

# 2016-2017

## Unified Planning Work Program

for the Houston-Galveston  
Transportation Management Area



Adopted  
**July 24, 2015**

Updated: Amendments 1-13  
May 26, 2017



# Resolution

## NO. UPWP 16/17-1

ADOPTING THE 2016-2017 UNIFIED PLANNING WORK PROGRAM FOR TRANSPORTATION PLANNING BY THE TRANSPORTATION POLICY COUNCIL FOR THE HOUSTON-GALVESTON TRANSPORTATION MANAGEMENT AREA AND CERTIFYING COMPLIANCE WITH FEDERAL PLANNING REQUIREMENTS.

**WHEREAS**, the U.S. Department of Transportation, prior to the funding of any planning or capital grant project within an urban region, requires the preparation and adoption of a Unified Planning Work Program (UPWP) describing transportation planning activities to be accomplished during FY 2016-2017; and

**WHEREAS**, the 2016-2017 Unified Planning Work Program addresses the needs for planning Administration/Management, Data Development and Maintenance, Short Range Planning, the Metropolitan Transportation Plan, and Special Studies, identifying agency responsibilities by work task and anticipated funding requirements; and

**WHEREAS**, the Transportation Policy Council certifies its compliance with federal planning requirements as outlined in the introduction of the 2016-2017 Unified Planning Work Program and in accordance with 23 CFR Part 450.334 and 450.220; and

**WHEREAS**, the Transportation Policy Council certifies its compliance with federal and state statutes in regards to debarment, lobbying, procurement practices and ethical practices; and

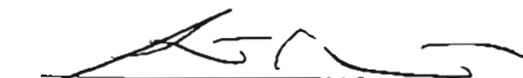
NOW, THEREFORE, BE IT RESOLVED BY THE TRANSPORTATION POLICY COUNCIL FOR THE HOUSTON-GALVESTON TRANSPORTATION MANAGEMENT AREA THAT:

- The 2016-2017 Unified Planning Work Program (UPWP) for Transportation Planning is hereby adopted; and
- Cost overruns of up to 25 percent at the activities task level are allowable, provided that the totals as shown in the Funding Summary on Page 6-1 of the 2016-2017 UPWP are not exceeded.

PASSED AND APPROVED this 24th day of July 2015, at a regularly called meeting of the Transportation Policy Council for the Houston-Galveston Transportation Management Area.

APPROVED:

ATTEST:

  
Stephen Costello, Chairman  
Transportation Policy Council

  
Tom Reid, Secretary  
Transportation Policy Council

**2016-2017  
Unified Planning Work Program  
for the Houston-Galveston  
Transportation Management Area**

**ADOPTED  
July 24, 2015**

**Amended**

November 20, 2015  
January 22, 2016  
February 26, 2016  
March 18, 2016  
April 22, 2016  
May 27, 2016  
July 22, 2016  
September 23, 2016  
October 28, 2016  
December 16, 2016  
March 24, 2017  
April 28, 2017  
May 26, 2017

## **DISCLAIMER**

This report was prepared in cooperation with the Texas Department of Transportation, the U.S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration. The contents of this report reflect the views of the authors who are solely responsible for the opinions, findings, and conclusions presented herein, and do not necessarily reflect the views or policies of the aforementioned agencies, or any other agencies, organizations, or persons that contributed to the report or that are mentioned or listed in the report.

## TABLE OF CONTENTS

<b><u>Section</u></b>	<b><u>Page</u></b>
<b>INTRODUCTION</b>	<b>i-5</b>
<b>TASK I – Program Management</b>	<b>1-1</b>
Subtask 1.1 – Program Support/UPWP	1-2
Subtask 1.2 – Public Involvement and Outreach Program	1-4
Task I Funding Table	1-6
<b>TASK II – Data Development and Maintenance</b>	<b>2-1</b>
Subtask 2.1 – Socioeconomic Data and Models	2-2
Subtask 2.2 – Physical Features, Data, and Modeling Support	2-3
Task II Funding Table	2-6
<b>TASK III – Short Range Planning</b>	<b>3-1</b>
Subtask 3.1 – Transportation Improvement Program	3-3
Subtask 3.2 – Short-Range Transit Planning	3-4
Subtask 3.3 – Regional Operations/Intelligent Transportation Systems	3-7
Subtask 3.4 – Safety Planning	3-9
Task III Funding Table	3-10
<b>TASK IV – Long Range Planning</b>	<b>4-1</b>
Subtask 4.1 – 2040 Regional Transportation Plan	4-5
Subtask 4.2 – Air Quality Planning/A.E.R.C.O.	4-6
Subtask 4.3 – Bicycle/Pedestrian System Planning	4-8
Subtask 4.4 – Livable Centers	4-10
Task IV Funding Table	4-12
<b>TASK V – Special Planning Studies</b>	<b>5-1</b>
Subtask 5.1 – Major Corridor Studies	5-2
Subtask 5.2 – Evacuation Planning	5-3
Subtask 5.3 – Multimodal Initiatives	5-4
Task V Funding Table	5-6
<b>FUNDING SUMMARY – 2016-17 UPWP</b>	<b>6-1</b>
<b>State and Locally Funded Activities</b>	<b>7-1</b>

**APPENDICIES**

<b>Appendix A – TPC &amp; TAC Membership</b>	<b>A-1</b>
<b>Appendix B – Maps of the Houston-Galveston TMA &amp; UZA</b>	<b>B-1</b>
<b>Appendix C – Debarment Certification</b>	<b>C-1</b>
<b>Appendix D – Lobbying Certification</b>	<b>D-1</b>
<b>Appendix E – Certification of Compliance</b>	<b>E-1</b>
<b>Appendix F – Certification of Internal Ethics and Compliance Program</b>	<b>F-1</b>
<b>Appendix G – Public Outreach for 2016-17 UPWP</b>	<b>G-1</b>
<b>Appendix H – Transportation and Air Quality Acronyms and Phrases</b>	<b>H-1</b>

# INTRODUCTION

## 2016-2017 UNIFIED PLANNING WORK PROGRAM

### A. PURPOSE

The *2016-2017 Unified Planning Work Program* (UPWP) describes the transportation plans and programs and the transportation-related air quality planning activities that will be conducted during Fiscal Years 2016 and 2017 (10/01/15 - 09/30/17) regardless of funding sources or agencies conducting these activities. Through the development of the UPWP, changes in regional transportation planning priorities are identified. In addition, the role of the Houston-Galveston Metropolitan Planning Organization (MPO) for the Houston-Galveston Transportation Management Area (TMA) is documented.

The process of operating, maintaining, and improving the region's surface transportation system is complex and demands ongoing regional planning efforts. Many of the activities described in this document support the collaborative and coordinated decision-making process between state and local government agencies, transportation providers, shippers, and carriers of goods, and the residents of the region. Through the cooperation of these stakeholders, the products of these planning efforts will provide the region with greater mobility benefits. The following five tasks document the transportation planning activities in the TMA in 2016-2017:

- **Task I – Administration** covers the administrative support activities such as financial management, contract management, public outreach, and the general management of the MPO.
- **Task II – Data Development and Maintenance** covers the collection, maintenance, and analysis of transportation data. These activities include the development of socio-economic forecasts and travel demand models to determine where future transportation investments will be made.
- **Task III – Short Range Planning** addresses planning for activities taking place within a three- to five-year timeframe, including the management of the Transportation Improvement Program (TIP), the provision of transit services outside of the METRO service area, Intelligent Transportation Systems development, and Safety Planning.
- **Task IV – Long Range Planning** covers planning activities for the long-term including the update of the *2040 Regional Transportation Plan*, air quality planning, bicycle and pedestrian facilities, and the promotion of sustainable development.
- **Task V – Special Studies** cover other planning issues and studies including major corridor studies, hurricane evacuation planning, and freight planning.

# H-GAC 2016-17 Unified Planning Work Program

---

The Moving Ahead for Progress in the 21st Century Act (MAP-21) requires the consideration of eight factors in the metropolitan and statewide planning processes listed in 23 USC 134(h). Below lists how the MPO addresses these factors and how they have been programmed:

**1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;**

- *Transportation Improvement Program (TIP) project selection criteria assigns benefits to projects that: a) support/improve port operations, b) remove bottlenecks & fill gaps on existing system that inhibit the movement of people and goods, and c) provide improved access between activity centers.*
- *The Regional Transportation Plan (RTP) focuses on strategic corridor plans that will improve the movement of people and goods within and through the region.*
- *MPO supports activities of the Gulf Coast Freight Rail District (GCFRD) that is seeking to improve the movement of freight within and through the region by reducing conflicts with personal vehicular travel.*
- *MPO supports transit service activities that foster urban redevelopment and improve access around transit stations.*

**2. Increase the safety of the transportation system for motorized and non-motorized users;**

- *TIP provides funding for improved bicycling & pedestrian facilities.*
- *RTP focuses on identification of crash hot spots and strategies to reduce crashes.*
- *MPO convenes a Regional Safety Council to address transportation safety in the region and engages in various safety-related initiatives.*

**3. Increase the security of the transportation system for motorized and non-motorized users;**

- *TIP provides funding for improved lighting in and around transit centers*
- *RTP supports connections at port entrances and exits that facilitate enhanced security*
- *MPO participates in emergency preparedness and evacuation activities initiated by state and local governments*

**4. Increase the accessibility and mobility of people and for freight;**

- *TIP project selection criteria assigns benefits to projects that: a) support/improve port operations, b) remove bottlenecks & fill gaps on existing system that inhibit the movement of people and goods, and c) provide improved access between activity centers.*
- *RTP focuses on strategic corridor plans that will improve the movement of people and goods within and through the region.*

**5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;**

## H-GAC 2016-17 Unified Planning Work Program

---

- *MPO has been engaged in a Subregional Planning initiative designed to link local land use goals with transportation investments.*
  - *MPO has developed geographic information system (GIS) layers of regional environmental assets. Using these new tools, the MPO will be able to identify and address potential environmental and/or EJ/Title VI issues prior to the official study process as well as identify the most sensitive regional locations to planning partners and project sponsors.*
- 6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;**
- *The Livable Centers initiative designed to improve access and connectivity to and around transit stations.*
  - *The TIP and RTP support projects such as the downtown intermodal terminal that will link a variety of modes in one station.*
  - *The MPO engaged in discussions with stakeholders regarding opportunities to reduce conflicts between pedestrians, vehicles and passenger and freight rail activities.*
  - *The MPO supports regional vanpooling, carpooling and telework initiatives.*
  - *The TIP provides funding for transit implementations and studies.*
- 7. Promote efficient system management and operation; and,**
- *The Congestion Management Process (CMP) focuses on identifying non-added capacity alternatives that will improve traffic flow and safety for motorists.*
  - *The RTP includes an expanded managed lane system to derive improved efficiency from new capacity projects.*
  - *The TIP provides funding for expansion of traffic management systems throughout the region.*
  - *Operations efforts, such as Intelligent Transportation Systems (ITS) Planning and Incident Management, promote lower-cost, non-added capacity alternatives for improving traffic flow*
- 8. Emphasize the preservation of the existing transportation system.**
- *Intelligent Transportation Systems (ITS) Planning and the development of Incident Management activities address alternatives that maximize the efficiency of the current system.*
  - *The MPO works with the state to identify major reconstruction needs over the life of the plan.*

As part of MAP-21 legislation, an increased emphasis is placed on performance-based planning and programming in order to increase accountability and transparency in regards to transportation investments. This includes the requirement that MPOs establish performance measures in conjunction with the following seven national goals outlined in U.S.C. 23 Sec 150(c):

1. **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. **Infrastructure condition.** - To maintain the highway infrastructure asset system in a state of good repair.

# H-GAC 2016-17 Unified Planning Work Program

---

3. **Congestion reduction.** - To achieve a significant reduction in congestion on the National Highway System.
4. **System reliability.** - To improve the efficiency of the surface transportation system.
5. **Freight movement and economic vitality.** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. **Environmental sustainability.** - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
7. **Reduced project delivery delays.** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

H-GAC, in conjunction with its update of the 2040 RTP, will review and reassess performance measures to reflect the seven national goals. FHWA is currently developing guidance for MPOs to conduct performance-based planning and programming, which will be utilized along-side guidance from TxDOT to ensure consistency with statewide programming.

MPOs must also develop a public involvement process that provides complete information, timely notification, and public access to the planning process. H-GAC developed and adopted its Public Participation Plan (PIP) in 2007, which was updated in November 2012. The intent of the plan is to create a transportation planning process that is accessible, inclusive, and proactive. The plan is designed to educate and inform the public about transportation and related air quality issues, and to provide the public with opportunities to contribute their ideas and opinions early and often throughout the planning process.

