



MOVING FORWARD PLAN A DRAFT PROJECT PROFILESSEPTEMBER 2018

DISCLAIMER

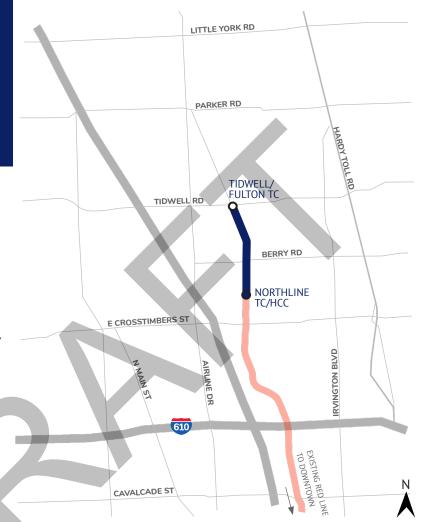


This document includes preliminary descriptions of potential projects that are included in the current draft METRONext alternative regional transit plans. Such information is being provided solely for discussion purposes by the Board of Directors of the Metropolitan Transit Authority of Harris County, Texas (METRO) during a workshop session on September 12, 2018. The draft project descriptions and expected benefits are based on various financial estimates, economic forecasts, assumptions and other data, which are subject to change. As a result, the final proposed projects, as well as their actual benefits, could vary materially. Additionally, any proposed plan or project conducted by METRO is subject to certain approvals and authorization, including approval by the METRO Board of Directors.

METRO makes no promise or guarantee of any kind with respect to the feasibility, future implementation or benefits of any proposed projects or plans described herein.



N11: RED LINE EXTENSION -NORTHLINE TRANSIT CENTER/HCC TO TIDWELL ROAD



PROPOSED PROJECT

LIGHT RAIL TRANSIT (LRT) FACILITY

EXISTING FACILITIES

EXISTING STATION

EXISTING LRT/BRT

Alignments and facilities are not shown to scale and are subject to further study.

IMPROVE MOBILITY		Daily Boardings	2,200
	35	Pop+Emp Density (2040)	15.6
ENHANCE	0.00	Major and Emerging Activity Centers Served	0
CONNECTIVITY		Frequent Routes Connected	1
	\$	Ease of Bike/Pedestrian Access	high
SUPPORT		Economic Growth Potential	medium
VIBRANT COMMUNITIES		Low-Income Population Served	482
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$124M



QUICK FACTS Light Rail Mode Length 1.0 mi. Northline TC/HCC Tidwell/Fulton TC Downtown **Centers** TMC HIGHLIGHTS Extends frequent and reliable service to the METRORail network at Northline Transit Center/HCC Station. Provides a direct rail connection between the new Tidwell/Fulton Transit Center, Downtown and the Texas Medical Center (TMC). Improves connections for high-ridership local routes including the 45 Tidwell and 56 Airline/Montrose.

PROJECT DESCRIPTION

This extension of METRO's Red Line light rail will begin at the existing Northline Transit Center/ HCC Station and end approximately one mile north at a new Tidwell/Fulton Transit Center. The line will run in the center of Fulton Street to Tidwell Road. A precise location for the transit center will be determined as part of a more detailed study.

CORRIDOR CONDITIONS

The North corridor includes three major highways: IH 45 North, the Hardy Toll Road, and SH 249/ Tomball Parkway. They serve the growing suburban communities of Tomball, Spring, and The Woodlands. Some of the major activity centers connected in the North corridor include Greenspoint and George Bush Intercontinental Airport (IAH Airport). Surrounding land uses are a growing mix of industrial and residential development along IH 45 North and the Hardy Toll Road, particularly near Greenspoint and IAH Airport. Along SH 249, vacant land and several large farms are converting to single-family subdivisions.

Just north of Spring Creek in Montgomery County, The Woodlands features a growing number of corporate campuses. The ExxonMobil campus near the interchange of SH 99/Grand Parkway and IH 45 North, also known as Spring-West, has drawn significant residential and commercial development. Development trends in the North corridor are expected to result in a 45 percent population increase and a 38 percent job increase by 2040.

The segment of IH 45 North between BW 8 and IH 610 is the fourth most congested roadway segment in the Houston region. The North corridor is only partially served by METRORail, which

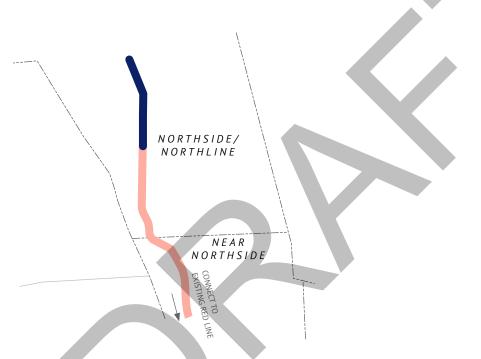
MOVING FORWARD PLAN A: NORTH CORRIDOR



extends as far north as the Northline Transit Center/HCC Station. The North corridor also features four Park & Rides and two transit centers. METRO operates three commuter routes along IH 45 North using a one-lane reversible High Occupancy Vehicle (HOV) lane; it also operates one commuter route along SH 249. Nine local and express routes traverse the North corridor, including the high performing 56 Airline/Montrose, which connects Greenspoint to the Texas Medical Center (TMC). The North corridor directly connects to three activity centers and nine frequent local routes.

Despite anticipated high growth, much of the rest of the corridor is expected to remain relatively low-density and underdeveloped. There are significant concentrations of low-income households (one household per acre) in this area.

NEIGHBORHOODS/ACTIVITY CENTERS SERVED



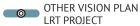
IMPROVE MOBILITY	 Preserves an opportunity for future connectivity to activity and employment centers including IAH Airport, Greenspoint, Springwoods, The Woodlands, and Downtown.
ENHANCE CONNECTIVITY	• Expands bus-light rail connections in neighborhoods north of IH 610.
SUPPORT VIBRANT COMMUNITIES	 Connects to the east-west Tidwell corridor, an area that is densifying in terms of population and jobs. Connects to high capacity transit in an area with over 30 percent of low-income residents.
ENSURE A RETURN ON INVESTMENT	Leverages the existing investment in light rail in the North corridor that facilitates incremental northward expansion.



SE10: PURPLE LINE EXTENSION - PALM CENTER TO BELLFORT STREET

PROPOSED PROJECT

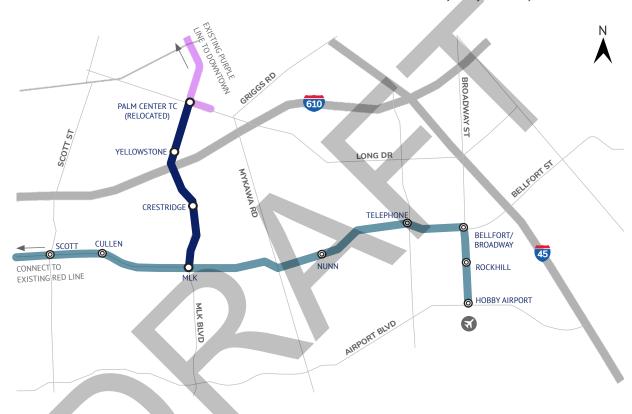




EXISTING FACILITIES

EXISTING METRORAIL/BRT

Alignments and facilities are not shown to scale and are subject to further study.



