

# IH 10 (KATY FWY)

## SL 8 (Sam Houston Tollway) to IH 610W (West Loop)

### Current Conditions

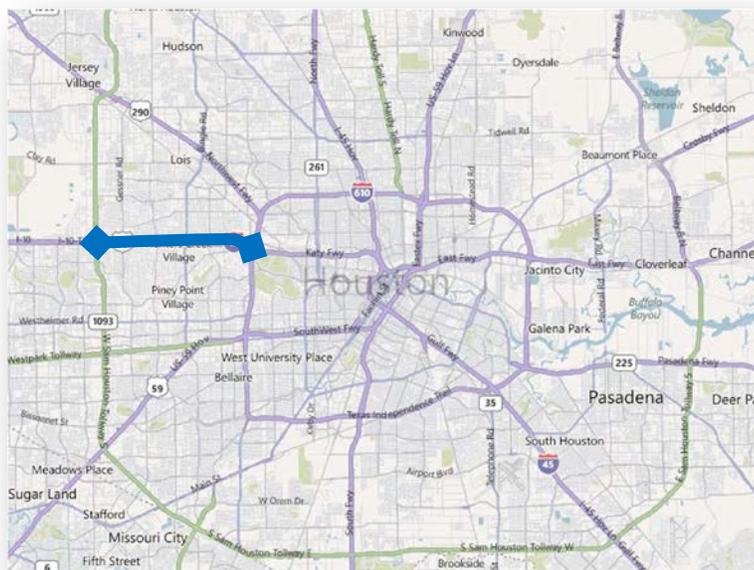
From IH 610 North to Beltway 8 (Sam Houston Tollway), IH 10 is an east-west freeway with five to six general purpose lanes and three to four lanes of continuous frontage roads in each direction. Four managed lanes (two each direction), known as the Katy Tollway, operate in the middle of the corridor. During peak hours, high occupancy vehicles (HOV) may utilize the Katy Tollway for free, while single occupancy vehicles (SOV) must pay a dynamically-priced toll rate which varies throughout the day based on traffic volume. During off-peak hours, the tollway is dynamically-priced for all vehicles regardless of occupancy. METRO and school buses are allowed to utilize the managed lanes at all times toll-free.

Traffic on IH 10 loosely follows a traditional inbound/morning and outbound/evening congestion pattern, though both directions experience significant slowdowns during the evening peak period.

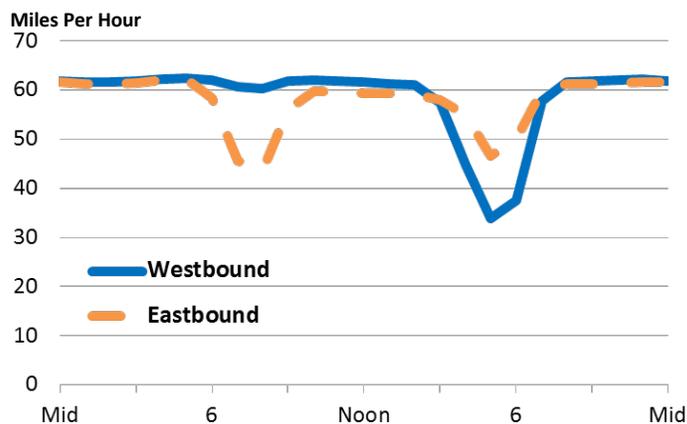
- Segment Length: 6.6 miles.
- Road Type: 14-lane divided freeway.
- Annual Hours of Delay: 2,178,000.
- Texas Congestion Index: 1.43.
- Commuter Stress Index: 1.60.

Intelligent Transportation Systems (ITS) infrastructure along this corridor includes:

- Travel time monitoring system covering the entire segment.
- Seven CCTV cameras to aid incident management, with two motion cameras.
- Three dynamic message signs.
- All-electronic tollway.



<b>2010 Rank: 22</b>	<b>2013 Rank 21</b>
<b>Annual Hrs of Delay/Mile:</b>	<b>329,000</b>
<b>Congestion Time:</b>	<b>4.8 Hours</b>
<b>Annual Cost of Delay:</b>	<b>\$64.8 Million</b>
<b>Average Daily Traffic:</b>	<b>297,000 Vehicles</b>



### Possible Congestion Causes

This segment of IH 10 serves as a primary route to and from major activity centers. Major activity centers to the east include downtown Houston, the Texas Medical Center, University of Houston, Texas Southern University, and the Uptown/Galleria area. Activity centers to the west include the Houston Energy Corridor, a master planned business district west of Beltway 8. This

freeway segment also serves pass-through traffic for motorists traveling east/west between Houston and San Antonio.

Since its reconstruction, the improved capacity of IH 10 has been offset by latent traffic demand from commuters in the northwest and southwest utilizing IH 10 via Beltway 8 as an alternative to the heavy congestion on US 290 and US 59. This trend has been exacerbated since construction began on US 290 in 2011.

Additional causes for congestion in this segment include:

- 84,000+ employees in the Energy Corridor.
- Rapid commercial and residential growth in Katy.
- Master planned community Cinco Ranch, population 18,000.

