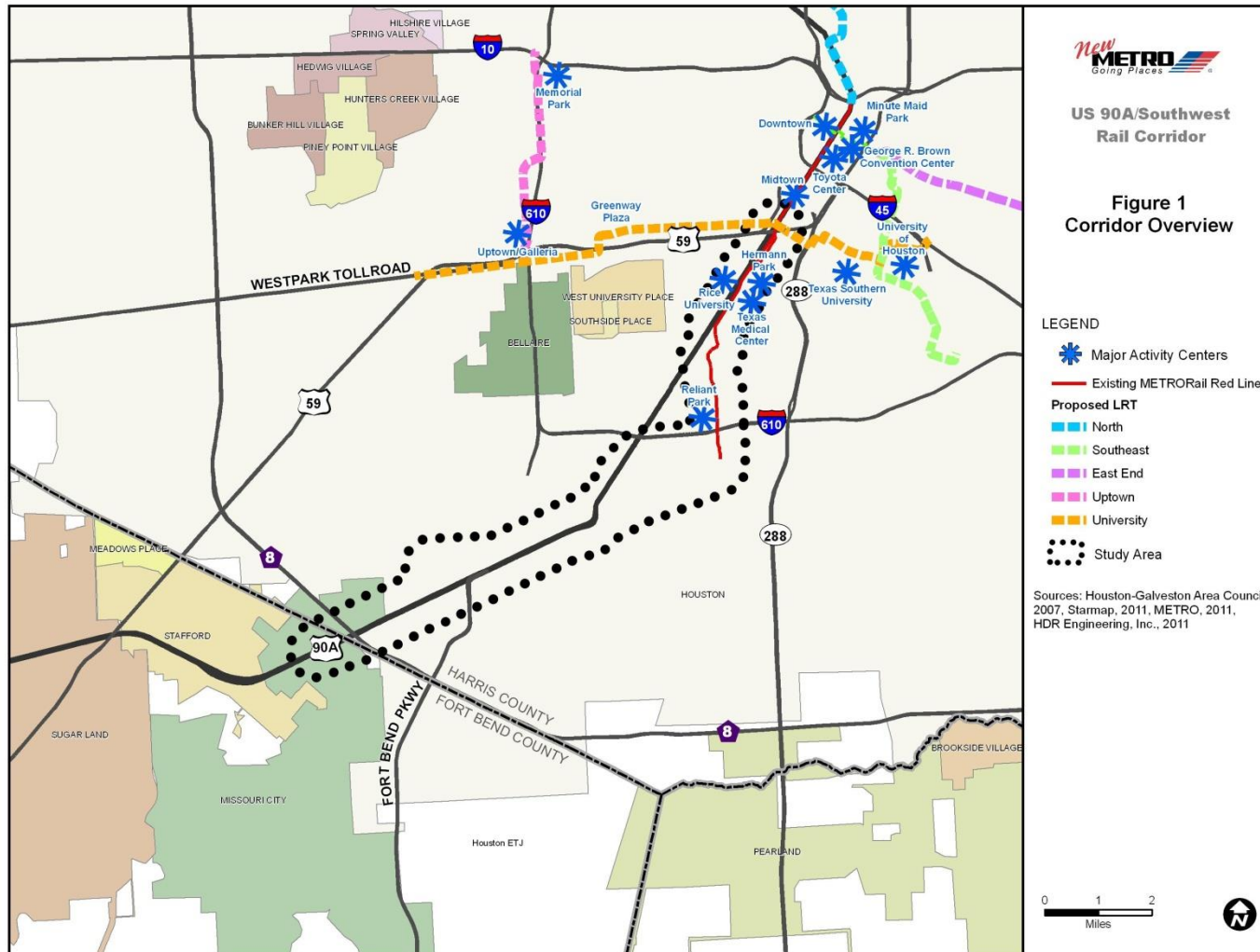
9 Available land, quality schools, and supportive development policies have made Fort Bend  
10 County an attractive location for growth. Improved highway access via Beltway 8 and SH  
11 99/Grand Parkway have opened up previously inaccessible property for development.  
12 These roadways have improved connectivity to the northwest and southeast; however,  
13 direct access into the employment centers such as the TMC and downtown Houston is  
14 limited to US 59 or US 90A. The existing arterial network is substandard and discontinuous,  
15 offering few options to reach the concentration of jobs and activities in the center of  
16 Houston.

17 The inadequate roadway network limits traffic capacity on existing streets and highways and  
18 has resulted in increased travel times, delays, and air pollution. Projected development is  
19 expected to generate increased travel demand, aggravating the situation. According to  
20 H-GAC's 2035 Regional Transportation Plan (RTP), vehicle miles traveled (VMTs), which  
21 measures automobile travel, is expected to increase 72 percent by 2035.