IMPROVE MOBILITY		Daily Boardings	2,700
	8	Pop+Emp Density (2040)	11.9
ENHANCE	0.0	Major and Emerging Activity Centers Served	3
CONNECTIVITY		Frequent Routes Connected	3
	\$ 5	Ease of Bike/Pedestrian Access	high
SUPPORT		Economic Growth Potential	high
VIBRANT COMMUNITIES		Low-Income Population Served	1,390
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$372M



QUICK FACTS



Mode

Light Rail



^Q\♀ Length **Facilities** 2.5 mi.

O Palm Center TC

(Relocated)

Yellowstone

Crestridge

Activity Centers Centers Downtown

UH/TSU

Hobby Airport



HIGHLIGHTS

- Provides a direct and reliable connection from the relocated Palm Center Transit Center and South Park to the Bellfort corridor.
- Complements the proposed Red Line extension to Hobby Airport that will connect the airport to Downtown.
- Provides an alternative to traveling along IH 45 South, the principal freeway that serves communities along the Southeast corridor.

PROJECT DESCRIPTION

This project will extend the Purple Line to Bellfort Street along Martin Luther King (MLK) Boulevard. The project will begin at a new Palm Center Station on MLK Boulevard and end at Bellfort Street. This project will provide a one-seat ride from the Purple Line to Hobby Airport. Three new stations are proposed along this alignment. The hours and frequency will be consistent with existing METRORail service.

CORRIDOR CONDITIONS

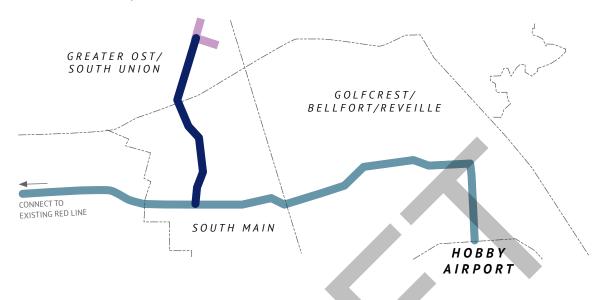
The Southeast corridor extends from Downtown Houston to Galveston, generally following IH 45 South. The Southeast corridor features vastly different land uses along its length. Growth rates are not as high as Houston's north and west regions, but the Southeast corridor's population is expected to increase by 19 percent, while job growth is forecast at 11 percent by 2040. Household incomes in this corridor average \$35,000 or lower. Similarly, poverty rates in the corridor are high, with some areas exceeding 50 percent.

Traffic volumes in this corridor are among the highest in the Houston region. The section of IH 45 South, between Downtown and IH 610, is the eleventh most congested corridor in Texas. IH 45 South is the primary connection between Downtown and Hobby Airport. Combined with IH 610, it provides the primary connection between the Texas Medical Center (TMC) and Hobby Airport.

The Purple Line Extension follows the existing 80 MLK/Lockwood bus route, one of METRO's more frequent routes.



NEIGHBORHOODS / ACTIVITY CENTERS SERVED



IMPROVE MOBILITY	 Allows a one-seat ride to Hobby Airport directly from the Purple Line via the planned Red Line Extension to Hobby Airport. Provides an alternative to the IH 45 South corridor, which is ranked relatively high in terms of congestion levels; IH 45 South is the primary connection between Downtown and Hobby Airport. Along with IH 610, it also provides the primary travel connection between the TMC and Hobby Airport.
ENHANCE CONNECTIVITY	 Connects to the proposed University Corridor Bus Rapid Transit (BRT) Line at Scott Street and to other high frequency bus routes including the 54 Scott and the 80 MLK/Lockwood. Connects neighborhoods along the Purple Line extension to job centers.
SUPPORTVIBRANT COMMUNITIES	Serves a corridor with low-income populations and a high number of zero-car households.
ENSURE A RETURN ON INVESTMENT	 Leverages the existing investment in the Purple Line to expand service to South Park. Leverages the planned investment in the Red Line expansion to Hobby Airport by connecting Purple Line riders between Downtown and UH/TSU to Hobby Airport. Enhances the competitiveness of UH/TSU by providing a direct light rail connection to Hobby Airport and reduces the need for future parking facilities.



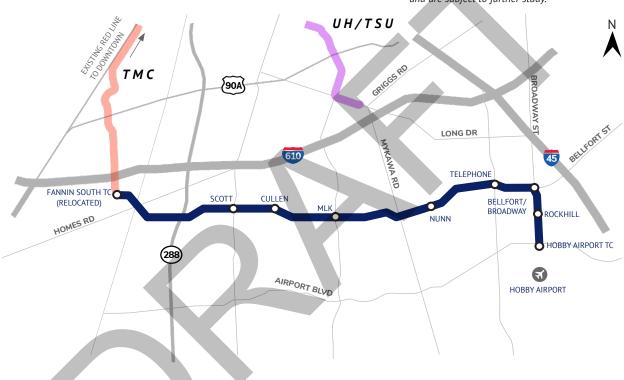
SE11: RED LINE
EXTENSION - FANNIN
SOUTH TRANSIT
CENTER TO HOBBY
AIRPORT

PROPOSED PROJECT
LIGHT RAIL TRANSIT
(LRT) FACILITY

EXISTING FACILITIES

EXISTING METRORAIL/BRT

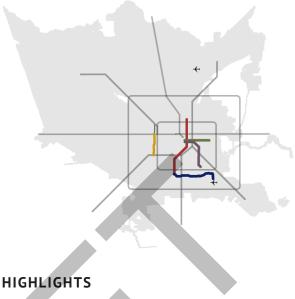
Alignments and facilities are not shown to scale and are subject to further study.



IMPROVE MOBILITY		Daily Boardings	14,300
	3	Pop+Emp Density (2040)	26.6
ENHANCE	0.00	Major and Emerging Activity Centers Served	3
CONNECTIVITY		Frequent Routes Connected	4
	\$ 5	Ease of Bike/Pedestrian Access	high
SUPPORT		Economic Growth Potential	high
VIBRANT COMMUNITIES		Low-Income Population Served	3,220
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$1.021B



QUICK FACTS Mode Light Rail Length 9.0 mi. • Fannin South TC **Facilities** (Relocated) Scott O Cullen **O** MLK O Nunn O Telephone • Bellfort/ Broadway O Rockhill Hobby Airport TC Downtown **TMC Hobby Airport**



- Serves Bellfort Street, one of METRO's highest ridership corridors.
- Provides a frequent, reliable and direct rail connection between Hobby Airport and Texas Medical Center (TMC), with continuing Red Line service to Downtown Houston and other regional employment centers and destinations.

PROJECT DESCRIPTION

The Red Line Extension will run in the median of Bellfort Street from a relocated light rail station at the Fannin South Transit Center. At Hobby Airport, the alignment turns south on Broadway Street to end at a transit center at Hobby Airport. The terminus station location, along with direct connections to the Hobby Airport terminal, will be subject to further study when the project is in design. There are an additional seven stations located between Fannin South and Hobby Airport. These stations will be walk-up stations; most are served by existing METRO bus routes.

