

IH 45 (GULF FWY)

IH 10 (Katy Fwy) to IH 610 S (South Loop)

Current Conditions

From IH 10 to IH 610 south, IH 45 is a 6- to 9-lane facility with three or four general purpose lanes in each direction and a reversible High Occupancy Vehicle (HOV) lane in the median south of US 59. The Gulf Freeway has a traditional commute pattern with heavier traffic and more slowdowns inbound during the morning rush and outbound during the evening rush hours, although both directions experience some congestion in the evening.

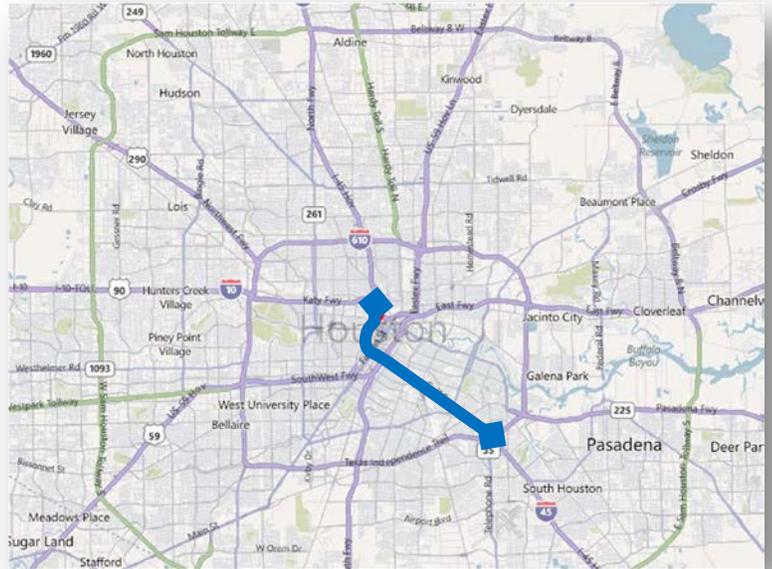
- Segment Length: 7.9 miles.
- Road Type: 6- to 9-lane freeway.
- Annual Hours of Delay: 3,287,000.
- Texas Congestion Index: 1.72.
- Commuter Stress Index: 1.96.

Intelligent Transportation Systems (ITS) improve freeway operations and increase motorist awareness; ITS infrastructure along this corridor includes:

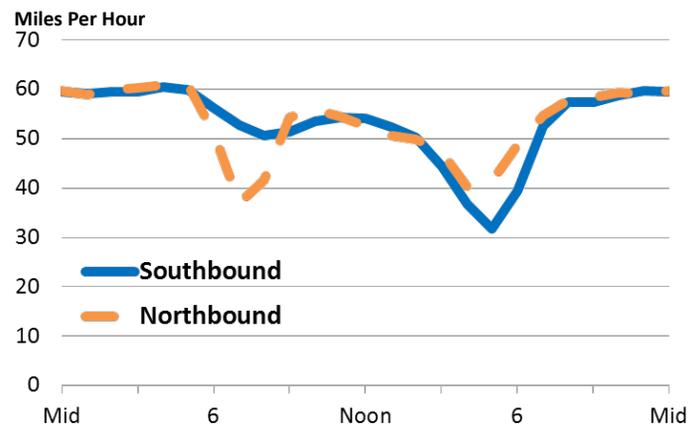
- Travel time monitoring system covering the entire segment.
- 12 CCTV cameras to aid incident management.
- One radar-based vehicle volume and speed detection location.
- Three dynamic message signs.
- 12 flow signals.

Possible Congestion Causes

This segment of the Gulf Freeway connects to downtown destinations and the University of Houston and serves as a through route for major activity centers including the Texas Medical Center, Port of Houston, and Texas Southern University to the south, and the Dallas-Fort Worth area, the Woodlands and the Greenspoint area to the north of the corridor. The interchange of IH 45, US 59, and SH 288 is a major choke point for several downtown



2010 Rank: 6	2013 Rank: 12
Annual Hrs of Delay/Mile: 416,000	
Congestion Time: 8 Hours	
Annual Cost of Delay: \$72.5 Million	
Average Daily Traffic: 194,000 Vehicles	



freeway segments, causing slowdowns and stop-and-go traffic.

Some other causes for congestion on this segment include:

- Older ramp design and lack of auxiliary lanes cause weaving near on- and off-ramp locations.
- Vertical and horizontal curves with design speeds less than 60 mph.

- Absence of frontage roads between IH 10 and US 59 results in many short trips using the freeway mainlanes.
- Left hand entry of southbound Allen Parkway on-ramp combined with southbound Houston Avenue on-ramp (right hand entry) in the same general area causes major weaving problems and violation of driver expectations.
- High travel demand due to the presence of major activity centers and other trip generators within and at either end of this corridor.

Projects in Progress or Completed

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 (approximately two-thirds of incidents were detected by the roving tow trucks and 90 percent were detected and cleared within 20 minutes by SAFEClear). However, effectiveness of this program was reduced in summer 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. It also reduces traffic congestion and improves highway safety.

A heavy tow truck contract allows quick removal of large trucks. There is a policy that does not hold TxDOT liable for damage to products that are removed from the roadway in such an event.