22 Based on 2009 Texas Department of Transportation (TxDOT) traffic volumes, US 90A  
23 carries approximately 45,000 vehicles per day west of Beltway 8 and up to 64,000 vehicles  
24 per day near South Post Oak Boulevard, which makes the roadway moderately congested  
25 during peak periods (V/C ratio of 0.67). H-GAC's regional traffic model projects the traffic  
26 volume on US 90A to increase by 86 percent by 2035, which would lead to severe  
27 congestion (V/C ratio of 1.25). As the daily trips exceed the capacity of the highway, traffic  
28 will likely divert onto the thoroughfare network creating additional congestion. As a result,  
29 the increased congestion of the thoroughfare network will also affect bus service, causing  
30 delays and unreliable transit travel times.

31 The strongest travel patterns for the US 90A/Southwest Rail corridor study area currently  
32 exist to and from the TMC, with 24,174 daily trips, approximately 33 percent of the total work  
33 trips. This relationship is expected to continue and daily trips are projected to increase to  
34 31,855 by 2035 and increase of 32 percent. H-GAC also estimates that trips along US 90A  
35 to all major employment centers, such as downtown Houston, Uptown/Galleria, and  
36 Greenway Plaza in Houston will increase approximately 37 percent in that same time period.

Figure 1-1: Corridor Overview



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1 The Texas Transportation Institute (TTI) ranks major metropolitan areas with respect to the level  
2 of traffic congestion occurring on the highways. This ranking is reflected in a Travel Time Index.  
3 A Travel Time Index of 1.35 indicates a 20-minute free-flow trip takes 27 minutes in the peak.  
4 TTI calculations show that Houston had a 2009 Travel Time Index of 1.25 (*The 2010 Urban*  
5 *Mobility Report*, December 2010). The 2009 congestion levels on Houston’s roadways are  
6 above the low of 1.18 experienced in 1982. Person hours of delay in Houston has also  
7 increased by 141 percent (or 8 percent annually) between 1982 and 2009. **Table 1-2**  
8 summarizes the mobility measures for Houston.

9 **Table 1-2: TTI Mobility Measures for Houston**

	1982	1995	2005	2009
Travel Time Index	1.18	1.20	1.33	1.25
Person-Hours of Delay	24	31	55	58

10 Source: TTI, 2010

11 The anticipated growth in population and employment by 2035 is expected to increase daily  
12 vehicle miles of travel (VMT) by 72 percent and vehicle hours of travel (VHT) by 133 percent  
13 (see **Table 1-3**). These increases will intensify the congestion and air quality problems (*2035*  
14 *RTP*, 2011).

15 **Table 1-3: Growth in VMT and VHT for Houston**

	2010	2035
System VMT (in millions)	160	275
System VHT (in millions)	4.2	9.8

16 Source: H-GAC, 2011

17 The off-peak, uncongested travel time from Missouri City to the TMC is 19 minutes. Current  
18 peak hour travel time is approximately 24 minutes, a 25 percent increase. The regional highway  
19 model projects the 2019 peak period travel time in the corridor to be approximately 30 minutes,  
20 a 56 percent difference. The peak period travel time is projected to increase to 32.63 minutes  
21 by 2035, a 71 percent increase over the off-peak travel time of 19 minutes.

### 22 **1.3 Transit Service**

23 Existing Metropolitan Transit Authority of Harris County (METRO) bus service within the US  
24 90A/Southwest Rail corridor includes seven bus routes directly serving the corridor (**Table 1-4**).  
25 Bus routes in the corridor operate in mixed-flow traffic. As a result, bus travel times and  
26 reliability are influenced by roadway congestion, which is anticipated to increase. According to  
27 current bus service schedules, peak period bus travel times in the corridor average 22 percent  
28 longer than off-peak. The peak period bus speed averages 16.6 mph compared to the average  
29 off-peak speed of 13.9 mph. The 170 Missouri City route has no variation between peak and  
30 off-peak travel speeds because it is an express route that operates only in the peak periods.

31 METRO provides light rail service at the northern terminus of the corridor with the existing  
32 METRORail Red Line.

1 Table 1-4: Existing Bus Operations and Ridership

Route	Weekday Boardings		Travel times		Increase during peak periods
	Total	Study Area	Peak Period	Off-peak	
14 Hiram Clarke	3,370	1,372	25	20	25%
18 Kirby Limited	948	311	22	14	57%
33 Post Oak Crosstown	6,652	1,790	10	8	20%
47 Hillcroft Crosstown	1,372	253	12	11	9%
73 Belfort Crosstown	6,603	1,621	19	17	12%
163 Fondren Limited	7,803	2,360	15	12	25%
170 Missouri City	378	378	25	25	0%

2 Source: METRO, 2009

3 The 2035 RTP Update October 2010 includes \$87 billion worth of transportation system  
4 investments, including added capacity for roadway and transit projects. The only RTP projects  
5 in the corridor, aside from the US 90A rail, are new roadway extensions of Kirby Drive, Airport  
6 Boulevard, and Buffalo Speedway. Yet, according to the 2035 RTP, traffic congestion will  
7 continue to increase in the corridor because the projected funding for transportation projects fall  
8 short of the forecasted need for added capacity.