This project will intersect with the proposed Purple Line Extension from Palm Center to Bellfort Street at MLK Station, providing a one-seat ride on the Purple Line to Hobby Airport.

The Red Line Extension alignment generally follows the existing 73 Bellfort bus route, which is one of METRO's most productive lines. It ranks first in boardings per revenue hour and tenth in overall ridership.

CORRIDOR CONDITIONS

The Southeast corridor features different land uses along its length. While growth rates are not as high as portions of the Houston region's west and north sides, the Southeast corridor's population is expected to increase by 19 percent, while job growth is forecast at 11 percent by 2040.

TMC is the major employment and activity center in the corridor, with about 100,000 jobs. Employment is expected to increase by 15 percent by 2040, resulting in total TMC employment of over 115,000. Household incomes along Bellfort Street between SH 288 and Hobby Airport are generally low, averaging \$35,000 or less.



Traffic volumes in the corridor are among the highest in the region. The section of IH 45 South, between Downtown and IH 610, is the eleventh most congested corridor in Texas. IH 45 South is the primary connection between Downtown and Hobby Airport. Combined with IH 610, it also provides the primary travel connection between TMC and Hobby Airport.

NEIGHBORHOODS / ACTIVITY CENTERS SERVED



Trains operating between Hobby Airport and Fannin South Transit Center will continue along the Red Line north to TMC, the Wheeler Transit Center, Downtown, and the Northline Transit Center/HCC Station.

PROJECT BENEFITS	
IMPROVE MOBILITY	 Provides a fast, reliable one-seat ride from two of the region's biggest employment centers - Downtown and TMC - to Hobby Airport. Provides an alternative to the IH 45 South corridor, which is ranked relatively high in terms of congestion. IH 45 South is the primary connection between Downtown and Hobby Airport. Combined with IH 610, it also provides the primary travel connection between the TMC and Hobby Airport. Provides a direct connection to the Purple Line Extension, which serves Sunnyside and the University of Houston/Texas Southern University (UH/TSU).
ENHANCE CONNECTIVITY	 Connects Sunnyside and Southside to activity and job centers including Downtown and TMC. Connects to the proposed east-west University Corridor Bus Rapid Transit (BRT) Line at the Wheeler Transit Center. Connects to several north-south bus routes along the Scott, MLK, and Broadway corridors.
SUPPORTVIBRANT COMMUNITIES	 Serves a corridor with low-income populations and a high number of zero-car households. Serves as an alternative to the IH 45 South corridor for communities in this corridor to access job centers including TMC, Downtown, and Hobby Airport.
ENSURE A RETURN ON INVESTMENT	 Provides a direct light rail connection between Hobby Airport and TMC, expands transportation options, reduces travel time, and provides additional capacity to help support TMC expansion while minimizing needs for new structured parking.



WSW10.2: UNIVERSITY
CORRIDOR BUS RAPID
TRANSIT (BRT) LINE WESTCHASE PARK & RIDE
TO KASHMERE TRANSIT
CENTER

PROPOSED PROJECT

BUS RAPID TRANSIT (BRT) FACILITY

EXISTING FACILITIES

EXISTING METRORAIL/BRT

Alignments and facilities are not shown to scale and are subject to further study.



IMPROVE MOBILITY		Daily Boardings	59,500
	3~	Pop+Emp Density (2040)	25.8
ENHANCE	10.00	Major and Emerging Activity Centers Served	4
CONNECTIVITY		Frequent Routes Connected	10
	\$ 5	Ease of Bike/Pedestrian Access	high
SUPPORT		Economic Growth Potential	high
VIBRANT COMMUNITIES		Low-Income Population Served	10,170
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$1.163B



QUICK FACTS



Mode

Bus Rapid Transit



Contract Length

22.0 mi.

Facilities

37 Stations

Major Transfer Locations

- Kashmere TC
- Fifth Ward/Denver Harbor TC
- Eastwood TC
- O Wheeler TC
- O Uptown TC
- O Hillcroft TC
- O Gessner P&R
- Westchase P&R



UH/TSU

Greenway Plaza

Uptown

Westchase



HIGHLIGHTS

- Provides rapid transit service and reliable access to jobs and activities through several dense, walkable neighborhoods and major employment and activity centers including the University of Houston/Texas Southern University (UH/TSU), Greenway Plaza, Uptown, and Westchase.
- Provides operational flexibility to potentially connect BRT service on the Uptown BRT Line.
- At the Wheeler Transit Center, the University Corridor BRT Line interfaces with the Red Line, provides a direct connection to Downtown and the proposed Texas Medical Center (TMC) East.
- Connects to nearly all of METRO's major northsouth bus routes west of Main Street.
- Directly connects to the Purple and Green Lines.

PROJECT DESCRIPTION

This project is a Bus Rapid Transit (BRT) line in the east-west Westpark and Richmond corridors (from the Westchase Park & Ride to the Wheeler Transit Center) and in the north-south Lockwood corridor (from the Wheeler Transit Center to the Kashmere Transit Center).

The BRT interfaces with the METRORail Red Line and several METRO bus routes. It generally follows the same alignment of the previously proposed University Line light rail project. The alignment will primarily follow METRO owned right-of-way (ROW) along Westpark Tollway, Westpark Drive, and Edloe Street, where the BRT line will head north to transition into a dedicated center running lane in the Richmond corridor.

The eastern segment of this project, which extends east and northeast of the Wheeler Transit Center, terminates at the Kashmere Transit Center. It will serve the Greater Third Ward, Eastwood, Second Ward, and Fifth Ward neighborhoods via Lockwood Drive.



CORRIDOR CONDITIONS

The West-Southwest corridor extends from Downtown and generally follows the IH 69/US 59 South and the Westpark Tollway. The corridor includes nearby east-west thoroughfares, Westheimer Road and Richmond Avenue. It is the Houston region's highest employment corridor with over 450,000 jobs. In addition to Downtown, major employment and activity centers in and along the West-Southwest corridor include Westchase, Uptown and Greenway Plaza. All three areas are expected to add jobs by 2040. Greenway Plaza and Uptown are projected to grow at relatively modest rates while Westchase is forecast to grow by nearly 25 percent.

Retail is a prominent land use throughout the corridor. Retail uses are focused along Westheimer Road, Richmond Avenue, and the Uptown/Galleria area near the junction of IH 69/US 59 and IH 610. The corridor features large parcel commercial and multi-family uses, adjacent to office and retail areas.

The population of the corridor is forecast to grow by 25 percent by 2040. Given its connection to major activity centers and rapidly densifying residential communities, it is expected to become the second highest activity corridor. It also has one of the highest proportions of low-income households (2.0 per acre) in the region. Several neighborhoods west of IH 610 have annual household incomes averaging \$35,000 or less, with correspondingly high rates of zero-car households. Residential areas east of IH 610, along Richmond Avenue, are significantly more affluent.