## **B. DEFINITION OF SERVICE AREA**

The Houston-Galveston Area Council has been designated by the Governor of Texas to serve as the Metropolitan Planning Organization (MPO) for transportation planning in the urbanized region that consists of Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties. This eight-county TMA includes four U.S. Census-designated urbanized areas with populations greater than 50,000 (the Houston Urbanized Area, the Texas City/La Marque Urbanized Area, The Woodlands Urbanized Area, and the Angleton/Lake Jackson Urbanized Area), with an estimated 5.9 million people in 2010. Appendix B contains a map of the Houston-Galveston TMA.

## **C. ORGANIZATION and STAKEHOLDERS**

The Transportation Policy Council (TPC) is the policy-making board for the MPO. Its twenty-eight (28) voting members are responsible for the development and approval of transportation plans and programs within the TMA. Membership on the TPC consists of chief elected officials

## H-GAC 2016-17 Unified Planning Work Program

---

and their designated alternates from the seven major cities (over 50,000 in population) and each of the eight counties within the TMA. In addition, Harris, Brazoria, and Montgomery counties each have an at-large city representative appointed by the H-GAC Board of Directors. The H-GAC Board of Directors also appoints one member to the TPC to represent regional concerns. The TPC appoints one representative for “Other Transportation Interests” that would otherwise not be formally represented. The Texas Department of Transportation (TxDOT) has two representatives, one from each of their two districts in the TMA and the Metropolitan Transit Authority of Harris County (METRO) has one representative. Current TPC membership is listed in **Appendix A**.

The TPC created a standing Technical Advisory Committee (TAC) to assist with the technical aspects related to the development of the RTP; the TIP; the Regional Bicycle and Pedestrian Plan; Major Corridor Studies; and other transportation programs and plans. Its membership consists of thirty-eight (38) transportation planning and air quality experts from agencies throughout the TMA, as well as representatives from various advocacy groups with an interest in transportation decisions. The TAC exists to assure that transportation-planning decisions are considered in their broadest context. The TAC currently has established six (6) subcommittees to assist with specific program activities. These are: Regional Transportation Plan (RTP) Subcommittee, Transportation Improvement Program (TIP) Subcommittee, Transportation Demand Management (TDM) Implementation Subcommittee, Regional Transit Coordination Group, Operations Task Force, and the Pedestrian and Bicycle Subcommittee. Current TAC membership can also be found in **Appendix A**.

In 1991, the Regional Air Quality Planning Committee (RAQPC) was specifically created to work with H-GAC staff and other governmental agencies on coordination of regional air quality programs to meet federal clean air standards and to advise the H-GAC Board of Directors and the TPC on air quality policy. This committee is composed of members representing a variety of public agencies, private industry, business, local health organizations, and citizen and environmental groups. The membership list is available upon request.

In 2005, the Regional Safety Council (RSC) was set up by the TPC to provide recommendations for improving transportation safety in our region. Its membership consists of professionals with backgrounds in transportation, law enforcement, emergency medical service, injury prevention, public health, trucking, railroads, insurance, shipping, safety advocacy, and safety research.

### **D. PRIVATE SECTOR INVOLVEMENT**

The private sector is actively involved in planning efforts outlined in the 2016-2017 UPWP. H-GAC utilizes private sector contractors and consultants extensively to execute many of its planning responsibilities. In addition, the private sector participates in H-GAC’s transportation planning policy structure. Industry interests and business groups have representatives serving on the Technical Advisory Committee, the Regional Air Quality Planning Committee, the Regional Safety Council, and their respective subcommittees.

## H-GAC 2016-17 Unified Planning Work Program

---

Private businesses also serve on steering committees, which provide guidance for various transportation-related plans & studies. Transportation Management Organizations (TMOs) also provide opportunities for private sector involvement related to ridesharing, vanpooling, and other trip reduction activities. H-GAC provided start-up funds for area TMOs, which assist employers in implementing transportation demand management (TDM) strategies such as carpooling and vanpooling.

H-GAC staff, in conjunction with regional partners, is working to develop a regional incident management approach that engages the towing community to assist in removing disabled vehicles from the freeway in order to ensure the safety of involved patrons, prevent secondary crashes, and restore freeway flow in a rapid manner.

H-GAC staff continues to provide technical assistance to private and public transit and para-transit operators in the planning and delivery of expanded transit services in coordination with METRO and other regional public transportation providers. Staff will continue to work through the FTA 5307 and FTA 5311 programs to expand the public transportation services through a public/private partnership agreement.

### **E. PLANNING ISSUES AND EMPHASIS AREAS**

**2040 Regional Transportation Plan** – The MPO will be completing amendments to the 2040 Regional Transportation Plan (RTP) in FY 2016-17. Key focus areas for the 2040 RTP include the connection between transportation and land use, an analysis of regional transit needs and opportunities, environmental considerations and implications for project development, an enhanced congestion management system, and a consideration of the growth in regional freight activity and the related infrastructure needed to improve regional multi-modal mobility. In addition, emphasis will be placed on the development of performance measures in response to MAP-21, in order to ascertain the benefits of the region's improvements.

**Air Quality Planning** - Air quality planning efforts are aimed at finding control strategies and policies to ensure that on-road mobile sources in the eight-county Houston-Galveston-Brazoria nonattainment area comply with federal pollution standards and State Implementation Plan (SIP) requirements. Activities include:

1. Initiating technical and policy analyses of control strategies for the TMA's ozone SIP;
2. Participating with regional leaders, business and industry, environmentalists, and federal, state and local governments to develop/review clean air strategies, modeling, processes, and technologies;
3. Conducting conformity analyses, as needed by the TIP, RTP and/or SIP timelines;
4. Defining the potential regional impacts of implementation of current and future standards, as well as the potential sanction ramifications of the current eight-hour ozone nonattainment designation;
5. Participating in the establishment of emission budgets for transportation conformity;

# H-GAC 2016-17 Unified Planning Work Program

---

6. Aiding in the implementation of SIP strategies through demonstration projects and contractual programs; and
7. Working on flexible and alternative attainment plans.

**Safety Planning** – H-GAC will continue to assess safety data as it is provided to determine the problem areas in terms of traffic safety. Staff will continue work on a regional safety plan based on the data assessments and provide potential countermeasures for consideration. H-GAC will also continue to provide technical support on traffic safety issues, including the support of various outreach initiatives to promote safer driving.

**Freight Planning** – H-GAC will work on addressing the recommendations of the Regional Goods Movement Study. Freight facilities and services are strongly linked to regional economic competitiveness and quality of life and, from a transportation perspective, freight shipments continue to grow steadily across all modes. Planning for freight is also an effective means of addressing safety, security, environmental, and air quality issues. A major objective of the freight program will be to initiate and sustain meaningful outreach to the local freight community and to build awareness and expertise among planners and the general public. A freight advisory committee will be the focal point of this effort.

**Livable Centers** – H-GAC will continue to provide outreach, training, and technical assistance to local governments and private developers to help achieve an improved connection between development patterns and the transportation system. H-GAC's Livable Centers program provides local governments with opportunities to assess new strategies and utilize best practices in land use/transportation coordination. The Livable Centers programs helps to create quality, mixed-use places that provide multi-modal transportation options through studies and implementation projects.

**Bicycle and Pedestrian Planning** – H-GAC will continue support for the implementation of the Transportation Policy Council's adopted pedestrian and bicycle policy goals and recommended actions. This includes maintenance of the Regional Bikeway Plan, provision of technical support to local governments, and the hosting of training sessions for best practices.

In addition, The USDOT, citing renewed focus on transportation planning brought about by MAP-21, issued a set of additional Planning Emphasis Areas to be identified within the UPWP. Below lists how the MPO addresses these Emphasis Areas and how they have been programmed:

## **1. MAP-21 Implementation: Transition to Performance Based Planning and Programming**

- **Subtask 3.4** – Staff conducts an annual assessment of crash statistics to assess the regional crash experience and utilize the information for planning efforts to improve regional traffic safety (Product 3.4.a5)
- **Subtask 4.1** - the update of the 2040 Regional Transportation Plan (RTP) will continue to assess potential performance measures, which will be utilized in project selection criteria and project prioritization to link RTP goals and objectives (Product 4.1.a1).
- **Subtask 4.1** – The Congestion Management Process calls for tracking and updating of congestion indices, which will play a role in assessing system performance and for project prioritization in the RTP process (Product 4.1.d2).

## H-GAC 2016-17 Unified Planning Work Program

---

- **Subtask 5.3** - calls for the development of freight performance measures to gauge system conditions and use, evaluate transportation programs and projects, and help decision-makers to allocate limited resources (Product 5.3.a6).
2. ***Models of Regional Planning Cooperation: Promote cooperation and coordination across MPO boundaries and across State boundaries where appropriate to ensure a regional approach to transportation planning***
- The Houston-Galveston MPO has representation from TxDOT's Beaumont District, which covers the Beaumont MPO, as well as two counties within the Houston-Galveston MPO. The MPO also coordinates with the Beaumont-Port Arthur MPO via the Texas Association of MPOs and related statewide efforts and is exploring additional opportunities to enhance this collaboration.
  - **Subtask 4.2** – H-GAC Air Quality Program staff meet with their NCTCOG counterparts to share information on regional air quality programs, including vehicle replacement and commute alternative programs.
  - **Subtask 5.2** - Evacuation Planning activities include the planning and coordination of evacuation activities stemming from the Houston-Galveston area to the San Antonio, Austin, and Dallas/Fort Worth regions.
3. ***Ladders of Opportunity: Access to essential services – as part of the transportation planning process, identify transportation connectivity gaps in access to essential services.***
- **Subtask 3.2** - Short-Range Transit Planning activities include the planning and coordination of public transportation projects that operate in underserved areas of the region, and provide service to low-income, physically and mentally-challenged, and elderly populations that may not have access to an automobile
  - **Subtask 4.1** - The RTP addresses the incorporation of Environmental Justice to identify socially and economically-disadvantaged areas of the region, their proximity to jobs, and access to transit options (Product 4.1.a1).
  - **Subtask 4.3** - Bicycle/Pedestrian System Planning addresses non-motorized options of travel, including the identification of facilities and proposed improvements to facilities to allow those users safe access to their destinations.

# **TASK I**

## **PROGRAM MANAGEMENT**

The purposes of the activities listed under Task 1.0 are to provide administrative support to the transportation planning process for the eight-county Houston-Galveston Transportation Management Area (TMA) and to facilitate interagency cooperation and coordination.

### **OBJECTIVES:**

- To continue implementation of a Comprehensive, Continuing and Coordinated, or "3-C," regional transportation planning process per 23 USC 134(k).
- To maintain the operations of the MPO, including the fiscal management, handling of personnel matters, and the procurement of equipment and supplies required for operations.
- To develop public information exchange and education programs that increase public interest and participation in ongoing transportation and air quality planning activities.
- To promote public involvement and communication in "best practices" for land use/transportation interactions.
- To conduct proactive public outreach in preparation for the 2040 Regional Transportation Plan (RTP) Update including: follow-up and feedback to concerned citizens regarding comments provided;
- To obtain and maintain computer hardware, software, technical support, and training necessary to maintain transportation and related air quality planning activities.

### **EXPECTED PRODUCTS:**

- New 2-year Unified Planning Work Program (UPWP) for FY 2018-19.
- Technical assistance and support for committees and public meetings
- Public information materials and interaction in a variety of formats, including emails, letters, brochures, websites, surveys, videos, social media postings, etc.
- Continued production of the MobilityNOW TV series for public information on regional transportation issues.
- Considerable public outreach for the development of the 2040 RTP Update.

### **PREVIOUS WORK**

- A total of 104 new consultant contracts were awarded for various projects, such as Clean Cities/Clean Vehicles; Commuter Pilot Projects; Corridor Studies; and Transit Planning. In addition, there were 25 consultant contract amendments regarding time extension, budget increases and scope modifications.
- Staff submitted semi-annual "Uniform Report of DBE Awards or Commitments and Payments" to TxDOT, PTC every 6 months.
- As required by Section 49 Code of Federal Regulations Part 26, H-GAC staff developed a 20% goal for the participation of Disadvantaged Business Enterprises in Department of

## H-GAC 2016-17 Unified Planning Work Program

---

Transportation assisted contracts for 2014-2016. The goal was available for public inspection and comments for forty-five days.

