

# Chapter 2

## VISION, GOALS, PERFORMANCE MEASURES AND STRATEGIES

2045 RTP is a long-range plan centered around a shared regional vision: an aspirational statement about the desired future transportation system for the Houston-Galveston region. Five goals were chosen to actuate the vision, each of which were assigned performance measures that would indicate the progress made towards achieving the goal. 2045 RTP also identifies three strategies or investment tools which help local sponsors and decision-makers understand how their projects fit within the regional planning process, throughout the life of the plan. These items are discussed in the sections that follow.

### VISION

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

### GOALS

1. Improve Safety
2. Achieve and Maintain a State of Good Repair
3. Move People and Goods Efficiently
4. Strengthen Regional Economic Competitiveness
5. Conserve and Protect Natural and Cultural Resources

### PERFORMANCE MEASURES

2045 RTP associates each goal with quantifiable performance measures that can indicate the progress made towards achieving the goals. Performance measures were first crafted in response to MAP-21. The FAST Act, which followed, reinforced the role of national performance measures in the planning process and the Federal Highway Administration (FHWA) has promulgated final rulings on the subject.

H-GAC has adopted several targets for the federally mandated performance measures and applied them to guide the goals, strategies, and ultimately the investment decisions recommended in the 2045 RTP. The performance measures cover a wide range of metrics that include highway safety, pavement and bridge condition, system reliability, congestion, air quality and transit asset management. Although the federally mandated performance measures are new, H-GAC has used performance measures to evaluate the investment decisions in its previous transportation plans. The reasoning behind the selection of each performance measure, recent trends, and their targets are available in Appendix P. Figure 2-1 shows the relationship between the 2045 RTP vision, goals and performance measures.