The West-Southwest corridor is served by several local and express routes. Route 25 Richmond is the fifth highest route in the system in terms of weekday boardings (7,013). Commuter express routes 152 and 153 serve the corridor via the Westpark Tollway and one-way HOV facility on the segment of IH 69/US 59 South between IH 610 and Downtown. Several high frequency routes intersect the corridor, including the 54 Scott, 46 Gessner, and 63 Fondren (the third, fourth and sixth most productive routes in the system) with 35.6, 32.1, and 31.7 boardings per hour, respectively.

Congestion is severe during peak periods on the portion of IH 69/US 59 South between Downtown and IH 610, making it the Houston region's second most congested expressway. Congestion continues to increase on IH 69/US 59 South and local roadway networks. Transit travel times are considerably slower than by personal car.

NEIGHBORHOODS / ACTIVITY CENTERS SERVED





IMPROVE MOBILITY	 Connects several dense, walkable neighborhoods and major employment and activity centers. Use of a dedicated guideway, station spacing, off-board fare collection, and signal priority minimizes dwell time at stations and reduces travel time. Provides operational flexibility to operate BRT service along both the University Corridor and the Uptown BRT lines. 	
ENHANCE CONNECTIVITY	 Directly connects several major employment and activity centers including Downtown, Uptown/Galleria, Greenway Plaza, and UH/TSU. Connects with the Uptown BRT Line and provides a potential one-seat, no-transfer service from Gessner to Uptown/Galleria, the Northwest Transit Center (one of METRO's largest transfer points), and the planned Houston terminus of the Texas High Speed Rail (HSR). Connects to the Red Line at the Wheeler Transit Center to provide access to Downtown, TMC, and Hobby Airport. It also connects to the Green Line at Lockwood Station and the Purple Line along Scott Street. Connects to nearly all of METRO's major north-south bus routes west of Main Street. 	
SUPPORT VIBRANT COMMUNITIES	 Connects the dense, walkable neighborhoods of Gulfton, Sharpstown, Alief, and Meyerland to employment, medical, and educational opportunities in Downtown, TMC, and Uptown/Galleria. Provides enhanced service for east and northeast neighborhoods, many with low-income households dependent on transit service to access jobs and activities. 	
ENSURE A RETURN ON INVESTMENT	Uses existing on-street ROW and shares the Uptown BRT Extension to Gulfton Transit Center.	



U2.1: UPTOWN/ GULFTON BUS RAPID TRANSIT (BRT) EXTENSION UPTOWN TRANSIT CENTER TO GULFTON

PROPOSED PROJECT

BUS RAPID TRANSIT (BRT)

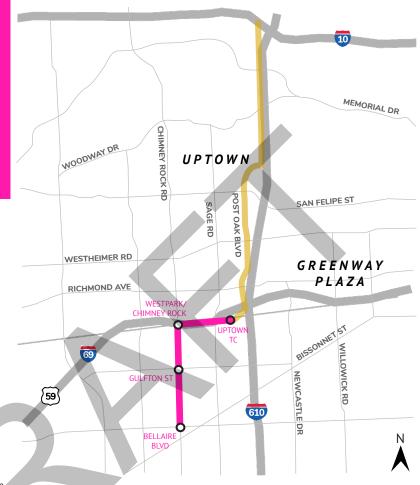
O NEW STATION

EXISTING FACILITIES

EXISTING STATION

EXISTING METRORAIL/BRT

Alignments and facilities are not shown to scale and are subject to further study.



IMPROVE MOBILITY		Daily Boardings	6,700
	3	Pop+Emp Density (2040)	53.0
ENHANCE		Major and Emerging Activity Centers Served	1
CONNECTIVITY		Frequent Routes Connected	3
	\$ 5	Ease of Bike/Pedestrian Access	high
SUPPORT	1 111	Economic Growth Potential	high
VIBRANT COMMUNITIES		Low-Income Population Served	1,760
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$110M



QUICK FACTS Bus Rapid Transit Mode 2.3 mi. Length **Facilities** Uptown TC Westpark/Chimney Rock O Gulfton St O Bellaire Blvd **Activity** HIGHLIGHTS Centers Uptown Provides direct connections from the Bellaire and Bissonnet corridors to the Uptown/Galleria area. Provides critical north-south connection for commuters seeking to avoid severe traffic congestion in both directions on IH 610.

PROJECT DESCRIPTION

The Uptown Bus Rapid Transit (BRT) line (currently under construction) will provide north-south rapid transit service through Houston's Uptown district. This line will operate from the Northwest Transit Center (NWTC) to the planned Uptown Transit Center.

This project extends the Uptown BRT line southward to a new transit center in the vicinity of Bellaire Boulevard and Chimney Rock Road (Gulfton). The proposed alignment runs west along the Westpark Tollway and then south along Chimney Rock Road. This project will follow the same design parameters as the current Uptown BRT project and operate in a dedicated median-running bus lane facility. The project cost does not include the proposed Gulton Transit Center. Project costs are included in the Forward Plan.

CORRIDOR CONDITIONS

The Uptown corridor includes the area surrounding IH 610 West and Post Oak Road between US 290 and US 90A. IH 610 West serves the Uptown/Galleria area, a major retail/hotel/office/entertainment destination; Uptown/Galleria is also the second largest employment center in the region. Despite a surge of residential units, job growth is expected to outpace population growth by 2040.

IH 610 West provides a critical north-south connection in west Houston. Traffic in both directions on IH 610 West is typically heaviest during the morning and evening rush hour periods; however, traffic often remains heavy in off-peak hours due to Uptown's retail and entertainment attractors. As a result, it is ranked as the most congested highway segment in Texas. Furthermore, the interchange at IH 69/US 59 South is considered one of the worst bottlenecks in the state.

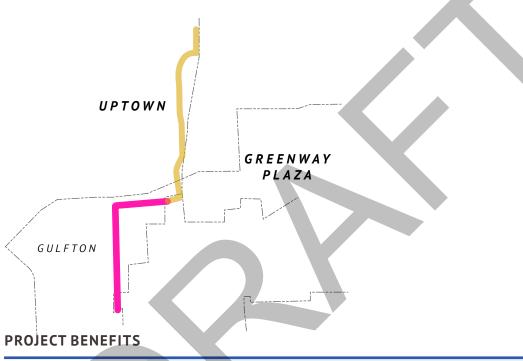
Although METRO does not operate commuter service directly along IH 610 West, the Uptown



corridor is home to three transit centers that provide access to commuter services to Downtown and the Texas Medical Center (TMC) in addition to local and express service to the Energy Corridor and Memorial City. The Uptown corridor is served by six frequent local bus routes that provide access to other destinations throughout the service area.

By 2040, the Uptown corridor is projected to be the second most dense corridor in the region, just behind the West/Southwest corridor. Despite the prevalence of luxury housing units for which the Uptown/Galleria area is known, much of the Uptown corridor is comprised of many older and transitioning neighborhoods with relatively moderate proportions of low-income households.