- Prepared meeting agendas, meeting notices, minutes and agenda item background materials for TPC and TAC meetings during the 2014-2015 fiscal year, as well as annual workshops for TPC and TAC members in 2014.
- Provided other administrative support to the TPC and TAC as necessary.
- Director, Alan Clark, serves as a board member for AMPO and actively participates in their meetings. Several H-GAC staff members serve on TRB and AMPO committees related to planning and travel demand modeling.
- Staff continues to maintain the UPWP. Amendments were approved by TPC in December 2013, March 2014, April 2014, July 2014, November 2014, and April 2015.
- Produced 24 editions of the Vision transportation e-newsletter as of April 2015.
- Produced and distributed 2013 and 2014 annual Regional Mobility Report.
- Continued developing H-GAC YouTube channel to distribute transportation-related video materials.
- Continued developing [www.mobilitynow.tv](http://www.mobilitynow.tv) website and brand identity to promote the “Mobility Now” TV Show.
- Four episodes of “Mobility Now” TV Shows taped in the Houston-Galveston Region: 1) The Art of Transportation (Four decades of transportation planning), 2) 2040 Regional Transportation Plan 3) US 59/I 69 Congestion Mitigation Plan 4) Bicycle Commuting and Infrastructure. All episodes were broadcast on HTV, other municipal channels in the region, and are also available on H-GAC’s YouTube channel.
- Six Spanish-language shows were produced including a variety of educational interviews during 2014-2015. All episodes were broadcast on HTV and other open television channels. The shows are available on H-GAC's YouTube channel.
- Staff continues to maintain and improve transportation websites.
- Staff participates regularly in TEMPO meetings to discuss common MPO issues throughout the state. Staff has been involved in discussions with FHWA regarding Vehicle-to-Infrastructure implementation (V2I) guidance development. Staff is part of statewide discussions on TxDOT’s Strategic Highway Safety Program (SHSP), including participation in the Impaired Driving Workgroup and the Motorcycle Safety Coalition.

### **SUBTASK 1.1 Program Support / Unified Planning Work Program (MPO)**

This subtask includes all administrative support for the MPO planning program in general, including the financial management of the MPO’s operations, contract management, departmental reporting, the provision of technical assistance to member agencies, and participation in state and national organizations involved in transportation planning and development.

# H-GAC 2016-17 Unified Planning Work Program

---

This subtask also includes the development and maintenance of the Unified Planning Work Program (UPWP), which describes the transportation plans and programs and the transportation-related air quality planning activities conducted during the fiscal year(s) regardless of funding sources or agencies conducting these activities.

## **PRODUCTS:**

### **Program Support & Administration**

- 1.1.a1** Manage contracts and agreements between the MPO and participating agencies or subcontractors.
- 1.1.a2** Maintain financial records for departmental contracts and ensure payment of invoices.
- 1.1.a3** Maintain the federal certification of the Houston-Galveston Transportation Management Area's transportation planning process, related requirements associated with the budgeting and expenditures of Federal, State, and local funding, including the Annual Performance & Expenditure Report (APER), the Disadvantaged Business Enterprise goal development, and self-certification assurances.
- 1.1.a4** Provide technical assistance to local governments, public agencies, other qualified grant sponsors, and staff regarding federal grant applications, TRACS, transportation planning activities, and transportation management issues.
- 1.1.a5** Provide technical assistance to the Transportation Policy Council (TPC), the Technical Advisory Committee (TAC), and other committees and subcommittees. Technical assistance includes preparing meeting materials, meeting notices, maintaining meeting records, an annual training workshop for the respective members, and other assistance as directed. Provide food and non-alcoholic beverages, pending TxDOT approval, at selected meetings and events when deemed appropriate.
- 1.1.a6** Conduct non-lobbying participation in the Association of Metropolitan Planning Organizations (AMPO), Texas Metropolitan Planning Organizations (TEMPO), National Association of Regional Councils (NARC), Texas Association of Regional Councils (TARC), Transportation Research Board (TRB), American Association of State Highway and Transportation Officials (AASHTO), ITS Texas, and other organizations that enhance the planning process. This may include agency memberships in these organizations (individual memberships are not a reimbursable expense). This activity includes expenses for travel and employee development.
- 1.1.a7** Provide analysis of State and federal laws, regulations, and legislation for TPC and TAC members, and local government officials to aid them in the application of regional transportation policy strategies.
- 1.1.a8** Maintain historical data, publications, and map warehousing/archive libraries, along with an online-query system for public research and access to historical information.

# H-GAC 2016-17 Unified Planning Work Program

---

- 1.1.a9** The acquisition of supplies, services, software, and equipment to support MPO operations. Equipment and software purchases over \$5,000 per unit require prior State and Federal approval.
- 1.1.a10** Acquire legal defense/advice with prior State and Federal approval in accordance with 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87) for conformity determinations and other issues as determined to be necessary and reasonable to carry out the metropolitan planning process per 23 CFR 420.113.

## *Unified Planning Work Program Development*

- 1.1.b1.** Maintain the 2016-2017 Unified Planning Work Program (UPWP), reflecting current plans, programs, and regional priorities, by amendments approved by the TPC, TxDOT, FHWA, and FTA.
- 1.1.b2.** Develop and adopt the 2018-2019 Unified Planning Work Program per schedule determined by staff in coordination with other transportation partners.

## **SUBTASK 1.2 Public Involvement and Outreach Program**

H-GAC has an ongoing, inclusive, and active public involvement process for transportation planning. The goals and objectives of the public involvement process are described in the Public Participation Plan amended in November 2012, with the primary objective to provide timely, accurate, and complete information to the public on important transportation issues and solicit feedback as appropriate. Fulfilling this objective requires the continuous development of visualization techniques, educational materials, transportation websites, newsletters, and other public outreach activities.

### **PRODUCTS:**

#### *Public Involvement*

- 1.2.a1** Conduct public outreach and provide support for public meetings for the RTP, TIP, Air Quality, and other significant plans. This includes publishing legal notices, press releases, and advertisements, conducting public meeting arrangements, slide presentation production, and development of educational materials for distribution at these meetings.
- 1.2.a2** Continue to publicize H-GAC's transportation activities via the publication and distribution of newsletters, management of the Transportation Department's website, the holding of informational workshops, and the development of other pertinent publications as needed.
- 1.2.a3** Continue to solicit public comment on transportation programs, projects, and policies and

## H-GAC 2016-17 Unified Planning Work Program

---

to respond to public comment in a timely fashion.

- 1.2.a4** Continue to employ visualization techniques to deliver information, including websites, video, and audio technologies to interested parties.
- 1.2.a5** Continue to develop and maintain mailing and community contact lists to ensure adequate distribution/notice of public meetings and materials.
- 1.2.a6** Continue production of *Mobility NOW*, to provide information to the public via TV and the Internet regarding local transportation issues (**\$200,000 TPF**).
- 1.2.a7** Provide live-streaming of Transportation Policy Board meetings in compliance with SB 1237 (84<sup>th</sup> Legislature).

### *Policy and Government Affairs*

- 1.2.b1** Continue to provide MPO comments to the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and the Environmental Protection Administration (EPA) to proposed rules from these agencies as part of the federal rule-making process.
- 1.2.b2** Organize and/or participate in seminars, peer exchanges, and peer reviews as necessary to facilitate communication between MPOs, federal, state, and local agencies, providing food and non-alcoholic beverages, pending TxDOT approval, when deemed appropriate.
- 1.2.b3** Development of briefings and printed materials for policy-makers on federal and state issues relevant to the regional transportation planning process.
- 1.2.b4** Participate in best practices and public involvement training workshops when resources are available.

## H-GAC 2016-17 Unified Planning Work Program

---

### Task 1 Funding Summary Table

<b>TASK 1 - FY 2016</b>	<b>Task 1.1</b>	<b>Task 1.2</b>	<b>Task 1 Total</b>
FHWA-FTA TPF	\$ 2,013,061	\$ 828,120	\$ 2,841,181
STP - Cat 7	\$ -	\$ -	\$ -
TxDOT State Funds	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ -
<b>TOTAL</b>	<b>\$ 2,013,061</b>	<b>\$ 828,120</b>	<b>\$ 2,841,181</b>
<b>TASK 1 - FY 2017</b>	<b>Task 1.1</b>	<b>Task 1.2</b>	<b>Task 1 Total</b>
FHWA-FTA TPF	\$ 2,086,722	\$ 1,003,474	\$ 3,090,196
STP - Cat 7	\$ -	\$ -	\$ -
TxDOT State Funds	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ -
<b>TOTAL</b>	<b>\$ 2,086,722</b>	<b>\$ 1,003,474</b>	<b>\$ 3,090,196</b>

TxDOT will apply transportation development credits sufficient to provide the match for FHWA PL-112 and FTA Section 5303 programs. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

## **TASK II**

# **DATA DEVELOPMENT AND MAINTENANCE**

The subtasks contained in Task II are to collect, update, model, and maintain the basic data and tools required for executing the planning activities described in this UPWP.

### **OBJECTIVES:**

- To collect, process, and analyze socioeconomic data necessary to develop and implement regional transportation plans and systems.
- To develop and maintain advanced state-of-the-practice travel demand modeling tools and explore *advanced practice* modeling methods that enhances the region's capabilities for regional, sub regional, and corridor planning and analysis.
- To participate in the ongoing data collection efforts of other transportation agencies in the region and expedite the sharing of roadway inventory data and candidate roadway project information between transportation agencies.
- To maintain a regional database clearinghouse on the H-GAC Transportation web pages to provide easier access to the large quantities of data generated by the various transportation agencies.

### **EXPECTED PRODUCTS:**

- Continued maintenance of socioeconomic databases necessary for transportation planning and modeling activities.
- Continued release of population, employment and land use forecast data on a quarterly basis.
- The collection of revised freeway traffic counts and speed data for model validation.
- The development of an “advanced-practice” set of regional travel models that incorporate updated modeling practices and theories as well as new travel survey data.
- Cartographic materials in support of public outreach and environmental justice programs.
- The review and assessment of traffic data used in base year networks, including Automated Vehicle Identification (AVI), Wavetronic, Bluetooth, private data and Automatic Traffic Recorder (ATR) data to help rectify the modeling network.
- The conducting of emissions analyses of projects using the MOVES model.

### **PREVIOUS WORK**

- Continued the maintenance and updates of socioeconomic data with the latest available information.
- Conduct quarterly updates to population, employment, and land use forecast in the Regional Land Use Information System
- Completed development of a state-of-the-practice, activity-based travel model set.

# H-GAC 2016-17 Unified Planning Work Program

---

- Staff continues to develop future modeling roadway network that will reflect all added capacity roadway projects through 2040.
- Staff enhanced the 5,000 Traffic Analysis Zones (TAZ) for future modeling work in the eight-county region for H-GAC. Status - completed
- Produced conformity calculations to the current SIP for the RTP and TIP in accordance with the transportation conformity regulations when needed. Continued work on framework for estimating transportation greenhouse gas emissions and assessing mitigation options at project level and regional level. Two reports were generated discussing 1) the quantification of GHG emissions for RTP projects and control strategies, including an analysis tool and example applications, and 2) a white paper on new directions on GHG emissions and climate change.
- Staff provided modeling technical assistance and support both at the regional, state and local levels for plans and special studies including the Regional Transportation Plan (RTP), Transportation Improvement Programs (TIP), SH 288/Toll corridor studies, Texas Medical Center (TMC) study, and the East End Livable center mobility study.
- Developing a set of utilities for the MOVES model to conduct emission analyses (expected completion in October 2015).
- Assisted in providing data to local governments, TxDOT and their consultants of on-road air toxics emissions inventories for their analyses of road construction following the NEPA process.
- Provided support for modeling and technical regional meetings for the Southeast Texas Photochemical Modeling Technical Committee, the Texas Working Group, the Association of Metropolitan Planning Organizations and the Center for Houston's Future.
- Efforts to collect traffic speed and counts on the freeway system to validate travel demand model have been carried over into FY 2016 due to delays in procurement and missing the optimal data collection time in April.

## **SUBTASK 2.1 Socioeconomic Data and Models (H-GAC C&E Planning)**

Subtask 2.1 addresses the ongoing development of socioeconomic data and socioeconomic forecasting models, along with informational services and analytical support of Transportation planning activities and studies.

### **PRODUCTS:**

#### **Socioeconomic Data**

- 2.1.a1.** Staff will continue monitoring releases of aggregate socioeconomic data from federal and state agencies, and other public and private sources. Staff will continue maintaining and updating databases with such information.
- 2.1.a2.** Staff will continue researching, obtaining, and processing information on the location, timing, and details of planned development projects in the region. Staff will continue

# H-GAC 2016-17 Unified Planning Work Program

---

maintaining and updating databases with such information.

- 2.1.a3.** Staff will continue researching, obtaining, processing, and synthesizing disaggregate information on parcels, buildings, businesses, and households in the region. Staff will continue maintaining and updating databases with such information.

## **Socioeconomic Models**

- 2.1.b1** Staff will continue improving and enhancing the existing operational version of the demographic and economic macro forecasting model.
- 2.1.b2** Staff will continue improving and enhancing the existing operational version of the land-use micro forecasting model.
- 2.1.b3** Staff, in cooperation with the Travel Demand Modeling group, will develop scenario-based regional integrated “land use-transportation” small-area population and employment forecasts for transportation planning purposes.