Houston TranStar traffic and emergency management center is the coordination hub for all incident management. Traffic incidents are detected, verified, and the public is notified

through its ITS system. Dispatch and response is sent via coordination of the various agencies.

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 17,100 registered riders. Since its inception in June 2005, the program has resulted in 3.32 million fewer car trips, 79.42 million fewer miles driven, and the saving of 3.86 million gallons of gas.

Biking and walking trips account for 4.2 percent of alternative commute trips recorded on NuRide during 2011.

METRO operates the STAR Vanpool program serving more than 700 routes and is ranked as the second largest vanpool program nationally by passenger trips and the third largest vanpool program nationally by passenger miles in the 2011 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 their proactive efforts to decrease emissions.

Teleworking

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

Guaranteed Ride Home Programs

The GRH program provides emergency rides home to transit and rideshare users to address one of the main concerns of those who leave their car at home. All registered users of METRO bus and STAR vanpool riders, registered TREK Express users, and Fort Bend County Transit users have access to three free rides home per calendar year.

Houston Area Transit Service

METRO provides local and express bus service via 97 routes, serving approximately 208,200 average daily boardings (weekday – FY 2012). METRO also operates 32 park-and-ride routes serving approximately 29,200 average daily boardings (weekday – FY2012). METRO also operates light rail transit along a 7.5-mile section serving downtown, the Texas Medical Center, and the Reliant Center with 38,100 average daily boardings (weekday – FY2012).

There are also six transit services that have received funding through the Commuter and Transit Services Pilot Program, with a seventh service set to begin in February 2012.

Corridor Transit Service

Along this segment of IH 45, METRO operates nine routes serving downtown and one route serving the Texas Medical Center. These ten routes serve approximately 18,700 average daily weekday boardings (FY2012).

METRO operates two transit centers in this corridor (Eastwood and Gulfgate), serving 11 local and park-and-ride routes.

METRO's Southeast Light Rail Transit (LRT) line is scheduled to open in 2014.

HOV/HOT Lanes

The Gulf Freeway HOV lane has been converted to a High Occupancy Toll (HOT) lane by METRO. Single occupant vehicles are allowed to use the HOT lane from 5:00 a.m. to 7:00 a.m. and from 8:00 a.m. to 11 a.m. in the inbound direction on weekdays. For the outbound direction, single occupant vehicles may use the lane from 1:00 p.m. to 4:00 p.m. and from 6:00 p.m. to 8:00 p.m. on weekdays. HOT lanes are closed to traffic during weekends.

Planning Efforts to Date

IH 45 Expansion

TxDOT is holding public scoping meetings to conduct the IH 45 North Environmental Impact Statement (EIS) Study for the North Houston Highway Improvement Project

(<http://www.ih45northandmore.com/news.aspx>) that involves the evaluation of:

- IH 45 North from the US 59/SH 288 interchange to Beltway 8 North.
- Hardy Toll Road from IH 610 North to Beltway 8 North.
- Portions of the IH 10, US 59, and SH 288 freeways around downtown.

Many projects are in the preliminary engineering stage including:

- Construction of a direct connector IH 610 EB to IH 45 NB.
- Construction of a direct connector IH 45 SB to IH 610 WB.
- Restriping northbound Pierce elevated to four lanes from IH 10 to US 59; remove southbound left hand Allen Parkway entrance.
- Use of elevated facility for US 59 connector (Transportation Management System improvements) from Spur 5 to US 59.

The Galveston-Houston Mobility Corridor Alternatives Analysis is reviewing commuter rail and bus rapid transit options from Galveston Island to downtown Houston (www.galvestonrailstudy.com).

Next Steps

Downtown Redesign Planning Study

In addition to several short and long term planned projects described above, three separate multimodal transportation corridor feasibility studies that have the potential to impact operations on IH 45 are planned to be conducted in 2019. The limits for these studies are:

- IH 45 North from US 59 to Beltway 8 North.
- SH 288 from US 59 to CR 60 in Angleton.
- US 59 South from Spur 527 to IH 45 including the interchange of SH 288.

It is recommended that these three studies be combined into one comprehensive study. The scope of the study should include all freeway routes within Loop IH 610.

Phase 1 of this proposed comprehensive study has been included under the currently-underway IH 45 EIS study. The results of the first phase effort will identify origin-destination patterns for the downtown freeways within the IH 610 Loop and will be used to develop alternatives and solutions to mitigate congestion along multiple freeway corridors.

Support for Aggressive Incident Management

The Motorist Assistance Program has operated a few vehicles to assist with minor repairs and stalled vehicles for 20 years. SAFEClear, the City of Houston's rapid clearance program that implemented performance driven tow services (tow trucks have to reach incident site in six minutes), has been very successful since 2005 in reducing incident clearance times and improving safety. Crash reductions of between 10 percent 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 60 percent to 70 percent. Dedicated funding resources or a different operating strategy

should be found for programs such as 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. A study should be conducted to identify freeway locations that can 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 should be conducted. These strategies include, but are not limited to, flex-time, carpooling, and employer sponsored vanpooling, transit, and parking incentives.

Mobility Improvements to Significant Parallel Streets

This early action feasibility study would identify mobility improvements along major streets in the IH 45 corridor in order to create viable alternate routes. These mobility improvements would 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.