NEIGHBORHOODS / ACTIVITY CENTERS SERVED



IMPROVE MOBILITY	 Connects the southwest communities of Gulfton, Sharpstown, and Alief to activity centers and employment opportunities in Uptown/Galleria and offers a one-seat ride to Northwest Transit Center (NWTC) and the planned High-Speed Rail (HSR) connection at Northwest Mall.
	 Serves industrial sites in the Gulfton area that are expected to transition to residential and commercial uses, adding residents and jobs to the most densely populated area in the Houston region.
ENHANCE CONNECTIVITY	Serves neighborhoods with a high-density of population and jobs that are projected to further densify in the long term.
SUPPORT VIBRANT COMMUNITIES	 Serves areas with median household incomes below \$35,000; over 40 percent of the population is low-income. Provides access to activity centers and employment opportunities in Uptown/Galleria and connects to the NWTC and planned HSR connection at Northwest Mall.
ENSURE A RETURN ON INVESTMENT	 Leverages the existing investment in the Uptown BRT line. Can reduce the need to add new parking facilities in the Uptown/ Galleria area.

MOVING FORWARD PLAN A: INNER WEST CORRIDOR



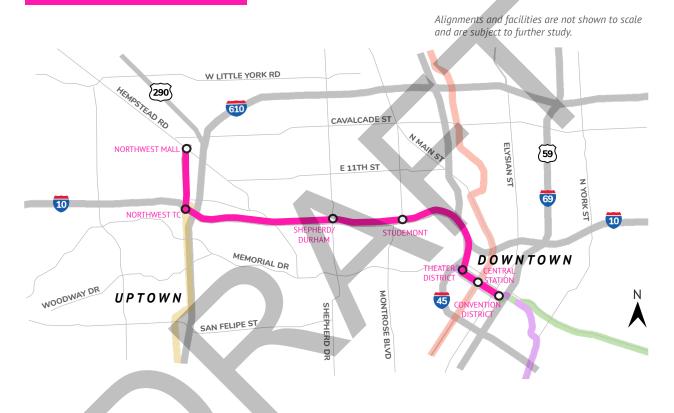
IW5: INNER KATY
BRT LINE DOWNTOWN TO
NORTHWEST
MALL

PROPOSED PROJECT

BUS RAPID TRANSIT (BRT) FACILITY

EXISTING FACILITIES

EXISTING METRORAIL/BRT



IMPROVE MOBILITY		Daily Boardings (includes high-speed rail & express bus riders)	28,650
	3	Pop+Emp Density (2040)	94.1
ENHANCE	0.00	Major and Emerging Activity Centers Served	2
CONNECTIVITY		Frequent Routes Connected	7
	\$	Ease of Bike/Pedestrian Access	high
SUPPORT	1111	Economic Growth Potential	high
VIBRANT COMMUNITIES		Low-Income Population Served	507
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$327M



OUICK FACTS Mode **Bus Rapid Transit** 8.5 mi. (service) Length 4.5 mi. (capital) **L**A Facilities 7 Stations Convention District Central Station Theater District Studemont Shepherd/Durham Northwest TC Northwest Mall Downtown **Activity** Uptown



HIGHLIGHTS

- Extends the Uptown BRT Line to Downtown.
- Provides rapid and reliable service between Downtown and the planned High-Speed Rail (HSR) terminus at Northwest Mall.

PROJECT DESCRIPTION

This project will provide a rapid transit connection in the Houston region's busiest travel corridor, IH 10 West (Katy Freeway) between downtown Houston and IH 610. It consists of an exclusive bi-directional guideway to be used by a new Bus Rapid Transit (BRT) line and for existing regional express buses that operate along IH 10 West. This project will extend the Uptown BRT Line from its current terminus at the Northwest Transit Center (NWTC) to Downtown, providing direct service from the Gulfton area to Downtown. The BRT Line will also connect to the planned High-Speed Rail (HSR) terminus at Northwest Mall.

The IH 10 West corridor between Uptown and Downtown is a vital east-west connection that funnels traffic from the west and northwest to Downtown. The gap in the current two-way High Occupancy Vehicle (HOV) network along this portion of IH 10 West contributes to delays and unreliable schedule adherence. METRO routes in this corridor experience slow travel speeds and delays due to high traffic volumes and frequent congestion that occur on IH 10 West and parallel local streets. The project would fill the gap between the existing east and west HOV facilities.

In addition to stations at NWTC and Northwest Mall, stations would be located at Shepherd Drive and Studemont Street. The Shepherd/Durham and Studemont stations would feature two lanes in each direction: a lane for BRT buses stopping at the station and a passing lane for regional express buses, allowing them to maintain consistent speeds without stopping. In downtown, the BRT alignment would share the current on-street lanes used by the Purple Line/Green Line light rail. The lanes, which are currently shared with general traffic, would be reserved for exclusive transit (BRT and light rail) use. The BRT line would also share the existing light rail stations at Theater District, Central Station, and Convention District.

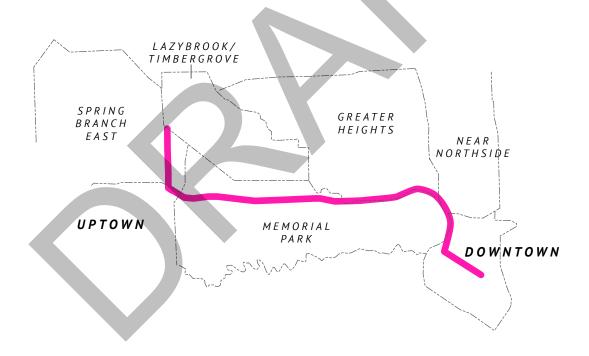


CORRIDOR CONDITIONS

The Inner West segment of IH 10 is currently the seventh most congested roadway segment in the region. It provides access to the highest concentration of employment in the Houston region, including Downtown, Uptown, and the business centers along Allen Parkway.

In addition to IH 10 West, the corridor includes Washington Avenue and Memorial Drive. These thoroughfares provide access to Memorial Park and various historic neighborhoods that in recent years have experienced an increase in residential and commercial development, especially along Washington Avenue and in the Greater Heights. The Inner West corridor is predominantly comprised of single family residential neighborhoods along with older industrial uses along rail corridors. Many of these areas have been undergoing rapid infill and redevelopment to more urban, dense forms of mixed use development. The corridor has one of the highest activity densities in the region today and is expected to remain as such. Due to its population density and older neighborhoods, the corridor has a moderate concentration of low-income households (2.1 per acre). Given its relatively mature development, the Inner West corridor is expected to experience a modest growth in population and jobs by 2040.

NEIGHBORHOODS/ACTIVITY CENTERS



MOVING FORWARD PLAN A: INNER WEST CORRIDOR



IMPROVE MOBILITY	 Provides a rapid transit connection from Uptown and Downtown to the planned HSR terminus. Provides a direct connection from the Gulfton area to Uptown, NWTC, Northwest Mall, and Downtown. Combined with the existing managed lanes on IH 10 West, creates a continuous bi-directional guideway for Regional Express buses between downtown and east of SH 99/Grand Parkway, providing for fast and reliable commuter and all-day service. 	
ENHANCE CONNECTIVITY	 Provides a rapid and reliable transit alternative to one of the most congested roadway segments in the Houston region - the inner segment of IH 10 West. Connects Outer West communities, including the Katy and US 290 corridors to Downtown, Uptown, and the Texas Medical Center (TMC) through the NWTC. 	
SUPPORT VIBRANT COMMUNITIES	 Serves a corridor with one of the highest activity densities in the region. Serves neighborhoods that are redeveloping and densifying with infill projects. 	