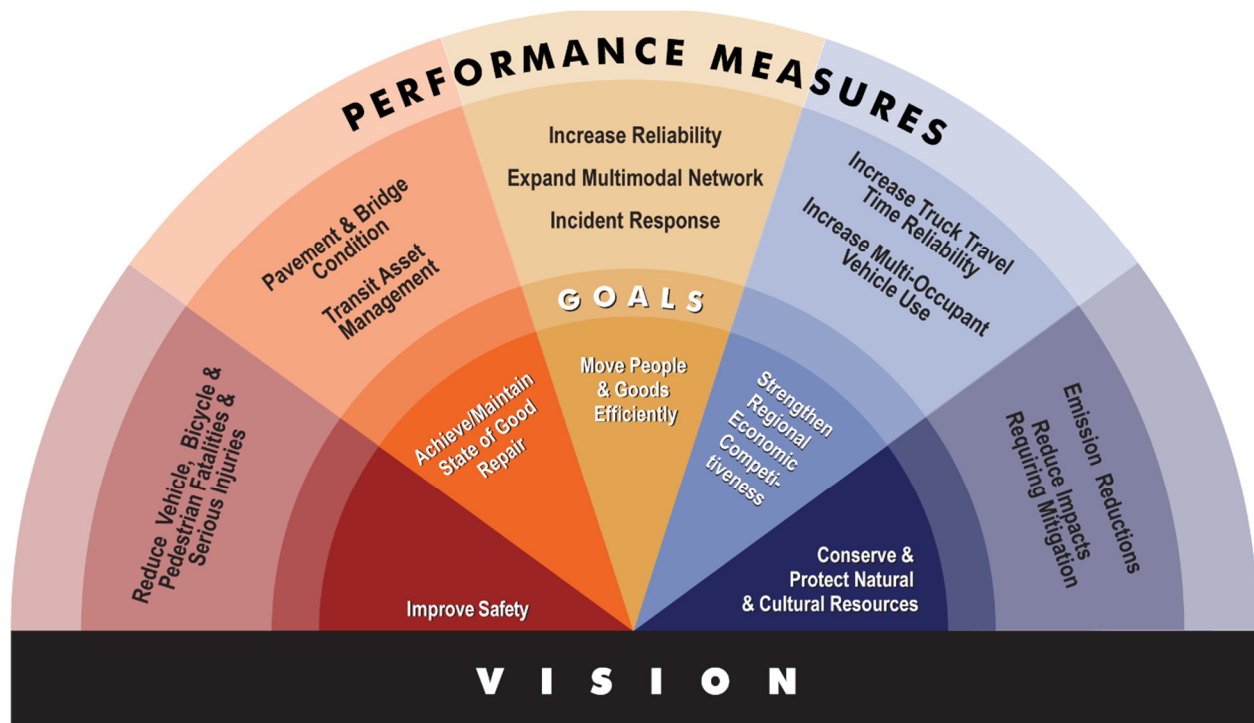


Figure 2-1: 2045 RTP Vision, Goals, and Performance Measures

## STRATEGIES

The 2045 RTP employs three strategies as implementation tools to realize the plan goals:

### MANAGE - [System Management and Operations]

- Maximize the efficiency and effectiveness of the transportation system through data, technology and policy solutions focused on reliability, continuity and the transparent dissemination of information.

### MAINTAIN - [Asset Management]

- Improve and preserve the condition of the existing transportation infrastructure at the least practicable cost through the application of sound asset management techniques to ensure a state of good repair.

### EXPAND - [Multimodal Network Capacity]

- Add capacity across all modes of travel with a focus on the interconnections between different networks and services that provide users with greater choices.

Table 2-1 illustrates the relationship between the goals, performance measures, and strategies of the 2045 RTP. Each strategy is evaluated by how effectively it addresses the associated goal and performance measures intended to quantify the outcome. The strategies to Manage (Improve System Management & Operations) and Maintain (Asset Management) both directly support all five of the 2045 RTP goals.

STRATEGIES				
GOAL	MANAGE [Improve System Management & Operations]	MAINTAIN [Asset Management]	EXPAND [Transportation Network Capacity]	PERFORMANCE MEASURE
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

Table 2-1: Relationship between 2045 RTP Strategies, Goals and Performance Measures

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Many projects considered by the 2045 RTP apply to more than one strategy. For instance, road widening projects which would be considered “transportation and multimodal network expansion” include extensive “state of good repair” investments. The total expenditure for the three strategies combined is an estimated \$132 billion. Figure 2-3 illustrates the amounts of the 2045 RTP expenditure by strategy. These expenditure estimates include allocation of project costs across the strategies shown, when appropriate.