## **Information Services and Analytical Support**

- 2.1.c1** Staff will continue improving and enhancing the existing web-based mapping and database query applications allowing easy access to socioeconomic data by transportation partners and general public.
- 2.1.c2** Staff will provide informational services and analytical support to H-GAC Transportation staff, transportation agencies, local governments and their consultants in support of regional transportation planning activities and studies.

## **SUBTASK 2.2 Physical Features, Data, & Modeling Support (MPO)**

Subtask 2.2 describes the ongoing development, maintenance, and training activities associated with travel demand data development, mapping, and modeling. This subtask describes efforts directed toward the continued development, enhancement, and maintenance of the MPO’s travel demand models, including the physical collection, entry, preliminary tabulation, GIS-based mapping, maintenance, and analysis of transportation-related data.

## **PRODUCTS:**

### **Transportation Data & Modeling Support**

- 2.2.a1** Use geographic information systems (GIS) to develop menus, macros, programs, and user manuals needed to display and evaluate transportation tasks.

## H-GAC 2016-17 Unified Planning Work Program

---

- 2.2.a2. Maintain, refine, and enhance the data required to operate the travel demand models, including the road network, segment nodes, and traffic analysis zones.
- 2.2.a3. Provide programming support for modeling and GIS applications.
- 2.2.a4. Create maps and other GIS-related publications as needed.
- 2.2.a5. Maintain the GIS-based Project Viewer in TELUS for TIP and RTP projects.
- 2.2.a6. Apply GIS and cartographic modeling techniques to enhance spatial analysis of demographic and travel data
- 2.2.a7. Obtain consultant assistance to determine the method, cost and design for collecting household origin and destination data. These data will be used for updating the regional travel demand model (**Consultant Assistance Required - \$150,000 TPF**)
- 2.2.a8. Conduct transit onboard origin-destination survey for transit services operated by regional transit providers. (**Consultant Assistance Required - \$500,000 TPF/\$500,000 Local**)

### Travel Demand Forecasting

- 2.2.b1. Continue technical support and assistance in the implementation of the Cube Voyager model set. (**Consultant Assistance Required - \$200,000 TPF**)
- 2.2.b2. Conduct traffic speed and count collection on the freeway system to validate travel demand model. (**Consultant Assistance Required - \$250,000 TPF**)
- 2.2.b3. Provide support in the development of the TIP, RTP, Subregional Planning, and other studies as needed, including but not limited to toll revenue studies, member agency mobility plans, and environmental justice assessments.
- 2.2.b4. Review and assess traffic data used in base year networks, including AVI, Wavetronic, Bluetooth, private data and ATR data to help rectify the modeling network.
- 2.2.b5. Review and assess demographic data and other model inputs.
- 2.2.b6. Continue Cube Avenue development for use in corridor and mesoscopic analyses.
- 2.2.b7. Continue work on conformity determination to ensure the region does not exceed its motor vehicle emissions budgets
- 2.2.b8. Develop Cube Cargo based tour truck model. (**Consultant Assistance Required - \$500,000 TPF**)

## H-GAC 2016-17 Unified Planning Work Program

---

- 2.2.b9.** Conduct modeling and related economic analysis for value capture study of US 290 corridor to account for the impact of both rail and highway improvements on the corridor land development and values (**Consultant Assistance Required - \$50,000 TPF**)
- 2.2.b10.** Continue development of a set of utilities that utilize the MOVES model to conduct conformity analysis, emission inventories, and air quality status (**Consultant Assistance Require - \$45,000 TPF**).
- 2.2.b11.** Conduct modeling of proposed design alternatives to Kirkwood Drive in Meadows Place (**Consultant Assistance Required - \$21,000 TPF**)
- 2.2.b12.** Technical support and assistance in the maintenance and upgrade of Activity Based Model and other aspects of advanced travel demand and analysis. (**Consultant Assistance Required - \$40,000 TPF**)
- 2.2.b13.** Develop a regional base map for use with the Statewide Traffic Analysis and Reporting System (STARS II) to input data into the federal Highway Performance Monitoring System (**Consultant Assistance Required - \$45,000**).

### **MPO Support and Training**

- 2.2.c1.** Attend meetings and participate on committees of the GIS Users Groups, Network Users Groups, and other technical support groups as needed.
- 2.2.c2.** Continue staff training on the Cube Suite of software.

## H-GAC 2016-17 Unified Planning Work Program

---

### Task 2 Funding Summary Table

<b>TASK 2 - FY 2016</b>	<b>Task 2.1</b>	<b>Task 2.2</b>	<b>Task 2 Total</b>
FHWA-FTA TPF	\$ 807,262	\$ 1,988,921	\$ 2,796,183
STP - Cat 7	\$ -	\$ -	\$ -
TxDOT State Funds	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ -
<b>TOTAL</b>	<b>\$ 807,262</b>	<b>\$ 1,988,921</b>	<b>\$ 2,796,183</b>
<b>TASK 2 - FY 2017</b>	<b>Task 2.1</b>	<b>Task 2.2</b>	<b>Task 2 Total</b>
FHWA-FTA TPF	\$ 814,915	\$ 3,493,447	\$ 4,308,362
STP - Cat 7	\$ -	\$ -	\$ -
TxDOT State Funds	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -
Other Local	\$ -	\$ 500,000	\$ 500,000
<b>TOTAL</b>	<b>\$ 814,915</b>	<b>\$ 3,993,447</b>	<b>\$ 4,808,362</b>

TxDOT will apply transportation development credits sufficient to provide the match for FHWA PL-112 and FTA Section 5303 programs. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

**This Page Intentionally Left Blank**

## **TASK III**

### **SHORT-RANGE PLANNING**

The work elements contained in Task III include the development of the Transportation Improvement Program (TIP), as well as sub-regional or county-level mobility studies, transit feasibility studies, and operations planning. Short-range planning efforts will also be focused on the continued coordination and development of transit and Transportation Demand Management (TDM) projects. Task III also includes ongoing maintenance of the Regional Intelligent Transportation System (ITS), as well as efforts to improve traffic safety in the region.

#### **OBJECTIVES:**

- Support the development of short-range transportation planning consistent with federal planning and air quality requirements.
- Address federal performance based planning requirements including the adoption of performance measure targets in the areas of system condition, safety, congestion and air quality, and freight.
- Facilitate implementation of transportation projects and programs in the TIP through coordination and consultation with local implementing agencies.
- Involve the private sector in the planning of transit services and the joint development of transit facilities.
- Maintain and enhance the transportation project database.
- Revise and maintain the Regional ITS Architecture.
- Identify best practices and funding for enhanced regional incident management.
- Continue support for TDM activities that are consistent with recommendations from earlier planning studies.
- Continue to seek improved mobility options for people who have limited mobility choices today. That group includes youth, seniors, persons with disabilities, and others. This objective will be accomplished by improving access to jobs, training opportunities, and educational, social, medical, and recreational activities.
- To expand our knowledge of the quantity, severity, and causes of traffic accidents in the region and look for cost effective solutions.

#### **EXPECTED PRODUCTS:**

- The development of a new TIP and RTP project tracking system.
- Continued modification of the 2015-18 TIP.
- Development of the 2017-2020 TIP.
- Development of an initial CMAQ performance plan.
- Continued enhancement of the Call for Projects and Project Evaluation processes.
- The provision of assistance to local governments for environmental analyses of projects.

## H-GAC 2016-17 Unified Planning Work Program

---

- The development of the 2016 Update to the Regionally Coordinated Transportation Plan (RCTP).
- An update to the regional ITS Architecture.
- The implementation of enhanced freeway incident management programs in the region.
- The development of a traffic safety plan which is to be integrated into the 2040 RTP through amendment or update.
- The development of annual State of Safety in the Region reports outlining the traffic safety situation in the region.

### PREVIOUS WORK

- Updated Statewide Transportation Improvement Program (STIP) reporting products in accordance with revised STIP amendment procedures and reporting requirements.
- Staff supported the development of two conformity determinations to address revisions to the TIP and RTP projects.
- Staff worked with TIP Subcommittee and other TAC subcommittees (Pedestrian & Bicycle Subcommittee, Operations Task Force, Regional Transit Coordination Subcommittee and Transportation Air Quality Subcommittee) to develop evaluation criteria and application materials for the 2015 TIP Call For Projects.
- Staff worked with TIP Subcommittee to review major TIP amendments.
- Conducted a project development workshop series targeting local elected officials as well as agency technical staffs.
- Conducted 2015-18 TIP Call for Projects in January 2015.
- Staff worked with sponsors and TIP Subcommittee to prepare the 2015-2018 TIP, approved by the TPC on May 23, 2014. FHWA approval of 2015-2018 STIP was obtained on December 2, 2014.
- Coordinated the inclusion of the RCTP into the 2040 Regional Transportation Plan (RTP). Coordinated with the Regional Transit Coordination Subcommittee (RTCS) to update the Action Plan.
- Assisted with the development and refinement of the Program Management Plan (PMP) for the 5310 Program for the Conroe/The Woodlands Urbanized Area.
- Assisted with the initial development of the PMP for the 5310 Program in the Houston Urbanized Area.
- Completed a transit study for the Woodlands.
- City of Houston completed a mobility study for the Texas Medical Center
- Began conducting Traffic Incident Management training for first responders (police, fire, EMS, tow operators).
- Worked with Harris County Sheriff's Department to provide financial support for its Motorist Assistance Program (MAP) and to install staff on the TranStar floor to conduct freeway surveillance and coordination activities for incident management.
- Conducted multiple crash data analyses on behalf of member governments.

## H-GAC 2016-17 Unified Planning Work Program

---

- Continued work with TTI to regionally grow the Teens in the Driver Seat program to provide peer-to-peer teen outreach regarding safe driving.
- Continued work with Texas Children's Hospital to conduct bicycle, pedestrian, and child restraint outreach for young children.
- Implemented a second and third year of a Regional DWI Task Force
- The development and improvement of the online TIP/RTP project information database to allow for enhanced project tracking has been carried over into FY 16 due to shortage in staffing.
- The development of environmental analyses related to proposed projects and supporting the enhancement of transportation planning and environmental linkages has been carried over into FY 16 due to shortage in staffing.

### **SUBTASK 3.1 Transportation Improvement Program**

The Transportation Improvement Program (TIP) is a cooperatively-developed, four-year program outlining transit, highway, and traffic improvements, as well as other transportation- and air quality-related activities within the Houston-Galveston TMA. The purpose of the TIP is to identify the transportation improvement projects selected by the TPC through the continuing, coordinated, and comprehensive ("3-C") regional transportation planning process. The TIP must conform to federally mandated emission reductions for air pollutants, and must be financially consistent with estimated federal, state, and local revenues for the four-year time frame.

#### **PRODUCTS:**

- 3.1.a1** Continue the development and improvement of the online TIP/RTP project information database to allow for enhanced project tracking and access by member agencies. **(Consultant Assistance Required - \$200,000 TPF)**
- 3.1.a2** Provide information regarding project programming and implementation to federal, state, and local transportation stakeholders as required.
- 3.1.a3** Track the implementation status of projects [project monitoring] and update the project list for interim periods, maintaining a historical record of projects submitted by various sponsors for inclusion in the RTP and TIP project databases.
- 3.1.a4** Analyze proposed amendments to the current TIP for conformity implications, financial impact, and administrative changes.
- 3.1.a5** Staff, in conjunction with the subcommittees of the Technical Advisory Committee (TAC), will gather input for various planning and project development activities. Guidance from Subcommittees is used to develop recommendations to the TAC and Transportation Policy Council when needed.

## H-GAC 2016-17 Unified Planning Work Program

---

- 3.1.a6** Conduct educational RTP/TIP presentations and workshops for H-GAC committee members, local transportation and government agencies, as well as other project sponsors and the public. These presentations and educational workshops include review of such activities as project submittal, selection, evaluation, amendment procedures, and policies, and Title VI investigations as necessary. Provide food and non-alcoholic beverages, pending TxDOT approval, at selected meetings and events when deemed appropriate.
- 3.1.a7** Conduct project development workshops for project sponsors and transportation engineering consultants when new projects may be called for. The project development workshop(s) will be used to educate project sponsors on advanced project implementation with TxDOT.
- 3.1.a8** Provide assistance to local governments in the delivery of selected TIP projects with the objective of accelerating project delivery and reducing unanticipated changes in project scope and cost.
- 3.1.a9** Reassess and modify the TIP Call for Projects process, including submission requirements, readiness determination, timing, and project evaluation process (**Consultant Assistance Needed - \$50,000**).
- 3.1.a10** Develop and maintain the Transportation Improvement Program, including development of the initial document and required amendments.
- 3.1.a11** Conduct 2017 TIP Call for Projects to make project funding commitments for the 2017-2020 TIP and 2021-2026 period of the Unified Transportation Program.
- 3.1.a12** Provide planning assistance to TxDOT and local governments in the development of pre-environmental and environmental analyses related to proposed projects, and support the enhancement of transportation planning and environmental linkages. Work shall not include any project engineering and design (**Consultant Assistance Needed - \$175,000 TPF**).