9 **1.4 Transportation Deficiencies**

10 The transportation system deficiencies in the US 90A/Southwest Rail corridor include the  
11 following:

- 12 • Heavy congestion on US 59, which serves a similar travel market as US 90A, limits its  
13 ability to carry projected traffic volumes. US 59 was reconstructed and widened to its  
14 ultimate width in 2004. It cannot be widened to increase capacity because of limited  
15 right-of-way and existing development patterns;
- 16 • The existing single, reversible, high occupancy vehicle (HOV) lane on US 59 cannot  
17 serve both inbound and outbound travel demand at the same time. Current percentage  
18 of inbound and outbound directional splits for the main lanes is 66 percent to 34 percent  
19 during the morning peak period, and 42 percent to 58 percent during the evening peak  
20 period (Texas Transportation Institute 2006);
- 21 • Anticipated population and employment growth is expected to intensify traffic congestion  
22 in the corridor;
- 23 • Lack of alternatives to single occupant vehicle (SOV) trips limits the ability to serve the  
24 growing demand to access major activity and employment centers in the region.

25 Existing deficiencies in the public transit system within the study area include:

- 26 • Street-running bus routes experience slow and unreliable bus speeds due to existing  
27 and projected traffic congestion;

- Lack of reliable high capacity transit service in the corridor to meet existing and projected demand;
- Need for better connectivity to the existing and planned METRORail system for access to major activity centers throughout the Houston area.

## 1.5 Project Purpose

The purpose of the proposed project is to improve mobility, accessibility, and system linkage between the major residential areas in the Missouri City and southwest Houston areas and major employment centers, such as downtown Houston and the TMC. The proposed transit improvement would provide a high capacity transit alternative with greater reliability to help reduce traffic congestion in the corridor and further the implementation of regional transit connectivity.

Public comments received during the scoping process expressed the need for a direct trip to the TMC without having to transfer. In addition to the request for direct service, communities along the corridor expressed the desire to be able to use the proposed service. The purpose of the project can be summarized as follows:

- Providing direct service from Missouri City to the TMC;
- Offering a travel time from Missouri City to the TMC that is competitive with peak period automobile travel time, which is currently 24 minutes and projected to be approximately 30 minutes in 2035;
- Providing a one-seat ride to the TMC without a transfer;
- Provide stations to serve communities along the corridor.

## 1.6 Project Need

The Houston metropolitan area is a severe nonattainment area for the 8-hour ground level ozone standard. This designation requires all transportation projects in the region to conform to a regional transportation plan that reduces auto emissions. Failure to be part of a conforming plan results in a lack of federal funds for that project. Traffic congestion degrades air quality by the stop and go action and increases mobile source emissions. Individual transit projects may not measurably reduce emissions for the region, but can help improve air quality in the corridor by increasing mobility without increasing auto congestion. Efficient and desirable transit service can help reduce the number of automobiles on the road and improve the flow of traffic, helping improve air quality. The proposed transit project would meet the following mobility needs:

- The inadequate, discontinuous roadway network limits traffic capacity on existing streets and highways and has resulted in increased travel times, delays, and air pollution.
- The peak period travel time from Missouri City to the TMC is projected to increase to from 24 minutes to 32.63 minutes by 2035, a 36 percent increase.
- Population in the corridor is projected to increase 25 percent; however, the population increase in Fort Bend County at the western terminus of the project is projected to grow by 60 percent.

- 1       • H-GAC's regional traffic model projects the traffic volume on US 90A to increase by 86  
2       percent by 2035, which would lead to severe congestion (V/C ratio of 1.25).  
3       • Current peak period bus travel times in the corridor average 22 percent longer than off-  
4       peak.

## 5    **1.7 Project Goals**

6    A series of goals have been identified to accomplish the purpose of the project. The following  
7    goals will help address the transportation challenges and opportunities in the US 90A/Southwest  
8    Rail corridor:

- 9       • Improving regional transit system connectivity between the US 90A/SWRC and the  
10       METRORail system to serve major activity centers and destinations;  
11       • Providing additional transit capacity in the US 90A/SWRC to accommodate projected  
12       growth;  
13       • Reducing existing and projected traffic congestion on freeways and thoroughfares within  
14       the corridor;  
15       • Improving air quality by getting cars off the road and reducing the stop and go flow of  
16       traffic congestion;  
17       • Meeting the needs of planned, high-density mixed-use development that will depend on  
18       future high capacity transit service;  
19       • Responding to corridor communities' expressed need for a direct trip to the TMC;  
20       • Providing access to communities along the corridor with stations between Missouri City  
21       and Fannin South.

22    Several alternatives will be examined to address these goals. While some goals may conflict  
23    with one another, the alternative that best accomplishes the intent of all the goals will be carried  
24    forward for detailed analysis.