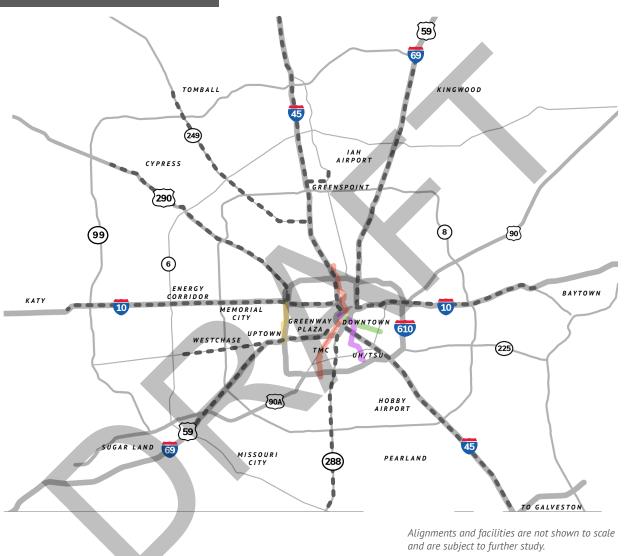
REGIONAL EXPRESS NETWORK INVESTMENT OPPORTUNITIES

PROPOSED PROJECT

REGIONAL EXPRESS NETWORK (PARTNERSHIP)

EXISTING FACILITIES

EXISTING METRORAIL/BRT



HIGHLIGHTS

- Improves bus service on high-ridership HOV/HOT corridors, especially those with two-way demand.
- Improves trip times and reliability for customers.
- Creates opportunities to improve connections to major destinations and activity centers.
- Develops a partnership framework for improving regional bus service including connections beyond METRO service area.



PROJECT DESCRIPTION

The METRONext Forward plan includes Regional Express Network Corridors, positioning METRO to participate in projects that enable bi-directional, all day operations by improving the existing High Occupancy Vehicle (HOV), High Occupancy Toll (HOT), and managed lane networks. Investment in these corridors also provides opportunities for METRO to work with partners to expand two-way HOV/HOT lane operations and improve connections to major destinations and transit hubs. Potential partners include the Texas Department of Transportation (TxDOT), Harris County Toll Road Authority (HCTRA), the City of Houston, and various special districts such as Tax Increment Reinvestment Zones (TIRZs) and management districts. It would build on committed project investment in the planning and design stages including TxDOT's North Houston Highway Improvement Project (NHHIP) which includes two-way managed lanes on IH 45 North between Downtown and BW 8. Another committed TxDOT managed lanes project is along SH 288 in Harris County.

Currently, most of the existing HOV/HOT lane network operates in the peak direction only. This typically involves a single, reversible travel lane separated from main lane traffic congestion. In the non-peak direction and outside of the peak, buses operate in the freeway main lanes and often experience delay due to congestion.

Investments in Regional Express Network Corridors are designed to achieve frequent, highly reliable, two-way service, operating all day, all week, similar to rail. The concept of MAX lanes, which would comprise a regional network of bi-directional lanes for METRO Park & Ride and express buses, can provide an opportunity in the future to operate peak and off-peak service patterns, and to apply a unique brand to this service.

Regional Express Network projects also include a new Park & Ride facility in the vicinity of Fairfield. Project costs are included in the Forward Plan.

Priorities for investment in the Regional Express Network Corridors are segments of the Houston area's expressway network that deliver the greatest benefit to the regional bus system. These segments exhibit two-way transit demand, bus operations impacted by congestion in the non-peak direction, and challenging connections to major activity centers and destinations. Two-way HOV lanes would improve trip times and reduce operating costs, enabling improved METRO service. This improvement would benefit commuter service and express routes.

A range of investment – including re-allocation of existing pavement for buses and HOVs, restriping or the addition of lane barriers, and new construction – would be applied. Partnership projects serving destinations outside of METRO service area, where mutually beneficial projects could be defined and interlocal agreements negotiated, can be considered. These include service to growing activities centers such as Sugar Land, The Woodlands, and Galveston. New trip patterns and service times would be considered as part of the improvements to the regional bus network. These include increased midday, late evening, and weekend service that provide access to a greater range of jobs and other activities. Branding, communication, and service design strategies to improve the legibility and visibility of the service would be explored.



IMPROVE MOBILITY	 Increases travel speeds and reduces trip times on high ridership corridors. Enhances reliability by separating bus from congested freeway main lanes.
ENHANCE CONNECTIVITY	 Increases access to and between major activity centers. Links to local bus and rail network at transit centers and Park & Ride facilities.
SUPPORT VIBRANT COMMUNITIES	 Expands the number of neighborhoods within reasonable travel time of major activity centers. Expands service hours connecting people to more jobs at more times.
ENSURE A RETURN ON INVESTMENT	 Improves the utility of HOV/HOT lane network investment and evolves the system to meet current travel regional patterns. Helps create future corridors for potential autonomous vehicle (AV) transit service separated from mixed flow traffic.





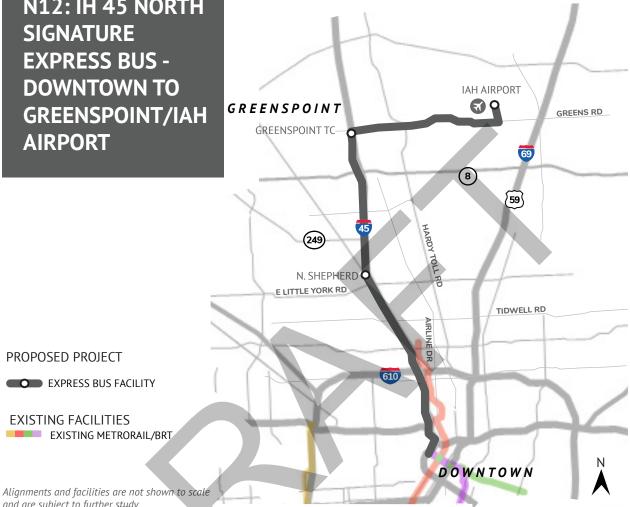
N12: IH 45 NORTH **SIGNATURE EXPRESS BUS -DOWNTOWN TO GREENSPOINT/IAH AIRPORT**

PROPOSED PROJECT

EXISTING FACILITIES EXISTING METRORAIL/BRT

and are subject to further study.

EXPRESS BUS FACILITY



IMPROVE MOBILITY		Daily Boardings	5,000
ENHANCE CONNECTIVITY	3	Pop+Emp Density (2040)	79.2
	0.00	Major and Emerging Activity Centers Served	3
		Frequent Routes Connected	2
	\$ 5	Ease of Bike/Pedestrian Access	low
SUPPORT VIBRANT COMMUNITIES		Economic Growth Potential	low
		Low-Income Population Served	835
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$98M



QUICK FACTS



Mode

Express Bus

^Q√o Length

_ength 25

25 mi. (service)

i ■ Facilities

2.5 mi. (capital)

O Downtown

(stop)

• N. Shepherd Park & Ride

• Greenspoint TC

O IAH Airport

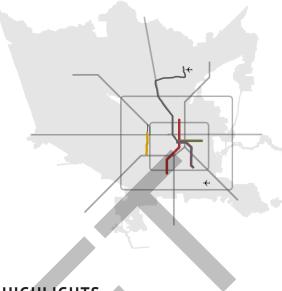
(stop)

Activity Centers

Downtown

Greenspoint

IAH Airport



HIGHLIGHTS

- Improves bus service to major employment and activity centers: IAH Airport and Greenspoint.
- Provides a highly visible rapid transit connection between Downtown and IAH Airport.
- Creates opportunities to improve connections from Greenspoint to area destinations and activity centers.
- Develops a partnership framework with IAH Airport.