## **Projects Completed**

### *IH 10 Expansion*

The population in Greater Houston and Katy increased throughout the late 1990s. At this time, TxDOT decided that the corridor was in need of a capacity upgrade. Construction for the expansion began in 2004 and was completed in 2008. The project increased capacity and improved drainage and safety by adding retention ponds, pumping stations, enhanced shoulders, and message signs. Additional growth west of downtown Houston has occurred because of the increased capacity and access the upgraded corridor provides. As a result, more workers are able to access the central business district and other job centers from greater distances, potentially increasing congestion.

### *Katy Tollway*

As part of the IH 10 expansion, TxDOT and the Harris County Toll Road Authority installed managed lanes, known as the Katy Tollway, on both sides of the corridor running between IH 610 West and SH 6. Toll rates, indicated by signage along IH 10, are dynamic, adjusting according to the time of day (level of congestion), vehicle occupancy, and the number of axles on the toll-paying vehicle. This pricing

scheme, known as “congestion pricing”, equips drivers with the necessary information to determine whether paying a premium to access less crowded lanes on the freeway is “worth it.” The managed lanes serve over 20,000 vehicles and 36,800 transit passengers daily. The popularity of the managed lanes supported a change in the maximum toll, from \$4 to \$5, in 2012. In July of 2013 the toll was increased again, by up to \$2 in peak hours, to adjust for increased demand.

## **Projects in Progress**

### *Reconstruction of the IH 610, US 290, and IH 10 Interchange*

Due to its close proximity to IH 10, the reconstruction of the US 290/IH 610 interchange will directly impact traffic on IH 10. The project will construct direct connector ramps from US 290 to IH 10, allowing vehicles to bypass IH 610. Also part of this reconstruction will be a direct connector ramp from IH 610 to the managed lanes of IH 10. The first portion of the project has been awarded and construction is underway. The remaining portion is contracted with construction expected to begin in early 2014. With the typically heavy traffic volumes in this area, the project is expected to increase congestion on IH 10 near the West Loop due to road closures and detours over the next several years.

### *Roadway Widening east of IH 610 West*

The 3.4 mile section of IH 10 adjacent to this segment (east of IH 610 West) is in the construction phase, being widened between Washington Avenue and Taylor Street. While this portion of the road is not in the corridor, enhancements this adjacent section of IH 10 will allow for corridor throughput between downtown Houston and the Greater West part of the city, likely resulting in increased traffic demand on IH 10 in the future.

### *Corridor Transit Service*

METRO’s Northwest Transit Center is located on Old Katy Road, just east of North Post Oak Road



Northwest Transit Center

at the IH 610/IH 10 interchange. The location offers parking and serves as a transit hub for 16 local fixed route and park and ride routes.

West of Beltway 8, METRO also operates the Addicks, Kingsland, and Grand Parkway park-and-ride facilities. These facilities provide bus transit alternatives for commuters in west Houston and have a significant role to play in reducing congestion along IH 10. This is particularly true for the Addicks park-and-ride facility which is located near the Energy Corridor.

#### *Incident Clearance*

SAFEClear, the City of Houston's rapid clearance program, provides quick response and towing of crashed and disabled vehicles, reducing secondary crashes and congestion. More than 60 private contractor tow trucks rapidly respond to all incidents. Before 2010, approximately two-thirds of all incidents were detected by roving tow trucks and 90 percent were detected and cleared within 20 minutes by SAFEClear. However, effectiveness of this program was reduced in the summer of 2010 when city budget cuts caused a \$50 fee to be instituted for the previously free tows. Average incident clearance time (from tow authorization to clear) increased from 14 minutes in 2010 to 27 minutes in 2011.

TxDOT, METRO, and Harris County operate fewer than a dozen Motorist Assistance Program

(MAP) pick-up trucks as a free assistance program to provide minor aid to stranded motorists. The service also reduces traffic congestion and improves highway safety. In addition, a heavy tow truck contract allows quick removal of large trucks.

Houston TranStar traffic and emergency management center is the coordination hub for all incident management. TranStar is a consortium of four agencies: TxDOT, the City of Houston, METRO, and Harris County. Traffic incidents are detected, verified, and the public is notified through the ITS system. When an incident is verified, dispatch and response are coordinated amongst the agencies involved.

#### *Travel Options*

The Houston-Galveston Area Council's (H-GAC) Commute Solutions program funds, promotes, and provides administrative support to various commute alternative projects. The program provides public education to commuters and employers about available commuting options in the region and on the benefits of using alternative transportation modes. The Commute Solutions program also provides literature and public outreach on carpooling, vanpools, transit, guaranteed ride home, teleworking, alternate work schedules, and parking management.

#### *Shared Commuting*

NuRide is an online rideshare marketing program that provides ride matches and rewards users for recording their alternative commute trips (i.e., ridesharing, bus, rail, telecommute, walk, bike, and compressed work week). The H-GAC NuRide program is the nation's largest ridematching rewards program, with over 20,247 registered riders. Since its inception in June 2005, the program has resulted in 6.68 million fewer car trips preventing 77,118 tons of emissions.

