

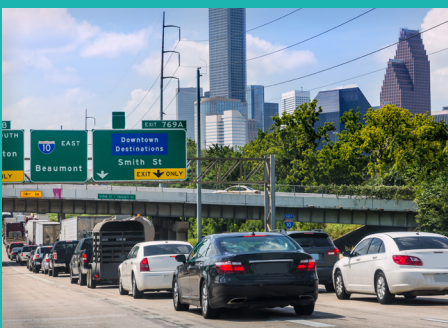


Houston-Galveston Area Council

2045 RTP

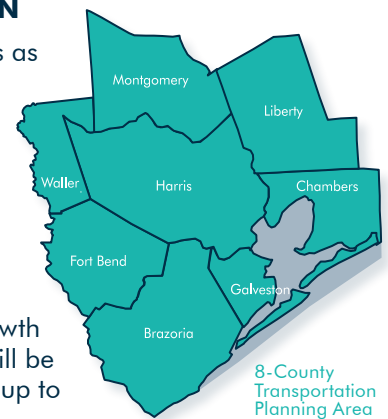
REGIONAL TRANSPORTATION PLAN

SUMMARY



THE 2045 REGIONAL TRANSPORTATION PLAN

The Houston-Galveston region consistently ranks as one of the fastest growing metropolitan areas in the United States and is home to one of the nation's largest employment hubs. The population in the region rose from approximately 3.1 million residents in 1980 to about 6.8 million in 2018 – an increase of nearly one million residents per decade. Similarly, employment in the region grew by about half a million new jobs between 2010 and 2015, indicative of a strong and diverse economy. This growth trend is expected to continue. By 2045, the region will be home to about 10.7 million people and will support up to 4.8 million jobs.



As the designated Metropolitan Planning Organization (MPO), the Houston-Galveston Area Council (H-GAC) is responsible for planning for the orderly growth and development of the eight-county transportation management area, in coordination with several planning partners. The long-range Regional Transportation Plan (2045 RTP) represents a coordinated effort to address the present transportation concerns and to prepare for the mobility needs of the future. The fiscally constrained investments selected for inclusion in the 2045 RTP are based on the unique needs and characteristics of the MPO region and will guide the transportation decision-making in the region over the next 25 years.

TRANSPORTATION SYSTEM CONCERNS

Congestion is a leading transportation concern in the Houston-Galveston region. It affects the reliability of the transportation system, impacts economic activity, and influences the quality of life of area residents. Sixty percent of the most congested roads in Texas are in Harris County. The West Loop Freeway (IH 610 W) and Southwest Freeway (IH 69S/US 59 S) top the list as the first and second most congested road segments in the state. The annual cost due to congestion in 2016 was estimated at about \$1.12 billion.

Safety is another serious concern for roadway travel in the region. Between 2012 and 2016, motor vehicle crashes increased regionwide by more than 40%. Fatalities from vehicle accidents increased by over 20% within the same period. Vehicle crashes cost the region as much as \$6.4 billion in 2016 and is one of the leading causes of death among persons in their teens and twenties.

Funding for the different transportation needs is a challenge faced throughout the nation. Federal revenue comes largely from the Highway

Five goals were selected to direct the work towards this vision. Each goal is associated with quantifiable performance measures that indicate the progress made towards achieving the goal. Finally, three strategies – MANAGE, MAINTAIN, and EXPAND – help to identify specific projects that support each goal.

MANAGE [System Management and Operations]

System and operations management techniques are designed to make more efficient use of existing

MAINTAIN [Asset Management]

Keeping the bridges, roadways, transit facilities, railroads, and port facilities in a good state of repair is a fundamental need for our region’s transportation system. The Maintain strategy directly supports all five RTP goals and accounts for about 37% of the total 2045 RTP expenditure. Adequate maintenance extends the life of the facilities and promotes the safety of the traveling public at a fraction of the cost of constructing new ones. Projects recommended to implement this strategy in the 2045 RTP will