PROJECT DESCRIPTION

This project uses a major upgrade planned by the Texas Department of Transportation (TxDOT) on IH 45 North. The planned expansion of the existing one-way reversible High Occupancy Vehicle (HOV) lane into a two-way Managed Express (MaX) lane facility will enable METRO to operate fast and reliable service in both directions during peak and off-peak periods to serve George Bush Intercontinental Airport (IAH Airport) and Greenspoint, a major employment center located at the junction of IH 45 North and BW 8.

In addition to the IH 45 MaX lane, Signature bus service will transition to Greens Road via an elevated ramp and use diamond lanes on Greens Road to the Hardy Toll Road Connector. The project includes a new ramp connecting IH 45 North and the N. Shepherd Transit Center.

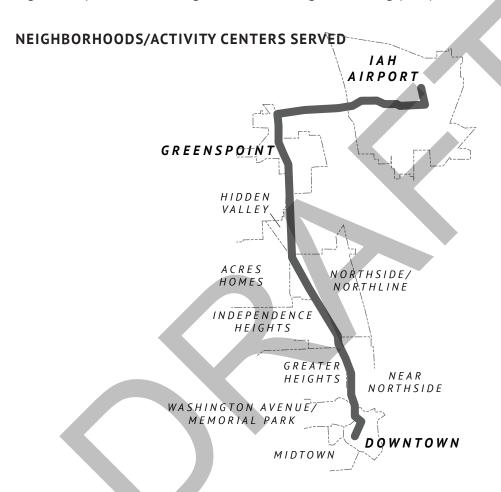
The combination of MaX and diamond lanes will significantly reduce bus travel time between Downtown and IAH Airport, allow for rapid service in both directions during peak and off-peak periods, and enhance schedule reliability.



CORRIDOR CONDITIONS

This portion of the North corridor includes two major highways - IH 45 North and the Hardy Toll Road. Some of the major destinations connected in the North corridor include Greenspoint and IAH Airport. Surrounding land uses are a growing mix of industrial and residential development.

The segment of IH 45 North between BW 8 and IH 610 is the fourth most congested roadway segment in the region. The North corridor is partially served by METRORail as far north as the Northline Transit Center/HCC Station, four Park & Rides, and two transit centers. METRO operates regional express routes along IH 45 North using the existing (HOV) lane.



IMPROVE MOBILITY	 Significantly reduces travel time between Downtown, Greenspoint, and IAH Airport. Enables the operation of consistent and reliable schedules in both directions and during peak and off-peak periods.
 ENHANCE CONNECTIVITY Increases access to Greenspoint and IAH Airport. Provides a new direct, high-speed transit connection between Downtown and IAH Airport. 	



SUPPORTVIBRANT COMMUNITIES	 Provides a reliable travel option for workers in Greenspoint and IAH Airport with fast and frequent service. Provides a high-speed transit option for IAH Airport users to/from the airport, to Greenspoint, and Downtown.
ENSURE A RETURN ON INVESTMENT	• Improves the utility of the planned MaX lanes and reduces operating costs of the current 102 route.





BUS OPERATIONS
OPTIMIZED
SYSTEM
TREATMENTS
(BOOST NETWORK)

PROPOSED PROJECT

BOOST NETWORK

EXISTING FACILITIES

EXISTING METRORAIL/BRT

Alignments and facilities are not shown to scale and are subject to further study.



IMPROVE MOBILITY		Daily Boardings	9,000
ENHANCE _ CONNECTIVITY _	8	Pop+Emp Density (2040)	20.4
	0.0	Major and Emerging Activity Centers Served	10
		Frequent Routes Connected	21
	\$	Ease of Bike/Pedestrian Access	high
SUPPORT VIBRANT COMMUNITIES		Economic Growth Potential	low
		Low-Income Population Served	124,000
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$78M



OUICK FACTS Mode Local Bus 174.0 mi. Length **Facilities Improved Stops** Downtown Uptown Greenway Plaza **TMC** UH/TSU Memorial City Westchase **Hobby Airport** Greenspoint **Energy Corridor**



HIGHLIGHTS

Improves travel times, reliability, accessibility, and the overall customer experience for nearly a quarter of METRO's local bus riders.

PROJECT DESCRIPTION

The Bus Operations Optimized System Treatments (BOOST Network) consists of ten high-ridership, frequent bus routes where speed, reliability, and access improvements have the potential to significantly improve customer experience and ridership.

The range of improvements on the BOOST Network include:

- Stop optimization/consolidation/relocation
- New shelters
- Accessibility enhancements
- Transit signal priority (TSP)
- Queue jumps
- Bus-only lanes
- Enhanced passenger information

By improving travel speeds and reducing dwell time, these service enhancements have the potential to reduce operating costs. The savings could be applied to increase service or to offset the costs of the improvements. Some optimization improvements could be made in the short term on corridors that are designated for future light rail (LRT) or Bus Rapid Transit (BRT).

PURPOSE

The BOOST Network routes are designed to significantly enhance speed, reliability, access, and amenities, thereby increasing operational efficiency and attracting increased ridership.



OPTIMIZED ROUTES AND BENEFITS

4 Beechnut

- Provides east-west service in the Southwest, South, and Southeast corridors.
- Connects with the Red, Green, and Purple light rail lines.
- Interfaces with the 80 MLK/Lockwood.
- Serves two major activity centers: TMC and UH/TSU.

26 Long Point/Cavalcade

- Provides east-west crosstown service in the Outer West, Northwest, North, and Northeast corridors.
- Interfaces with the Red Line light rail.
- Interfaces with the 46 Gessner, the 56 Airline/Montrose, and the 80 MLK/ Lockwood.
- Serves one major activity center: Memorial City.

45 Tidwell

- Provides east-west crosstown service in the Northwest, North, and Northeast corridors.
- Interfaces with the 46 Gessner and the 80 MLK/Lockwood.

46 Gessner

- Provides north-south crosstown service on the west side of Houston.
- Interfaces with the Red Line light rail.
- Interfaces with the 82 Westheimer, the 4
 Beechnut, and the proposed University
 Corridor BRT Line.
- Serves one major activity center: Memorial City.

50 Broadway

- Interfaces with the Green Line light rail at the Magnolia Park Transit Center, providing frequent transfer connections to Hobby Airport.
- Exhibits potential for further enhancement as a Signature service.
- Serves one major activity center: Hobby Airport.

54 Scott

- Provides north-south service between the South corridor and Downtown.
- Interfaces with the Red and Purple light rail lines.
- Serves two major activity centers: Downtown and UH/TSU.