### **SUBTASK 3.2 Short-Range Transit Planning**

The objective of this subtask is to undertake planning and coordination projects for public transportation services in underserved areas of the region. These projects may take the form of transit feasibility assessments or coordination plans that will include the development of a five-year financial plan for new or expanded services. The target populations of this coordinated planning effort are the elderly, physically and mentally challenged persons, and low-income individuals, particularly those without access to an automobile or those living in areas with inadequate public transit services.

### **PRODUCTS:**

# H-GAC 2016-17 Unified Planning Work Program

---

## MPO Transit Planning

- 3.2.a1** Participate in project selection activities for Projects in the MPO's Urbanized Area (UZA) (conducted by METRO) as well as calls for FTA projects in the small urban and rural areas (conducted by TxDOT).
- 3.2.a2** Provide planning support for the implementation of priority projects identified in the Regionally Coordinated Transportation Plan (RCTP) .
- 3.2.a3** Review/Update the RCTP vision, goals, objectives and performance measures to reflect the 2040 RTP vision and goals.
- 3.2.a4** Coordinate regional targets for state of good repair and safety performance measures, consistent with state department of transportation and local transit provider Transit Asset Management System and Public Transportation Safety Program plans.
- 3.2.a5** Continue staff support to the Regional Transit Coordination Subcommittee of the Technical Advisory Committee (TAC).
- 3.2.a6** Continuation of subregional and county level planning analyses in support of Environmental Justice-Title VI requirements to ensure compliance with FTA requirements. Planning level socio-economic and equity analyses will be used to support the data needs in the semi-annual Title VI compliance reports and the RCTP Update for 2016.
- 3.2.a7** Coordination of the development of the 2016 Update to the Regionally Coordinated Transportation Plan (**Consultant Assistance Required - \$35,000 FTA 5304, \$100,000 TPF**)
- 3.2.a8** Continue work with public transportation providers to identify opportunities for Transit Oriented Design in conjunction with their plans for existing and proposed services.

## FTA Planning Funds for Transit Agencies

- 3.2.b1** Transit agencies wishing to use **FTA 5307** funds for planning purposes must have those dollars programmed in the UPWP and the current TIP. **Figures are estimated and will be updated upon receipt of new figures:**
  - A Gulf Coast Center {Lake Jackson/Angleton UZA}** - General transit service planning including RTP, TIP, and UPWP submittals. Grant development and post-award technical support. Participate on H-GAC transportation planning committees. Evaluate funded projects, including federal compliance.

## H-GAC 2016-17 Unified Planning Work Program

---

FTA 5307 Planning	Federal	State	Local	Total
2016	\$90,000	\$22,500	\$0	\$112,500
2017	\$90,000	\$22,500	\$0	\$112,500

- B Gulf Coast Center {Texas City/LaMarque UZA} -** General transit service planning including RTP, TIP, and UPWP submittals. Grant development and post-award technical support. Participate on H-GAC transportation planning committees. Evaluate funded projects, including federal compliance.

FTA 5307 Planning	Federal	State	Local	Total
2016	\$90,000	\$22,500	\$0	\$112,500
2017	\$90,000	\$22,500	\$0	\$112,500

- C Harris County Transit {Houston UZA} -** Conduct planning studies for SH 249 and FM 2920 to Interstate 45 corridors; provide grant and planning administration; fare studies; training activities; feasibility analyses. Grant and other submissions include TIP, RTP, and UPWP preparations and participation on H-GAC transportation planning committees.

FTA 5307 Planning	Federal	State	Local	Total
2016	\$450,000	\$0	\$90,000	\$540,000
2017	\$450,000	\$0	\$90,000	\$540,000

- D Fort Bend County Transit {Houston UZA} –** Funds will be used for the following:

**Rail Study:** Fort Bend County will continue work that began in 2007 with the Gulf Coast Freight Rail District to determine the feasibility of developing a freight rail corridor bypass to enable commuter rail in the US-90A Corridor between Rosenberg and Houston and assess the resulting effects on mobility capacity in Fort Bend County.

**Alternative Fuel Study:** Fort Bend County is considering initiating an Alternative Fuel Study to determine the feasibility of converting the fleet to alternative fuels. The study will include a comparison to similar transit agencies, analysis of different types of alternative fuels, associated costs, modal concerns and review of success/failures encountered by other agencies.

**Downtown Houston Transit Options Study:** Fort Bend County Transit, Houston METRO, and Central Houston are working on developing a one-seat, seamless-fare ride for commuters from Fort Bend County to Downtown Houston. The Texas Transportation Institute (TTI) is providing technical assistance, analysis and stakeholder facilitation. Stakeholders include the City of Sugar Land and employers in the Central Houston area.

**Administration / Operations Facility:** Fort Bend County will continue with activities related to the advanced planning, preliminary engineering, property acquisition,

## H-GAC 2016-17 Unified Planning Work Program

---

environmental assessment, and final design work for the construction of an Administration and Operations facility.

Westpark Park & Ride: Fort Bend County will continue activities related to advanced planning, preliminary engineering, final design and service initiation related to the construction of the Westpark Park & Ride.

General Planning Activities: Each year, Fort Bend County's Public Transportation Department staff participate in planning activities related to financial, operational, marketing, and reporting activities. Some transportation planning activities are limited in scope and/or complex in nature and are therefore contracted to the private sector. Such activities may include, but are not limited to, service studies and/or design, financial feasibility analysis, bid proposal analysis, etc.

FTA 5307 Planning	Federal	State	Local	Total
2016	\$594,282	\$0	\$0	\$594,282*
2017	\$565,983	\$0	\$0	\$565,983*

\*Funds are being matched with Toll Development Credits of \$118,856 in 2016 and \$113,197 in 2017

- E City of Conroe {Conroe/Woodlands UZA}** – Federal and state grant financial management (including pursuit, data development, filing, tracking, and application submittal of federal and state funds); transit planning (including studies, service planning, previous project evaluation, and improving transportation); and planning administration, which includes addressing dual-designated recipient status (including intergovernmental, legislative, and legal support to meet planning objectives)

FTA 5307 Planning	Federal	State	Local	Total
2016	\$414,800	\$0	\$103,700	\$518,500
2017	\$178,000	\$0	\$79,500	\$257,000

- F The Woodlands Township {Conroe/Woodlands UZA}** – Program coordination; program compliance; grant management; transit planning; legal, administration, insurance costs and capital project planning.

FTA 5307 Planning	Federal	State	Local	Total
2016	\$453,000	\$0	\$64,000	\$517,000
2017	\$136,000	\$0	\$64,000	\$200,000

### SUBTASK 3.3 Regional Operations/Intelligent Transportation Systems Planning

The aim of Intelligent Transportation Systems (ITS) is to improve efficiency and safety of the transportation system in the area through deployment of advanced technologies and systems management techniques. ITS technologies offer benefits ranging from improved safety on the existing transportation infrastructure to enhanced travel information to users of the transportation facilities. ITS technologies also provide managers of the transportation systems to better utilize

## H-GAC 2016-17 Unified Planning Work Program

---

existing infrastructure by using information from ITS solutions.

The MPO has been tasked with the development and maintenance of the ITS Architecture, which provides a blueprint on how the various ITS elements implemented throughout the region interact with each other to allow for improved system operations. With changes in technology, this Architecture needs revisiting to better describe the activity and connectivity of these systems.

In addition, incident management activities have been recognized as a critical component in congestion management. The MPO will work with various stakeholders to implement the Regional Incident Management Strategic Plan to consolidate activities, increase communications, and grow incident management beyond Harris County.

### **PRODUCTS:**

- 3.3.a1** Re-evaluate RTP and TIP project selection processes and criteria.
- 3.3.a2** Maintain and revise the regional ITS Architecture when needed.
- 3.3.a3** Update the regional ITS Architecture and other ITS-related documents based on Regional Transportation Systems Management and Operations (TSMO) Self-Assessment (**Consultant Assistance Needed - \$175,000 TPF**).
- 3.3.a4** Continue to research Benefit-Cost methodologies to better assess operational and ITS improvements' impacts on congestion and air quality.
- 3.3.a5** Participate in Houston TranStar/ITS-related functions, such as attending meetings to provide the MPO's perspective and fulfilling TranStar Leadership Team requests.
- 3.3.a6** Facilitate annual ITS training for public sector entities in the TMA involved in the implementation of ITS. Provide food and non-alcoholic beverages, pending TxDOT approval, at events when deemed appropriate.
- 3.3.a7** Provide technical assistance to the Operations Task Force Subcommittee and other ITS-related groups as appointed. Technical assistance includes preparation of meeting materials, notices, maintaining meeting records, training workshop(s) for the respective members, and other assistance.
- 3.3.a8** Non-lobbying participation in the Intelligent Transportation Society of America (ITS America), the Texas Chapter of ITS America (ITS Texas), and other organizations that enhance the ITS planning process.
- 3.3.a9** Continue to support training for regional incident management responders based on the FHWA's Strategic Highway Research Program 2 (SHRP2).
- 3.3.a10** Continue work with regional incident management agencies to enhance and geographically grow incident management activities throughout the region.

## **SUBTASK 3.4 Safety Planning**

This subtask promotes the continued pursuit and analysis of safety issues as they relate to our long range planning efforts. These efforts range from the collection of crash data to the sponsoring of planning studies and initiatives to address high crash locations. A multi-disciplinary Regional Safety Council has been developed to bring interested and involved parties to the table to address regional safety in a holistic manner.

### **PRODUCTS:**

- 3.4.a1** Coordinate and adopt regional targets for the safety performance measures identified in MAP-21 (Highway Safety Improvement Program), including the number of serious injuries and fatalities and the rate of each per VMT, and consideration adoption of additional local performance measure and targets.
- 3.4.a2** Develop a Regional Transportation Safety Plan to identify areas of concern in transportation safety, appropriate countermeasures for addressing safety issues, and funding sources for remediating these issues (to be incorporated into the 2040 RTP).
- 3.4.a3** Continue to support the Regional Safety Council and its subcommittees involving transportation, law enforcement, emergency services, medical, safety advocates, non-profit, business, and other interested organizations.
- 3.4.a4** Conduct non-lobbying participation in local, state, and national initiatives involved in promoting increased traffic safety.
- 3.4.a5** Research and analyze crash data from TxDOT's Crash Record Information System (CRIS) and assist agencies in assessing problem locations with CRIS data.
- 3.4.a6** Coordinate trainings and workshops on safety-related issues for agencies and regional implementers, if available or needed.
- 3.4.a7** Produce an annual State of Safety in the Region report, summarizing the regional crash experience and various efforts to address traffic-related crashes in the region.
- 3.4.a8** Conduct public outreach for traffic safety in the region, including the development and delivery of education and information to the public about traffic safety matters, including but not limited to bicycling, distracted driving, driving while intoxicated, safety around commercial vehicles, and motorcycle safety. Activities will range from the development of informational handouts to the development of public safety announcements on the radio.
- 3.4.a9** Continue support for Safe Kids of Greater Houston/Texas Children's Hospital to provide education and outreach for bicycle, pedestrian, and child seat safety geared towards children in the region – **(Texas Children's Hospital - \$40,000 TPF (FY 2016)/\$63,500**

## H-GAC 2016-17 Unified Planning Work Program

---

**STP, \$15,875 Local (FY 2017))**

- 3.4.a10** Continue support for *Teens in the Driver Seat*, an educational program devised by the TTI for teens to educate fellow teens on the dangers of driving at night, speeding, distraction (texting, cell phones, other teens in the vehicle, etc.), not wearing a seatbelt, and driving under the influence (**TTI - \$75,000 (\$60,000 TPF, \$15,000 Local (FY 2016)/ \$67,750 STP, \$16,875 Local (FY 2017))**).