NuRide reports 2.14 million public transportation trips, 4.29 million carpool and vanpool trips, 99,935 walking trips, and 169,994 biking trips.

METRO operates the STAR Vanpool program, ranked as the third largest vanpool program nationally by passenger trips and passenger miles in the 2012 American Public Transportation Association (APTA) Fact Book.

#### *Flextime*

Many employers offer flexible work schedules, with around 350 employers participating annually in the Flex in the City Program.

#### *Incentive Driven TDM Programs*

Many large companies in the Texas Medical Center, the Energy Corridor, and downtown subsidize all or part of their employees' vanpool or transit commuting costs.

Twenty-five companies are voluntarily participating in the Commute Champion Program enabling H-GAC to document emission reductions related to their commuter benefits. Additionally 38 companies and 17 local governments are participating in the Clean Air Champion Program in which they voluntarily provide information enabling H-GAC to document regional efforts to decrease emissions.

#### *Teleworking*

Approximately 2.9 percent of the trips recorded by the NuRide program are telecommutes.

#### *Guaranteed Ride Home (GRH) Programs*

The GRH program provides emergency rides home to transit and rideshare users. This type of program attempts to address one of the main concerns for transit users—the need for on-demand transit should an emergency occur. All users of METRO bus, STAR vanpool riders, TREK Express users, and Fort Bend County Transit users that have registered for the GRH program have access to three free rides home per calendar year.

#### *Houston Area Transit Service*

METRO provides local and express bus service via 97 routes, with approximately 233,068 average daily boardings (weekday – FY 2013). METRO also operates 32 park-and-ride routes with approximately 29,200 average daily



boardings (weekday – FY2012). METRO operates light rail transit along a 7.5-mile section serving downtown, the Texas Medical Center, and the Reliant Center with 37,650 average daily boardings (weekday – FY2013). METRO plans to add two new light rail lines (University and Uptown).

### **Planning Efforts to Date**

#### *Intersection Improvements*

In the western part of the corridor, TxDOT is planning to construct intersection improvements along IH 10 between SH 6 and Beltway 8. These improvements will allow more traffic to enter and exit IH 10, especially traffic from SH 6 and Beltway 8. The project is currently still in the design submittal phase.

#### *2011-2014 Transportation Improvement Program*

The most significant projects in the Houston-Galveston Area Council's Transportation Improvement Program (TIP) are the five new light rail lines for METRO. The TIP refers to the Uptown Line as a light rail line, contradicting other reports stating it will be a BRT service. This seems to imply that the long term intent for the line is to convert the right-of-way to light rail service. The Uptown Rail will run west of and parallel to the IH 610 West loop and connect US 59 to MERTO's Northwest Transit Center.

### *Greater West Houston Subregional Planning Initiative*

The Houston-Galveston Area Council is planning to conduct a study concerning multi-modal transportation along the area focusing on IH 10 between SH 99 and Beltway 8. The study will investigate different scenarios with land use and transportation options in the region and include all transportation modes rather than focusing on strictly automobiles. Stakeholders include the various government and district authorities involved in the region such as the City of Houston, METRO, TxDOT, and the Energy Corridor District.

The study will explore potential investments with short, medium, and long-range timelines. Quality of life and responsible development are key considerations for each alternative. The goal of this effort is provide recommendations for local and regional plans that will inform decisions about transportation in western Houston during the coming years.

### **Next Steps**

#### ***Mobility Improvements to Significant Parallel Streets***

This early action feasibility study could identify mobility improvements along major streets in the IH 10 corridor in order to create viable alternate routes. Mobility improvements resulting from such a study may include capacity increases (where possible) and operational treatments including active traffic management strategies such as signal re-timing, dynamic rerouting using improved surface streets, and traveler information.

#### ***Support for Aggressive Incident Management***

The Motorist Assistance Program has assisted with minor repairs and stalled vehicles for 20 years. SAFEClear, the City of Houston's rapid clearance program has been successful, since 2005, in reducing incident clearance times and improving safety. Crash reductions between 10 and 15 percent were reported for the first four years of the program. Recent funding cuts have

mandated that motorists have to pay for the tow, and the tows have been made optional. The number of tows has, therefore, been reduced by approximately 70 percent. Dedicated funding resources or a different operating strategy should be found for programs such as MAP and SAFEClear to advance incident management strategies.

#### ***Feasibility Study for Implementation of Active Traffic Management Strategies***

Improving the operation of the existing freeway allows the greatest return on the roadway investment. An active traffic management feasibility study could identify freeway locations that may benefit from operational treatments such as dynamic rerouting, dynamic traveler information, and variable speed limits.

#### ***Evaluation of Travel Option Strategies***

A feasibility study to examine potential benefits and implementation strategies for travel options in the corridor could prove beneficial. Travel option strategies include, but are not limited to, flex-time, carpooling, and employer sponsored vanpooling, transit, and parking incentives. Additionally, the study could include an assessment of current programs that offer such travel options to determine regional best practices and opportunities for coordination.