RELATIONSHIP BETWEEN 2045 RTP STRATEGIES, GOALS AND PERFORMANCE MEASURES

| STRATEGIES | | | | |
|---|--|------------------------------|---------------------------------------|--|
| GOAL | MANAGE Improve System Management & Operations | MAINTAIN Asset Management | EXPAND Multimodal Network Capacity | PERFORMANCE MEASURES |
| Improve Safety | ● | ● | ◐ | Reduce Crash Rates of Fatalities and Serious Injuries |
| Achieve/Maintain State of Good Repair | ● | ● | ● | Pavement & Bridge Conditions and Transit Asset Management |
| Move People and Goods Efficiently | ● | ● | ◐ | Increase Reliability, Expand Multimodal Network and Improve Incident Response |
| Strengthen Regional Economic Competitiveness | ● | ● | ● | Increase Truck Travel Time Reliability and Increase Multi-Occupant Vehicle Use |
| Conserve and Protect Natural and Cultural Resources | ● | ● | ◐ | Emission Reductions and Reduce Impacts Requiring Mitigation |

● Direct Impact ◐ Related Impact

Trust Fund whose major source is the 18.4 cents tax per gallon of gasoline. Expenditures from this fund have outpaced revenues. Federal regulations require the RTP to be financially constrained to resources estimated to be reasonably available within the life of the plan. Funding limitations influence the ability to assist otherwise beneficial transportation projects.

VISION, GOALS, PERFORMANCE MEASURES, AND STRATEGIES

“In the year 2045, our region will have an integrated multimodal transportation system, achieved through coordinated public and private investments that supports a desirable quality of life, enhanced economic vitality and increase safety, access and mobility.”

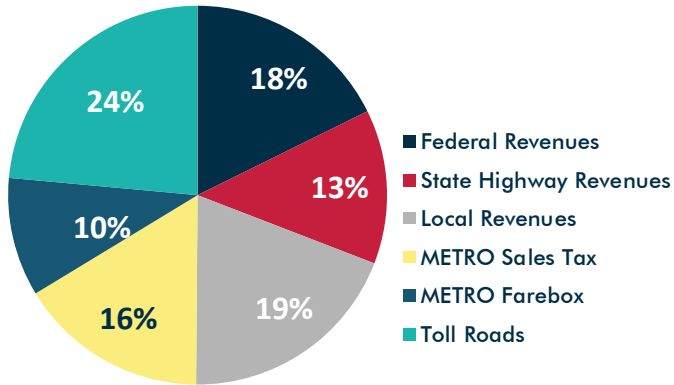
roadway facilities through low-cost solutions such as traffic signal synchronization, rapid incident management, and traveler information systems. Projects recommended to implement this strategy in the 2045 RTP will alleviate congestion and address traffic safety by improving access management on the roadways, adding grade separations at intersections, removing traffic bottlenecks, and the reducing vehicular traffic through the increased use of transit and other alternate commute solutions. The congestion management process (CMP) is an integral part of the overall strategy. The Manage strategy supports all five goals of the 2045 RTP and accounts for about 27% of the total plan expenditures.

maintain and improve existing roadways and the network of walkways and bikeways.

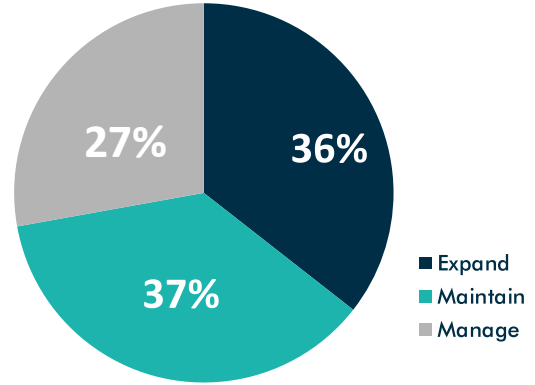
EXPAND [Multimodal Network Capacity]

The Expand strategy focuses on adding capacity across all the modes of transportation. Network expansion could enhance safety, improve incident response, and provide travel alternatives and relief to currently congested facilities. Projects recommended to implement this strategy include roadway widening, grade separations, building interconnected networks of walkways and bikeways, and promoting design practices that improve safety on new roadways. The Expand strategy accounts for about 36% of the total 2045 RTP expenditure.