### Task 3 Funding Summary Table

<b>TASK 3 - FY 2016</b>	<b>Task 3.1</b>	<b>Task 3.2</b>	<b>Task 3.3</b>	<b>Task 3.4</b>	<b>Task 3 Total</b>
FHWA-FTA TPF	\$ 630,625	\$ 603,205	\$ 114,689	\$ 204,889	\$ 1,553,407
STP - Cat 7	\$ -	\$ -	\$ -	\$ -	\$ -
TxDOT State Funds	\$ -	\$ 45,000	\$ -	\$ -	\$ 45,000
TxDOT SPR	\$ -	\$ -	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ 2,140,244	\$ -	\$ -	\$ 2,140,244
Other Local	\$ -	\$ 257,700	\$ -	\$ 15,000	\$ 272,700
<b>TOTAL</b>	<b>\$ 630,625</b>	<b>\$ 3,046,149</b>	<b>\$ 114,689</b>	<b>\$ 219,889</b>	<b>\$ 4,011,351</b>
<b>TASK 3 - FY 2017</b>	<b>Task 3.1</b>	<b>Task 3.2</b>	<b>Task 3.3</b>	<b>Task 3.4</b>	<b>Task 3 Total</b>
FHWA-FTA TPF	\$ 879,698	\$ 583,624	\$ 221,687	\$ 117,821	\$ 1,802,830
STP - Cat 7	\$ -	\$ -	\$ -	\$ 131,250	\$ 131,250
TxDOT State Funds	\$ -	\$ 45,000	\$ -	\$ -	\$ 45,000
TxDOT SPR	\$ -	\$ -	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ 1,558,145	\$ -	\$ -	\$ 1,558,145
Other Local	\$ -	\$ 233,500	\$ -	\$ 32,750	\$ 266,250
<b>TOTAL</b>	<b>\$ 879,698</b>	<b>\$ 2,420,269</b>	<b>\$ 221,687</b>	<b>\$ 281,821</b>	<b>\$ 3,803,475</b>

TxDOT will apply transportation development credits sufficient to provide the match for FHWA PL-112 and FTA Section 5303 programs. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

# TASK IV

## LONG-RANGE PLANNING

### INTRODUCTION

The 2040 Regional Transportation Plan (RTP) is a complex and detailed public policy document. The plan is principally concerned with workers and businesses that sustain our region's economic health, while at the same time preserving and improving the community and environmental attributes that contribute the region's quality of life. The RTP's recommendations are regional and are intertwined with local transportation decisions, requiring coordinated actions. The plan is constrained by the available financial resources and air quality requirements.

Federal and state mandates require that: 1) the RTP conform to air quality mandates; 2) the RTP be financially constrained; 3) the eight Planning Factors identified in MAP-21 be considered in the RTP's development; 4) public participation be actively sought in designing the RTP for the region's future transportation system; and 5) the Congestion Management Process (CMP) be integrated with RTP development. The ongoing maintenance of the CMP is included in the RTP subtask.

This task also includes ongoing initiatives regarding transportation-related air quality planning and emissions inventories and the Area Emission Reduction Credit Organization (AERCO). A secondary objective of the program is to improve the region's air quality by complying with state and federal requirements contained in the State Implementation Plan (SIP) and Clean Air Act (CAA).

The subtask for regional bicycle and pedestrian planning focuses resources on developing and implementing a full range of plans, processes, promotion, education, and outreach for the region's bicycle and pedestrian traffic safety.

The subtask for Livable Centers provides outreach and technical assistance to local governments and private developers in achieving a more effective interface between land-use development patterns and the transportation system.

### OBJECTIVES:

- Update the 2040 Regional Transportation Plan.
- Develop regional, subregional, and local area plans; continued emphasis on analyses of alternative land use and transportation system development scenarios, safety and security related projects, goods movement, and regional public transportation needs.
- To develop performance measures used to gauge potential projects (project selection), project performance (project evaluation), plan performance (plan evaluation), and planning process performance (planning process evaluation).
- Address federal performance based planning requirements including the adoption of performance measure targets in the areas of system condition, safety, congestion and air quality, and freight (COORDINATED WITH TASK III).
- To incorporate projects and/or strategies resulting from Major Corridor Studies and

## H-GAC 2016-17 Unified Planning Work Program

---

### Alternative Analyses.

- To comply with the Clean Air Act as outlined in the State Implementation Plan (SIP), its development and revisions, and to provide implementation assistance for local governments.
- To prepare the planning, tracking, documentation, and reporting of implementation projects as related to Transportation Control Measures (TCMs) and Voluntary Mobile Emission Reduction Program (VMEP).
- To provide local governments with information regarding the strategies, alternatives, implications, and consequences of SIP measures.
- To develop and/or update mobile emission inventories and participate in the establishment of emissions budgets for ozone precursors emitted by the region's transportation system.
- To calculate the conformity of the RTP to the air quality emission budgets from the State Implementation Plan.
- Promote public involvement and communication in 'best practices' for land use/transportation coordination.
- To develop more Livable Centers plans and projects, assisting local governments in creating quality mixed-use places that reduce dependence on single-occupancy vehicles.
- To decrease the share of trips made by single-occupancy vehicles and promote alternatives such as walking, biking, telework, vanpool, and carpool.
- To integrate and maintain the congestion management process into the RTP.

### **EXPECTED PRODUCTS:**

- Develop an update to the 2040 Regional Transportation Plan (RTP), to consider the prioritization of candidate projects for inclusion into the plan's recommendations, update future revenue estimates, consider alternative funding scenarios, and
- The coordination and selection of long-range targets for performance measures identified in MAP-21.
- Conformity determination documentation.
- An updated regional major thoroughfare plan.
- Continued Metropolitan Planning Organization (MPO) support in State Implementation Plan (SIP) development, coordination, and implementation efforts.
- Documentation of the progress and fulfillment of VMEPs and TCMs.
- Continued support of clean air compliance for local governments.
- Facilitation of the Area Emission Reduction Credit Organization initiatives and reporting.
- Documentation of efforts to meet the motor vehicle emission budget(s). Analyses of project implementation and prioritization, capacity enhancements, environmental status, environmental justice, performance measures, scenario planning, costs, description of work, etc.
- Documentation regarding control strategies for on-road and non-road mobile sources to be

## H-GAC 2016-17 Unified Planning Work Program

---

included on SIP.

- Calculation of on-road emission inventories for the Reasonable Further Progress SIP for several years.
- Bicycle/Pedestrian Special District study to assist local areas in identifying areas with high potential to increase the walking and bike mode share.
- Livable Centers studies to assist local areas in creating walkable, mixed-use places that provide transportation options.

### PREVIOUS WORK

- Adopted the 2040 Regional Transportation Plan (RTP) in January 2015.
- The RTP Subcommittee updated the vision statement and goals, bringing them in line with federal planning goals. Potential performance measures were identified.
- Updated analyses and planning assumptions for the Regional Transit Framework and have been working with local providers to identify implementation strategies. Work expected to be completed mid-2016.
- Nearing completion of a Station Area Planning Study, in conjunction with METRO, for the purpose of achieving regional and community goals by encouraging Transit Oriented Developments. Recommendations are under review with final deliverables expected in August 2015
- Completed subregional planning studies in Brazoria County, Fort Bend County, and the METRO service area.
- Worked on a mobility plan for Southern Montgomery County, which should be complete in late Summer 2015.
- Worked on a thoroughfare plan for Montgomery County, which should be complete in late Summer 2015.
- Worked on the development of a thoroughfare plan for Fort Bend County, which is undergoing revisions to address revised population/employment projections – expected completion in Fall 2015
- Began work with the City of Houston on a Bicycle Master Plan update. Consultants have been procured and initial public meetings and existing conditions analysis have been conducted. Expected completion in Spring 2016.
- Continued work on the development of the Congestion Management Process, which is expected to be completed in late Summer 2015.
- Continued participation in the Mobility Measurement in Urban Transportation Study run by TTI, which has assisted the region with data collection and analysis techniques, as well as the implementation of Bluetooth-based speed and travel time data collection on regional arterials.
- Staff continued facilitation of the Regional Air Quality Planning Committee, Idling Policy Task Force, Texas Emissions Reduction Program (TERP), and Ozone Non-attainment Designation Task Force.

## H-GAC 2016-17 Unified Planning Work Program

---

- Began development of an alternative fuel inventory and infrastructure plan, expected to be completed in December 2015.
- Staff is working with consultant, ENVIRON, to finalize its Multi-Pollutant Analysis of Transportation Control Strategies. Final analysis results have been completed with documentation in development. The project will be complete in October 2015.
- Developed potential control strategies for PM 2.5 emissions.
- Developed a Regional Bikeway Plan that correlates with the 2040 RTP and emphasizes regional connectivity for all modes of travel.
- Development of a Special District Study for the Greenway Plaza area will begin in August 2015 with an expected completion date of Spring 2016. Other Special District study funding was used for the City of Houston Bicycle Master Plan Update.
- Produced new bikeway maps.
- Conducted the Pedestrian and Bicycle Counts for several local governments in partnership with the Texas Transportation Institute (TTI).
- Completed several Livable Centers studies, including Galveston, Washington Avenue, and Cypress Creek Parkway (Harris County).
- Completed HUD-funded Regional Plan for Sustainable Development, Our Great Region 2040.
- The subregional analysis of current and future transportation infrastructure and land use in Eastern Harris County and Western portions of Chambers County has been carried over into FY 2016 due to a shortage in staffing.
- The subregional analysis of current and future transportation infrastructure and land use in Northeast Harris County has been carried over into FY 2016 due to a shortage in staffing.
- The calculation of emission benefits for CMAQ eligible projects has been carried over in to early FY 2016 due to delays in the release of the updated MOVES Model.
- The inventory of heavy-duty vehicle idling emissions has been carried over into FY 2016 due to delays in the recalculation of emission factors for HD vehicle idling emissions in the MOVES model.
- Several mobility measures were reviewed in the Transportation Mobility Measures Study, but additional work is required in FY 2016 and will be based on the region's pending classification under new ozone standards.
- The Alternative Fuel Inventory/Infrastructure Plan is being carried over into FY 2016 due to a shortage of staffing.
- While the initial PM 2.5 Control Strategies and Plan has been submitted to EPA, an update is being conducted, which will include the City of Houston's mandatory idle reduction program, resulting in anticipated completion in early FY 2016.
- Phase one of the Travel Options Research and Planning Study is expected to be complete by the end of FY 2015 with delays caused by nearly 400 percent more surveys received than anticipated to be reviewed. The overall project is carried over into FY 2016 to address the second and third phases.

# H-GAC 2016-17 Unified Planning Work Program

---

## **SUBTASK 4.1 2040 Regional Transportation Plan (RTP) Development**

This subtask will focus on the continued development of the 2040 Regional Transportation Plan (RTP). Key focus areas for the 2040 RTP include, development of new vision and goal statements; use of performance measures for evaluating projects, project performance, plan performance, and planning process performance; an analysis of regional transit needs and opportunities, environmental considerations and implications for project development, and a consideration of the growth in regional freight activity and the related infrastructure needed to improve multi-modal mobility in the region.

Efforts to overhaul the Congestion Management Process (CMP) began in FY 2012 that are based on materials from the 1997 CMS plan. The Significant Roadway Network of the CMP is defined as roadways classified as principal (or major) arterials and above in urban areas, selected major collectors and above in rural areas, as defined in the TxDOT Roadway Inventory Log (RI-2) and other roadways designated by the TPC.

### **PRODUCTS:**

#### **2040 Regional Transportation Plan**

- 4.1.a1** Amend the 2040 Regional Transportation Plan (RTP) with new revenue estimates, alternative funding scenarios, and the prioritization considerations for the integration of the results of the 2015 TIP Call and other inputs. Analysis will include, but not limited to prioritization process, project data base, performance measures, environmental justice, land use/ transportation integration, and scenario planning – (**Consultant Assistance - \$90,000 TPF.**)
- 4.1.a2** Coordinate with the State and local governments to update thoroughfare plan information, project descriptions, and project implementation schedules. This includes a review of project priorities and project need. Provide food and non-alcoholic beverages, pending TxDOT approval, at selected meetings and events when deemed appropriate.
- 4.1.a3** **REMOVED**
- 4.1.a4** Complete Fort Bend County major thoroughfare plan (**Consultant Assistance - \$60,000**)
- 4.1.a5** Complete Montgomery County major thoroughfare plan (**Consultant Assistance - \$30,000**)

#### **Long-Range Transit Planning**

- 4.1.b1** Develop implementation plan for the recommendations discussed in the Regional Transit Framework, including regional transit planning, coordination, integration, and financing for a regional transit framework.

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.1.b2 Assess access for commuter and high-speed rail on US 290 to an intermodal terminal within the Central Business District (**Consultant Assistance - \$400,000 STP**).
- 4.1.b3 Conduct a study to identify post-trip transportation needs (passenger pick-up, taxi/limousine, rental car, public transportation) for passengers utilizing the proposed High Speed Rail system (**Texas Southern University - \$25,000 TPF**).
- 4.1.b4 Evaluation of potential high capacity transit services and service concepts, including discussion of performance outcomes and concepts for use in development of 2045 Regional Transportation Plan. (**Consultant Assistance - \$50,000 TPF**)

### Subregional Planning Initiative

- 4.1.c1 Conduct a subregional analysis of current and future transportation infrastructure and land use in Eastern Harris County and Western portions of Chambers County to include the Cities of Baytown and Mont Belvieu. (**Consultant Assistance Required - \$500,000 (\$400,000 STP, \$100,000 Local)**).
- 4.1.c2 Conduct a subregional analysis of current and future transportation infrastructure and land use in Waller County. (**Consultant Assistance Required - \$500,000 (\$400,000 STP, \$100,000 Local)**).
- 4.1.c3 Complete the development of a Bicycle Master Plan for the City of Houston to guide infrastructure policy decisions for improving bicyclist safety (**Pass-thru to the City of Houston: \$41,000 TPF**).
- 4.1.c4 Complete subregional mobility study for South Montgomery County to help improve mobility and access to jobs, homes and services (**Consultant Assistance Needed – \$8,000 TPF**).