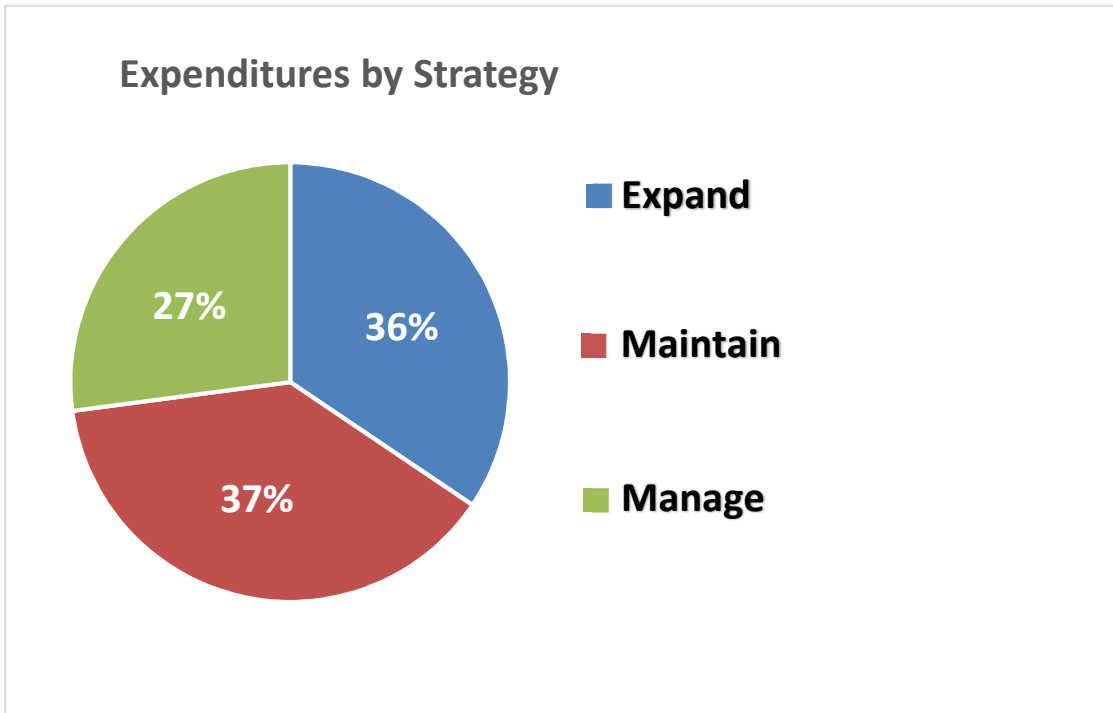


Figure 2-3: 2045 RTP Expenditure by Strategy

## STRATEGY 1: MANAGE

The Manage strategy directly supports all five goals of the plan and accounts for about 27% of the total 2045 RTP expenditures (Table 2-2). This strategy will implement programs and projects that address congestion and safety through the reduction of vehicle crashes, quick and safe removal of stalled vehicles, improved intersection operations, bottleneck alleviation, and a reduction in vehicular travel demand through increased use of transit and other alternate commute solutions.

MANAGE		
2045 RTP GOAL	IMPACT	PERFORMANCE MEASURE
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

Table 2-2: The Manage Strategy

System management is designed to make more efficient use of existing roadway facilities. A large amount of regional congestion is caused by roadway incidents that range from stalled vehicles and crashes to sports events and hurricane evacuations. Many of these circumstances can be addressed through the Manage strategy. H-GAC's Congestion Management Process (CMP) identifies effective tools which can be applied to meet the goals and performance measures of the RTP (See Appendix B). Examples of tools available and funded through the Manage strategy are listed in Table 2-3.

MANAGE	EXAMPLES
Safety	Traffic or facility improvements designed to improve safety
Intelligent Transportation Systems (ITS)	Technology-based improvements to data gathering or travel monitoring and reporting
Access Management	Improve access and efficiency of major roadways
Travel Demand Management	Programs such as new or improved transit services, car and vanpooling, telework and other strategies to reduce peak vehicular demand
Managed Lanes	Travel-time incentive for transit and other High-Occupancy Vehicles May include congestion or occupancy-based pricing

Table 2-3: Examples of Tools that Implement the Manage Strategy

An important benefit of the Manage strategy is that it achieves a reduction in overall vehicle usage, travel delay, and vehicle emissions detrimental to air quality without incurring the cost of constructing new transportation infrastructure. A reduction in vehicle use impacts would be realized by the more efficient use of the existing roadway and by travel demand management. The Manage strategy funds H-GAC's Commute Solutions program, which promotes alternate travel modes like transit, employer supported van and carpools, active transportation, and modified work schedules to decrease single occupant vehicle trips. More shared rides potentially reduce traffic congestion and improve air quality while providing cost and time savings for road users. Air quality is also improved through initiatives such as the Clean Cities/Clean Vehicles program which provides subsidies that promote the voluntary usage of cleaner burning fuels and engines.

The Manage strategy also enhances safety and travel reliability through projects that optimize signal timing and provide dynamic traffic alerts that can influence travel choices. This strategy would also reduce congestion costs and promote economic productivity by giving freight operators and other road users a more reliable sense of how long a certain route will take. Finally, the greater use of non-motorized transportation would decrease the wear on the transportation facilities and thereby increase their useable life.

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## STRATEGY 2: MAINTAIN

Maintaining a state of good repair for the bridges, roadways, transit facilities, railroads, and port facilities is a basic need for our region’s transportation system. The Maintain strategy directly supports all five 2045 RTP goals and accounts for about 37% of the total 2045 RTP expenditure (Table 2-4).