Revenue by Source Total: \$147 Billion



Expenditures by Strategy Total: \$132 Billion

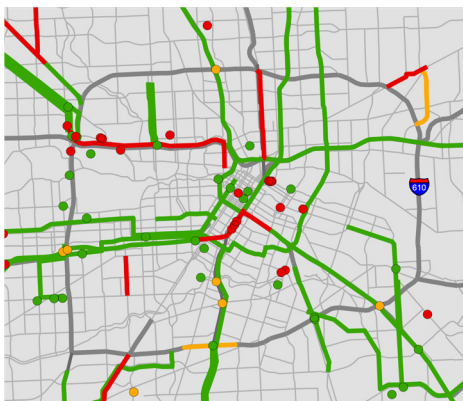
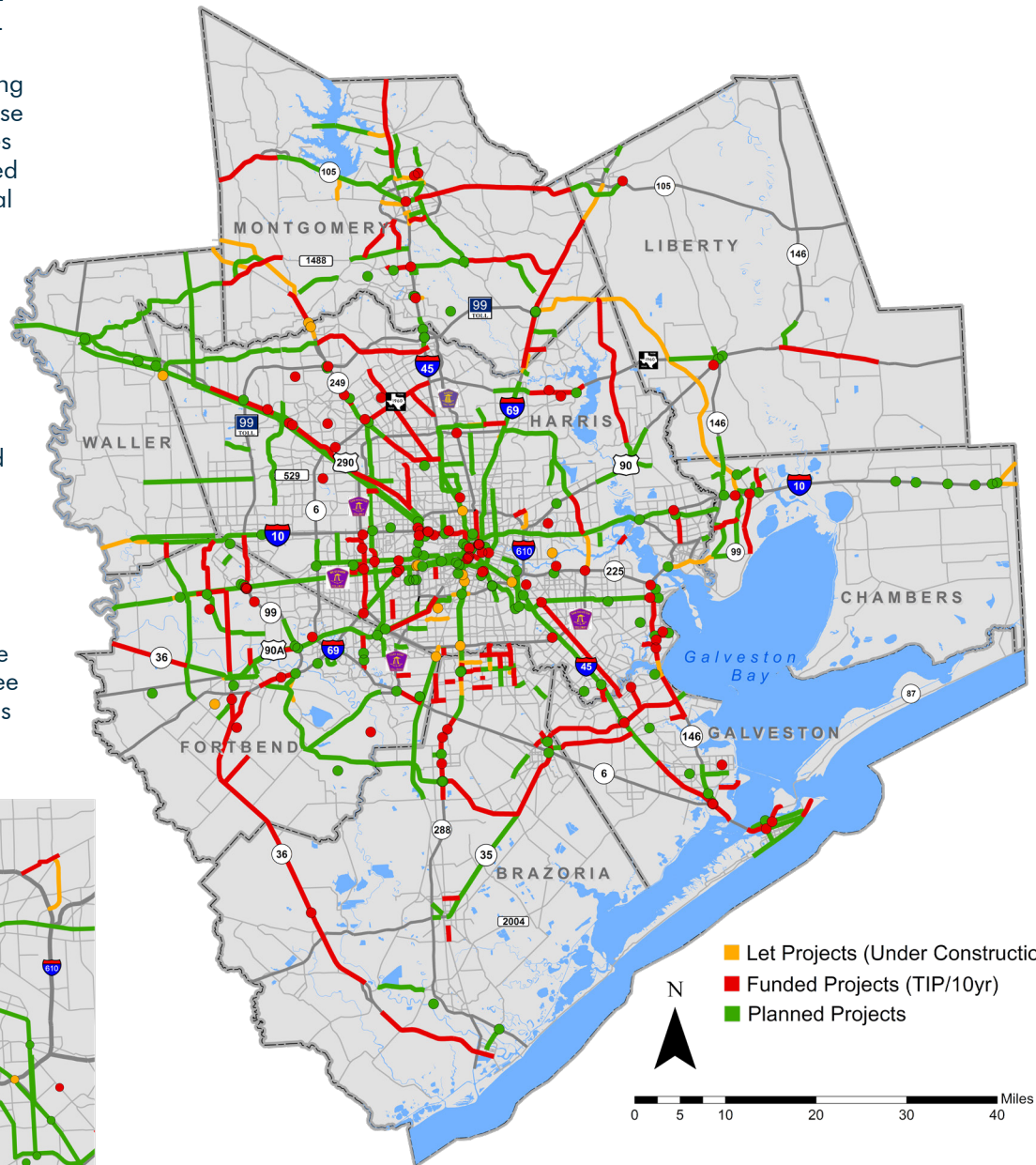