### Congestion Management Process

- 4.1.d1 Revise CMP significant roadway network map to reflect roadway classification upgrades and new roadway development as needed.
- 4.1.d2 Develop and utilize performance measures for congestion analysis, reporting, project selection and prioritization, project evaluation and long-range planning.
- 4.1.d3 Continue to monitor and evaluate transportation system management (TSM) and transportation demand management (TDM) solution effectiveness as they relate to congestion mitigation, air quality benefits, and safety.
- 4.1.d4 Review applications submitted by transportation partners for transportation projects. Provide training when requested.

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.1.d5** Continue participation in and support for the nationwide mobility measurement research project – (TTI - \$50,000 TPF)
- 4.1.d6** Implement Congestion Management Process to utilize in the production of annual reporting, project selection and prioritization, project evaluation and long-range planning.

### **SUBTASK 4.2 Air Quality Planning/A.E.R.C.O. (MPO)**

Air Quality Planning supports all regional efforts to comply with federal air quality standards, while seeking to preserve the region's transportation needs and economic vitality. The MPO works closely with federal, state, and local officials, planning and regulatory agencies, and area stakeholders to develop on-road mobile emission budgets and emission reduction strategies to demonstrate attainment, model transportation conformity, and monitor and track TCMs and VMEPs. Also H-GAC develops the on-road emission inventories for the Reasonable Further Progress State Implementation Plan for the Texas Commission on Environmental Quality (TCEQ). H-GAC provides support and guidance for regional congestion mitigation and air quality improvement programs for compliance with State Implementation Plan (SIP) and federal clean air requirements.

The Area Emission Reduction Credit Organization (AERCO) is a 501(c)(3) that provides a legal framework to promote air quality improvements and economic growth in the non-attainment area. AERCO initiatives also provide a mechanism for pooling emission credits to meet federal offset requirements and making credits available for economic development. The emission credit trading mechanism under AERCO has not been active for several years, instead AERCO has been providing support to the school bus program by being able to accept federal and state Supplemental Environmental (SEP) Funds and private donations.

#### **PRODUCTS:**

- 4.2.a1** Develop, coordinate, and participate in response to state and federal air quality plans and new regulations affecting the region. Examine legal and sanction ramifications regarding different standards for the region.
- 4.2.a2** Provide coordination, participation, and expertise to local and statewide air quality planning committees.
- 4.2.a3** Support the Regional Air Quality Planning Advisory Committee (RAQPAC), researching air quality issues and making recommendations to the H-GAC Board of Directors.
- 4.2.a4** Support the Transportation Air Quality Subcommittee to advise on project selection for the State Implementation Plan (SIP).

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.2.a5** Analyze emissions benefits of CMAQ eligible projects for VMEPs and TCMs and seek additional commitments from implementing agencies. (**Consultant Assistance - \$85,000 TPF**)
- 4.2.a6** Revise, print, and distribute the *Annual Air Quality Report*.
- 4.2.a7** Provide staff training, public relations and/or sponsorship support for air quality technical workshops. Staff training will include technical training on new EPA emissions models and federal air quality standards. Public outreach activities will be conducted to educate stakeholders and the general public on regional air quality issues.
- 4.2.a8** Develop survey of transit buses and update previous survey of school bus fleet age/emissions.
- 4.2.a9** Develop analysis and inventory of regional heavy-duty vehicle (including school buses) idling emissions. (**Consultant Assistance Needed - \$150,000 TPF**)
- 4.2.a10** **REMOVED**
- 4.2.a11** Update regional alternative fuel inventory and infrastructure plan.
- 4.2.a12** Develop potential control strategies for PM 2.5 emissions. Potential control measures will utilize strategies throughout the region, with a particular focus on identifying cost-effective reductions around the Clinton Road monitor.
- 4.2.a13** Conduct a study on how commuters and employers along Houston's most congested corridors (IH-45 North, US59 South, and US290) respond to various incentives for using commute alternatives (**Consultant Assistance Required - \$56,000 SPR**)

### **SUBTASK 4.3 Bicycle/Pedestrian System Planning (H-GAC C&E Planning Dept.)**

The Transportation Policy Council (TPC) adopted the 2040 Regional Pedestrian and Bicycle Plan, which identifies actions that can be taken to improve the safety, comfort and convenience of walking and biking. This subtask programs support for the continued implementation of the Transportation Policy Council's adopted policy recommendations.

#### **PRODUCTS:**

- 4.3.a1** Provide technical assistance to local governments and other transportation agencies to identify bicycle and pedestrian issues, opportunities, needs and barriers, and provide assistance in project planning and design.

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.3.a2** Review documentation of pedestrian and bicycle accommodations submitted by project sponsors and provide assistance or comments, as appropriate, and work with sponsors and TxDOT to move TIP and RTP bikeways and special district studies forward.
- 4.3.a3** Maintain an up-to-date Regional Bikeway Plan that identifies existing and planned bicycle facilities, system gaps, and future facility needs. Provide technical assistance to local governments and other transportation agencies interested in realizing the Regional Concept Map and other concepts presented within the Regional Bikeway Plan. As part of regular updates to the plan, standardize data collection and other inputs from local governments and transportation agencies to produce easy-to-read maps. The Regional Bikeway Plan will be included in the project management system update to allow users and project sponsors to view bikeway projects programmed into the RTP and TIP.
- 4.3.a4** Conduct or host topical pedestrian/bicycle training workshops for local government agencies, organizations, and interested groups. Potential topics include: “best practices” for local pedestrian and bicycle planning; design and maintenance for pedestrian and bicyclist facilities; improving connectivity; project management; cost estimation; and pedestrian bicyclist safety.
- 4.3.a5** Develop a resource local governments and other transportation agencies can utilize to learn about “best practices” for local pedestrian and bicycle planning; design and maintenance for pedestrian and bicyclist facilities; improving connectivity; project management; cost estimation; and/or pedestrian-bicyclist safety.
- 4.3.a6** **REMOVED**
- 4.3.a7** Conduct Special Districts study in the Greenway Plaza area of Houston to identify specific infrastructure implementation projects that will improve pedestrian and bicyclist mobility in areas where significant opportunities to replace automobile trips with other modes exist, and release a Call for Projects for additional projects identified in H-GAC’s 2010 Special Districts Study Update.
- Consultant Assistance – Greenway Plaza (\$100,000 TPF \$20,000 Local)
  - Consultant Assistance – Additional Projects (\$125,000 TPF \$25,000 Local)
- 4.3.a8** Develop a guidebook based on a minimum of three (3) implementation case studies that identifies how innovative bicycle/pedestrian policies, programs, and practices being implemented nationwide can be applied by regional communities to improved mobility for bicyclist and pedestrians.
- 4.3.a9** Coordinate and offer technical assistance for other H-GAC initiatives as necessary, including the 2040 RTP, Commute Solutions, air quality planning, transportation safety, and the subregional planning initiative.
- 4.3.a10** Work with local governments and other transportation agencies to improve the accuracy of existing pedestrian and bicycle mapping tools.

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.3.a11** Work with local governments, transportation agencies, research organizations, improvement districts, and non-profits to collect data on the number of pedestrians and bicyclists using transportation facilities. Coordinate regular pedestrian and bicycle counts and surveys at locations throughout the TMA. Maintain existing pedestrian/bicycle counters and purchase additional devices as needed. The data from the count efforts will be used to determine existing facility usage; calculate travel demand and air quality benefits associated with investments in pedestrian/bicyclist infrastructure; and document trends of facility usage over time. Consultant services will be required to assist with establishing a collection methodology and process for revisions and to include ongoing technical assistance. (**Consultant Assistance - \$10,000 TPF**)

### **SUBTASK 4.4 Livable Centers (H-GAC C&E Planning Dept.)**

This subtask provides outreach and technical assistance to local governments and private developers to achieve more efficient coordination between development patterns and the transportation system; to develop policies, plans and projects that will help achieve this objective within H-GAC Transportation Management Area (TMA).

### **PRODUCTS**

- 4.4.a1** Assist project sponsors in completing project readiness component for TIP eligibility or for other funding sources, including planning-related assistance regarding the environmental processes, cost estimations, and partnership development.
- 4.4.a2** Refine criteria and conduct livable center project evaluation for next TIP funding round and other potential funding programs.
- 4.4.a3** Assist Transportation Department staff, including contributing to land use/transportation related RTP elements, preparation for 2040 RTP, Subregional Planning program and public outreach efforts.
- 4.4.a4** Conduct training workshops for local government staff and officials on implementing land use-transportation coordination principles such as context sensitive solutions, financing livable centers, urban design, and sustainability. Training will include cost-benefit assessments, land valuation, trip reduction data and implementation of projects.
- 4.4.a5** Maintain updated database and map of significant centers, mixed use, transit oriented development, or sustainable mobility projects and local government planning and implementation projects pertaining to land use-transportation program.
- 4.4.a6** **REMOVED AND COMBINED WITH 4.4.a4**

## H-GAC 2016-17 Unified Planning Work Program

---

- 4.4.a7** Develop comprehensive implementation report examining completed Livable Centers studies. Working with local project sponsors, track completed and planned implementation of Livable Centers study recommendations, including funding sources and estimates of private development in study areas. Develop mechanism to receive on-going updates from project sponsors as projects are implemented.
- 4.4.a8** Coordinate with past Livable Centers project sponsors for further implementation of Livable Centers study recommendations. One-on-one assistance will include examination of challenges faced by project sponsors and assistance with public engagement.
- 4.4.a9** Demonstrate best practices in land use-transportation coordination through ‘Instant Impact’ (small-scale, low-cost demonstration projects) by working with interested local partners.
- 4.4.a10** Seek to identify new sources of funding to help support Livable Centers planning in diverse communities throughout the TMA.

## H-GAC 2016-17 Unified Planning Work Program

---

### Livable Center Studies

- 4.4.b1** Conduct Livable Centers Studies in conjunction with local project sponsors to facilitate the creation of more compact, walkable, mixed-use places in the region. Studies will provide a framework for promoting efficient use of existing infrastructure, creating multi-modal travel choices, improving accessibility and circulation, and leveraging private resources for strategic investment. Studies will identify TIP eligible transportation projects and include an air-quality benefit calculation. **(Consultant Assistance Needed - \$1,875,000, (\$1,450,000 STP, \$362,500,000 Local))**

## H-GAC 2016-17 Unified Planning Work Program

---

### Task 4 Funding Summary Table

<b>TASK 4 - FY 2016</b>	<b>Task 4.1</b>	<b>Task 4.2</b>	<b>Task 4.3</b>	<b>Task 4.4</b>	<b>Task 4 Total</b>
FHWA-FTA TPF	\$ 1,231,001	\$ 525,944	\$ 354,448	\$ 276,214	\$ 2,387,607
STP - Cat 7	\$ 300,000	\$ -	\$ -	\$ 700,000	\$ 1,000,000
TxDOT State Funds	\$ -	\$ -	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ 16,000	\$ -	\$ -	\$ 16,000
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ 20,000	\$ 175,000	\$ 195,000
<b>TOTAL</b>	<b>\$ 1,531,001</b>	<b>\$ 541,944</b>	<b>\$ 374,448</b>	<b>\$ 1,151,214</b>	<b>\$ 3,598,607</b>
<b>TASK 4 - FY 2017</b>	<b>Task 4.1</b>	<b>Task 4.2</b>	<b>Task 4.3</b>	<b>Task 4.4</b>	<b>Task 4 Total</b>
FHWA-FTA TPF	\$ 845,281	\$ 728,335	\$ 317,226	\$ 225,669	\$ 2,116,510
STP - Cat 7	\$ 900,000	\$ -	\$ -	\$ 750,000	\$ 1,650,000
TxDOT State Funds	\$ -	\$ -	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ 40,000	\$ -	\$ -	\$ 40,000
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -	\$ -	\$ -
Other Local	\$ 200,000	\$ -	\$ 25,000	\$ 187,500	\$ 412,500
<b>TOTAL</b>	<b>\$ 1,945,281</b>	<b>\$ 768,335</b>	<b>\$ 342,226</b>	<b>\$ 1,163,169</b>	<b>\$ 4,219,010</b>

TxDOT will apply transportation development credits sufficient to provide the match for FHWA PL-112 and FTA Section 5303 programs. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

**This Page Left Intentionally Blank**

# **TASK V**

## **SPECIAL PLANNING STUDIES**

The special studies of Task V include special one-time planning activities, major corridor studies/analyses, evacuation planning and freight planning.