Keeping transportation facilities in good repair can be expected to bring several benefits. Better roads and bridges would mean less structural congestion and, therefore, reduced congestion costs for the road users. Proper maintenance also extends the usable life of the facilities and promotes safety for the travelling public at a fraction of the cost of constructing new infrastructure. Estimates for the 2045 RTP indicate an annual funding need of \$500 - \$700 million over the life of the plan to maintain the existing facilities.

MAINTAIN		
2045 RTP GOAL	IMPACT	PERFORMANCE MEASURE
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

Table 2-4: The Maintain Strategy

A review of the pavement conditions in Texas suggest that the ratios of the facilities in good, fair, and poor condition will remain relatively even in the short-run but experience gradual improvement over time. For roads in the Houston-Galveston region, TxDOT data suggests baseline ratings of 48% of interstate pavements are in good condition, 52% fair, and 0% in poor condition. Non-interstate pavements in the region have lower ratings reflecting 47% of pavements in good condition, 42% in fair, and 11% in poor condition.<sup>1</sup> For transit, the 2045 RTP estimates an annual funding need of \$800 - \$900 million over the life of the plan. Examples of tools available and funded through the Maintain strategy are listed in Table 2-5.

<sup>1</sup> 2011 TxDOT Condition of Texas Pavements: Pavement Management Information System Annual Report. Chapter 2: Vision, Goals, Performance Measures & Strategies  
Revised April 10, 2019

MAINTAIN	EXAMPLES
Roadway	Reconstruction, rehabilitation, or repaving of roadways and access facilities
Bridges	Upgrade facilities to new standards or rehabilitate for future use
Transit Facilities	Improve bus stops, transit centers, guideways, stations, or vehicle replacement or repair
Pedestrian Facilities	Upgrade to current design guidelines and ADA requirements

Table 2-5: Examples of Tools that Implement the Maintain Strategy

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### STRATEGY 3: EXPAND

The Expand strategy is appropriated about 36% of total 2045 RTP estimated expenditures and directly supports two of the 2045 RTP goals (Table 2-6). The strategy includes adding travel capacity on all modes of transportation. Funding for this strategy is based on recommendation by the congestion management process and is driven by 2045 RTP goals and performance measures. The Expand strategy directly supports the system efficiency and economic competitiveness goals of the 2045 RTP and includes some of the most significant, visually obvious, and long-lasting investments in the plan. According to plan recommendations, the most intensive expansion corridors will be Beltway 8, the Grand Parkway, I-10 West, I-45 South, US 290, SH 35, SH 36, and SH 146.

EXPAND		
GOAL	IMPACT	PERFORMANCE MEASURE
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

Table 2-6: The Expand Strategy

Transit system expansion would extend frequent high capacity service to the two busiest regional airports, as well as construct new commuter lines to northwest, west, and southwest suburban centers. New express bus service to Liberty and Chambers counties are also included. Bicycle and pedestrian system expansion would operate in line with the Draft Regional Active Transportation Plan (see Appendix H). Locally, many roadway expansion needs will be met by cities and counties, as well as private developers. Tolled roads have and will continue to provide critical additional roadway capacity. The 2045 RTP projects that involve major added capacity improvements are listed in Table 2-7.

MAJOR ADDED CAPACITY IMPROVEMENTS	
Beltway 8	\$ 92 Million
Grand Parkway	\$ 805 Million
I-10 West	\$ 661 Million
Thoroughfare Development	\$ 6.4 Billion
Light Rail and Bus Transit	\$ 11 Billion
Pedestrian/Bicycle Facilities	\$ 1.6 Billion

Table 2-7: Major Added Capacity Improvements

The 2045 RTP recommends additional travel lanes on or extension of some of the most-travelled toll roads: Sam Houston Tollway (South and East), Westpark, IH 10 E, and IH 45 Gulf HOV. The RTP also recommends the completion or construction of new toll corridors including US 290 (partial toll/ managed lanes), SH 249 Toll Road (Montgomery County), SH 35, IH 45 North, and the remaining segments of the Grand Parkway. It should be noted that some of these projects were identified in previous plans and are continued as part of the recommendations for the 2045 RTP update.

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