FINANCING THE 2045 RTP

Federal regulations require the 2045 RTP to be financially constrained. This means that projects and programs may be included in the plan only if funding can be identified for them. These funds must come from revenues that can be reasonably expected over the plan horizon. The fiscal reality is that federal and state revenues have gradually decreased in the last few years while the need for transportation expenditure has remained steady. The gap in funding has been bridged by local revenue sources. Without new revenue sources, state and federal revenues are projected to decrease in absolute and relative terms in the future.

The total estimated revenue available for the 2045 RTP is approximately \$147 billion while the total expenditure for the three 2045 RTP strategies combined is estimated at \$132 billion.

Map of 2045 RTP Projects



AIR QUALITY CONFORMITY

The H-GAC region is currently designated as a “nonattainment” area for federal ground-level ozone standards under the Clean Air Act. Consequently, the State must develop a plan demonstrating how emissions critical to the formation of ground-level ozone will be reduced to achieve designated federal air quality standards. This plan is known as the State Implementation Plan (SIP). The Clean Air Act requires that proposed transportation projects and air quality modeling be coordinated to ensure the Transportation Improvement Program (TIP) and the Regional Transportation Plan (RTP) are consistent with, or conform to, the Motor Vehicle Emission Budget (MVEBs) established in the SIP. Conformity is demonstrated when the projected regional emissions from mobile sources are less than the emissions budgets for mobile sources contained in the SIP.

ADDITIONAL PLANNING FACTORS

The Fixing America’s Surface Transportation (FAST) Act, signed into law in 2015, introduced new planning factors that are relevant to H-GAC’s long-range transportation plans.

Automated and Connected Vehicles

As the Houston-Galveston region’s transportation system nears its capacity limits, traffic congestion levels remain high despite billions of dollars of investments in new or expanded highways. To sustain regional mobility, emerging technologies like autonomous and connected vehicles (CAV) are being explored for their potential to address some of the problems facing the regional transportation system. H-GAC created a Connected and Automated Vehicles Interagency Workgroup to lead local governments and stakeholders in maximizing the benefits of CAV technology across the region. The MPO will support its partners in planning for sustainable integration of Connected and Automated Vehicles that move people and goods with greater safety, reliability, and efficiency.

Resiliency

According to the Federal Highway Administration’s definition, Resiliency is the “ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.” Due to its low-lying coastal geography and semi-tropical climate, the Houston-Galveston region is vulnerable to extreme weather events like heat, drought, tropical storms, and floods. H-GAC is incorporating resiliency in its planning program through its participation in several programs and initiatives that assess the vulnerability of the regional transportation system, address flood management in area watersheds, organize resiliency planning workshops, and explore strategies to control the impact of stormwater on transportation assets and property.

Travel and Tourism

Travel and tourism is a growing industry in the Houston-Galveston region. The metropolitan area attracts about 14.8 million visitors annually and generates about \$1.1 billion in local and sales tax revenues. Excellent and reliable transportation service is a fundamental requirement for the industry. Enhancing tourism and travel in transportation can be accomplished, in part, by improving the transit system and enhancing connectivity between places and between the transport modes.