56 Airline/Montrose

- Interfaces with the Red Line light rail at the Texas Medical Center (TMC) Transit Center.
- Interfaces with the 82 Westheimer.
- Serves two major activity centers: Greenspoint and TMC.

73 Bellfort

- Provides east-west service between the Fannin South Transit Center and Hobby Airport.
- Interfaces with the Red Line light rail at Fannin South Transit Center, providing frequent transfer connections to Hobby Airport.
- Serves one major activity center: Hobby Airport.



80 MLK/Lockwood 82 Westheimer Provides north-south crosstown service Proposed as a Signature service including enhanced stops, branding, and in the Northeast, East, and Southeast corridors. higher level passenger amentities. Interfaces with the Green and Purple light Provides east-west service on METRO's rail lines. busiest bus corridor. Interfaces with the 4 Beechnut. Interfaces with the existing Red Line light rail and the Uptown BRT line (under Serves one major activity center: UH/TSU. construction). Interfaces with the 56 Airline/Montrose. Serves three major activity centers: Downtown, Uptown/Galleria, and Westchase.

IMPROVE MOBILITY	• Improves travel times, reliability, and accessibility throughout the METRO service area.
ENHANCE CONNECTIVITY	Provides improved bus service where it is most in demand.
SUPPORT VIBRANT COMMUNITIES	 Can help residents remain and invest in established neighborhoods by providing high frequency service with options for access throughout the METRO service area.
ENSURE A RETURN ON INVESTMENT	 Provides the opportunity to reduce operating costs; the savings could be applied to increase service or offset the costs of service improvements. Some improvements could be made on corridors that are designated for future LRT/BRT projects.

MOVING FORWARD PLAN A: SERVICE ENHANCEMENTS



SERVICE ENHANCEMENTS (INCLUDING 4 COMMUNITY CONNECTORS)

HIGHLIGHTS

- Builds on METRO's New Bus Network by improving service on busy routes and addressing New Bus Network opportunities that were previously recommended but not implemented as part of that plan.
- Adds to METRO's Frequent Network.
- Expands access to transit in low-density areas not conducive to fixed-route transit.
- Expand span of service to better service customers.

PROJECT DESCRIPTION

High prioritized network improvements focus on adding service where strong demand has been demonstrated in the New Bus Network, include the Gessner, Fondren, Old Spanish Trail/Wayside, and Ella/FM 1960 corridors. These express services in the IH 10 West and Westpark corridors are improved and simplified. New and extended routes in the Sharpstown, Gulfton, Fondren, and Energy Corridor areas provide additional connections.

Four Community Connector zones in the Homestead, Aldine Westfield, SH 249 Seton Lake, and Missouri City areas will improve access to transit where the street grid and walkability make effective fixed route transit challenging. These Community Connectors can make on-demand pickups and drop-offs within a defined zone and connect people to the METRO fixed-route network.

IMPROVE MOBILITY		Daily Boardings	49,000
ENHANCE _ CONNECTIVITY _	\$	Pop+Emp Density (2040)	10.3
		Major and Emerging Activity Centers Served	20
		Frequent Routes Connected	21
	\$	Ease of Bike/Pedestrian Access	high
SUPPORT VIBRANT COMMUNITIES	1111	Economic Growth Potential	low
		Low-Income Population Served	204,371
ENSURE A RETURN ON INVESTMENT	\$	Capital Cost	\$25M
	0.05.40		41

MOVING FORWARD PLAN A: SYSTEM ENHANCEMENTS



IMPROVE MOBILITY	Provides improved service frequency in targeted areas to respond to travel needs and changing travel demands.
ENHANCE CONNECTIVITY	Expands accessibility to transit in Community Connector zones.
SUPPORT VIBRANT COMMUNITIES	 Allows for the provision of transit service in areas that might otherwise be unable to support traditional fixed route bus service, thereby maintaining neighborhood viability by providing needed access to jobs and services.
	• Provides the opportunity to test non-traditional service concepts and tailor them to the community's needs.
ENSURE A RETURN ON INVESTMENT	Create more efficient and effective service options than traditional fixed-route bus service in lower-density areas.





UNIVERSAL ACCESSIBILITY & FIRST MILE/LAST MILE

HIGHLIGHTS

- Increases ridership by integrating a multimodal approach.
- Removes barriers that have traditionally hindered access by those with reduced mobility.
- Ensures safe and efficient access to the region by improving access to the METRO transit system.
- Programmatically integrates First and Last Mile connections, along with improving accessibility, to provide a consistent and safe experience for all riders.

PROJECT DESCRIPTION

First Mile/Last Mile refers to the portion of a transit trip between a transit stop and a transit rider's origin or destination and can include walking, bicycling, carpooling, or driving. The purpose is to provide a safe, efficient, and accessible first and last mile connection that makes it easier for transit riders to navigate the region.

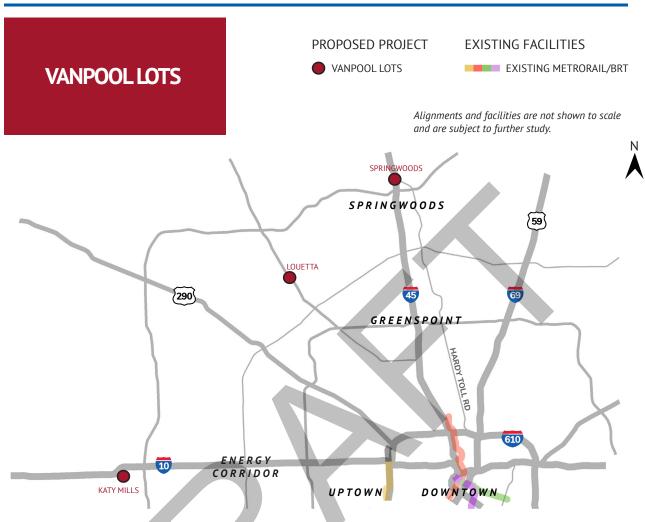
Universal design will become more prominent as the transit network matures. However, inadequate or non-existent sidewalks, exposed drainage, lack of suitable bike facilities, and non-ADA compliant intersection crossings raise accessibility concerns for METRO riders.

This project includes the following improvements:

- Sidewalk access to transit centers, Park & Rides, light rail (LRT) and Bus Rapid Transit (BRT) stations, and other major transit nodes
- Crosswalks and ADA-accessible ramps
- Audio and visual information at Park & Rides, METRORail stations, and transit centers
- Bike lanes, paths, or trails connecting to major transit nodes
- Wayfinding signage
- Short-term and long-term bike storage and repair stations

MOVING FORWARD PLAN A: VANPOOL PROGRAM





PROJECT DESCRIPTION

Three vanpool lots are proposed to provide vanpoolers designated, central locations where their cars may be left during the day while they commute by vans to work. These lots will support the METRO Star vanpool program and will provide flexible commute options for individuals both within and outside the service area.

QUICK FACTS Vanpool Lots Katy Mills Louetta Springwoods Capital Cost \$15M

HIGHLIGHTS

- Provides flexible commute options.
- Connects commuters to workplaces outside the METRO service area.
- Provides additional cost-effective and convenient opportunities for residents to use the High Occupancy Vehicle (HOV) network.