Subtask 5.1 provides for MPO support of Major Corridor Studies (MCS) and analyses. Specifically, participation in Study Steering Committees, assistance in public information and outreach activities, and travel model forecasting are programmed.

Subtask 5.2 programs funds to support state and local government hurricane evacuation planning, coordination, and implementation efforts.

Subtask 5.3 updates and maintains inventories of multimodal transportation facilities and services including public transit, measures their use, and develops and maintains an inventory of goods movement statistics to and from the region. This subtask also looks at general aviation development for the region.

### **OBJECTIVES:**

- To enable a more effective dialogue between the Freight stakeholder community and the public sector and to enhance the public sectors ability to respond to intermodal issues.
- Coordinate the region's Major Corridor Studies and analyses.
- To coordinate and support state and local evacuation planning efforts.
- To examine the issue of commuter rail connectivity along selected corridors as a follow-up to ongoing regional freight study.
- To identify freight routing options to bypass congested areas of the region

### **EXPECTED PRODUCTS:**

- Continued updates of the web-based hurricane evacuation map.
- Continued work with localities to address evacuation issues.
- The implementation of recommendations from the Regional Goods Movement Study
- The completion of two studies to develop freight relief routes for port traffic.

### **PREVIOUS WORK**

- Completed access management studies for US 90A in Richmond/Rosenberg, FM 1092 in Missouri City, and SH3/FM 518/FM 517 in Galveston County.
- Began work on SH 249 Access Management Study – expected to be completed in September 2015.

## H-GAC 2016-17 Unified Planning Work Program

---

- Conducted a post-assessment of past access management studies.
- Began study to identify potential operational treatments for US 59/IH 69, such as comprehensive incident management, dynamic rerouting, variable speed limits, time of day ramp closures, etc.
- Staff continued to work with State and local law enforcement and emergency management personnel to update regional Emergency Evacuation Traffic Management Plans.
- Updated the web-based evacuation management website.
- Conducted freight educational outreach efforts, as recommended by the Regional Goods Movement Study, to multiple shippers, intermodal interests and freight stakeholders.
- The study to assess a potential urban area reliever route for freight movement identified from recommendations from the Regional Goods Movement Study has been carried over into FY 2016 due to a shortage of staffing
- The study to assess a potential reliever route for freight movement from Freeport to Brookshire has been carried over into FY 2016 due to a shortage of staffing.

### **SUBTASK 5.1 Major Corridor Studies**

The requirements for Major Corridor Studies (MCS), formerly called major investment studies (MIS), have changed with the implementation in 2005 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). The guidelines have been streamlined to reduce costs and the level of effort for studies associated with regionally significant projects. Also, efforts were made to coordinate development of environmental assessments as part of early phases of the corridor analyses.

A MCS may consist of many of the following activities or tasks consistent with the level of feasibility, alternative analyses and/or environmental assessments needed:

- Identify corridor and sub area boundaries, denoting any subdivided areas of analysis within the study area.
- Determination of current and future travel demand along the corridor through travel forecasting support for Major Corridor Studies: Development of input data; Development of travel forecasts; Review of travel forecasts; and Documentation and summary of forecasting methodology and forecasting results.
- Selection of reasonable transportation alternatives, identifying the demand associated with each of those alternatives.
- Perform estimation of the cost effectiveness of each transportation alternative, using financial analysis.
- Documentation of public comments for each alternative. Comments are received via the public involvement process.
- Identification based on technical analysis and public comments, of the preferred transportation alternative or combination of alternatives.

## H-GAC 2016-17 Unified Planning Work Program

---

A combination of funding sources including STP funds will be used for these studies depending, in part, on whether or not a transit alternative is viable for each project.

### **PRODUCTS:**

#### **5.1.a1 PRODUCT REMOVED**

**5.1.a2** Complete US 59/IH 69 corridor congestion mitigation study (**Consultant Assistance Needed - \$90,000**).

### **SUBTASK 5.2 Evacuation Planning**

The massive evacuation from the Houston metropolitan area in response to Hurricane Rita brought into sharp focus the difficulties in evacuating the metropolitan region efficiently and safely. Past planning activities have focused on traffic operations, communications and logistics. Operational improvements have focused on accident detection and management, changes in transit vehicle routing and scheduling, the elimination of bottlenecks at specific intersections and contra-flow lane operations. Current activities have included improving communications with the public and within the emergency response community.

# H-GAC 2016-17 Unified Planning Work Program

---

## **PRODUCTS:**

- 5.2.b1** Continue development and maintenance of the Web Based Evacuation Map, which allows for the tracking by local governments of law enforcement and transportation resource deployments during a hurricane evacuation.
- 5.2.b2** Monitor the Web Based Evacuation Map during an evacuation event.
- 5.2.b3** Update and maintain the Zip Zone and Evacuation Route maps and provide to interested parties as requested.
- 5.2.b4** Provide on-going support and training to local governments and State regarding evacuation-related matters.

## **SUBTASK 5.3 Multimodal Initiatives**

While improving the personal commute is perhaps a primary focus in transportation planning, freight movement is also a critical planning factor within the Houston-Galveston Area Council region. Freight facilities and services are strongly linked to regional economic competitiveness and quality of life and, from a transportation perspective, freight shipments continue to grow steadily across all modes. Planning for freight is also an effective means of addressing safety, security, environmental, and air quality issues.

A major objective of the freight program will be to initiate and sustain meaningful outreach to the local freight community and to build awareness and expertise among planners and the general public. A freight advisory committee will be the focal point of this effort.

As our region continues to grow, aviation planning becomes an increasing need as capacity at the region's primary airports continues to be filled. Improvements at alternative facilities need to be assessed to help alleviate the congestion.

## **PRODUCTS:**

### **Freight Planning**

- 5.3.a1** Provide staffing and coordination for the development of a Freight Advisory Committee, focused on addressing regional goods movement issues as part of the regional planning process and recommended by the Goods Movement Study.
- 5.3.a2** Formally define and designate the Freight Significant Network and work with partners to mitigate short-term deficiencies on the network.

## H-GAC 2016-17 Unified Planning Work Program

---

- 5.3.a3** Facilitate Freight Advisory Committee and freight community input on the major metropolitan transportation process documents and other relevant policy issues, technical studies, and programs.
- 5.3.a4** Incorporate Freight-Specific Measures into Project Evaluation Processes (TIP).
- 5.3.a5** Respond to inquiries, surveys, and requests regarding the region's freight transportation network and freight planning process.
- 5.3.a6** Develop a freight performance measures program, in coordination with the RTP and CMP, to enable agencies to gauge system conditions and use, evaluate transportation programs and projects and help decision-makers allocate limited resources more effectively that would otherwise be possible.
- 5.3.a7** Develop a freight educational outreach effort as recommended by the Regional Goods Movement Study. This will include outreach to shippers, intermodal interests and freight stakeholders as well as developing, maintaining, and updating a user-friendly freight page on the H-GAC website containing freight-related information and data.
- 5.3.a8** Develop, refine and update freight related GIS information and data developed from the Regional Goods Movement Study.
- 5.3.a9** Develop a freight data collection portal to facilitate the exchange of information and a concept of operations for a Freight ITS Program.
- 5.3.a10** Pursue grant funding opportunities through collaborative efforts with the H-GAC Air Quality program.
- 5.3.a11** Conduct study to assess potential system improvement alternatives for freight movement identified from recommendations from the Regional Goods Movement Study (Consultant Assistance Needed - \$1,600,000 (\$1,600,000 STP, 320,000 TDC)
- 5.3.a12** **REMOVED**

## H-GAC 2016-17 Unified Planning Work Program

---

### Task 5 Funding Summary Table

<b>TASK 5 - FY 2016</b>	<b>Task 5.1</b>	<b>Task 5.2</b>	<b>Task 5.3</b>	<b>Task 5 Total</b>
FHWA-FTA TPF	\$ 109,838	\$ 64,864	\$ 43,447	\$ 218,149
STP - Cat 7	\$ -	\$ -	\$ -	\$ -
TxDOT State Funds	\$ 90,000	\$ -		\$ 90,000
TxDOT SPR	\$ -	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ -	\$ -
				\$ -
<b>TOTAL</b>	<b>\$ 199,838</b>	<b>\$ 64,864</b>	<b>\$ 43,447</b>	<b>\$ 308,149</b>

<b>TASK 5 - FY 2017</b>	<b>Task 5.1</b>	<b>Task 5.2</b>	<b>Task 5.3</b>	<b>Task 5 Total</b>
FHWA-FTA TPF	\$ 95,340	\$ 63,749	\$ 56,122	\$ 215,211
STP - Cat 7	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
TxDOT State Funds	\$ -	\$ -	\$ -	\$ -
TxDOT SPR	\$ -	\$ -	\$ -	\$ -
FTA 5304/5307/5309/5339	\$ -	\$ -	\$ -	\$ -
Other Local	\$ -	\$ -	\$ -	\$ -
				\$ -
<b>TOTAL</b>	<b>\$ 95,340</b>	<b>\$ 63,749</b>	<b>\$ 1,656,122</b>	<b>\$ 1,815,211</b>

TxDOT will apply transportation development credits sufficient to provide the match for FHWA PL-112 and FTA Section 5303 programs. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

**This Page Intentionally Left Blank**

**2016-17 UNIFIED PLANNING WORK PROGRAM  
FUNDING SUMMARY**

**2016-17 UPWP Funding Summary**

	Task 1 Admin. / Mgmt.	Task 2 Data Modeling & Maintenance	Task 3 Short Range Planning	Task 4 Long-Range Planning	Task 5 Special Studies	TOTAL
<b>FISCAL YEAR 2016</b>	FTA 44.21	FTA 44.22	FTA 44.24/25	FTA 44.23	FTA 44.26/27	
FHWA-FTA TPF	\$ 2,841,181	\$ 2,796,183	\$ 1,553,407	\$ 2,387,607	\$ 218,149	\$ 9,796,527
STP - Cat 7	\$ -	\$ -	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
TxDOT State Funds	\$ -	\$ -	\$ 45,000	\$ -	\$ 90,000	\$ 135,000
TxDOT SPR	\$ -	\$ -	\$ -	\$ 16,000	\$ -	\$ 16,000
FTA 5304/5307/5309/5311/5339	\$ -	\$ -	\$ 2,140,244	\$ -	\$ -	\$ 2,140,244
Other Local	\$ -	\$ -	\$ 272,700	\$ 195,000	\$ -	\$ 467,700
<b>TOTAL</b>	<b>\$ 2,841,181</b>	<b>\$ 2,796,183</b>	<b>\$ 4,011,351</b>	<b>\$ 3,598,607</b>	<b>\$ 308,149</b>	<b>\$ 13,555,471</b>

	Task 1 Admin. / Mgmt.	Task 2 Data Modeling & Maintenance	Task 3 Short Range Planning	Task 4 Long-Range Planning	Task 5 Special Studies	TOTAL
<b>FISCAL YEAR 2017</b>	FTA 44.21	FTA 44.22	FTA 44.24/25	FTA 44.23	FTA 44.26/27	
FHWA-FTA TPF	\$ 3,090,196	\$ 4,308,362	\$ 1,802,830	\$ 2,116,510	\$ 215,211	\$ 11,533,110
STP - Cat 7	\$ -	\$ -	\$ 131,250	\$ 1,650,000	\$ 1,600,000	\$ 3,381,250
TxDOT State Funds	\$ -	\$ -	\$ 45,000	\$ -	\$ -	\$ 45,000
TxDOT SPR	\$ -	\$ -	\$ -	\$ 40,000	\$ -	\$ 40,000
FTA 5304/5307/5309/5311/5339	\$ -	\$ -	\$ 1,558,145	\$ -	\$ -	\$ 1,558,145
Other Local	\$ -	\$ 500,000	\$ 266,250	\$ 412,500	\$ -	\$ 1,178,750
<b>TOTAL</b>	<b>\$ 3,090,196</b>	<b>\$ 4,808,362</b>	<b>\$ 3,803,475</b>	<b>\$ 4,219,010</b>	<b>\$ 1,815,211</b>	<b>\$ 17,736,255</b>

**TRANSPORTATION PLANNING FUNDS (TPF) ONLY**

Transportation Planning Funds (FHWA PL-112/FTA 5303) funding estimate: \$ 17,893,804

Estimated FHWA PL-112 Carryover from FY 2014-15: \$ 8,288,574

**TOTAL TPF AVAILABLE: \$ 26,182,378**

**TOTAL TPF PROGRAMMED: \$ 21,329,637**

**UNDER (OVER) PROGRAMMED: \$ 4,852,741**

By minute order, the Texas Transportation Commission authorizes the use of transportation development credits as TxDOT's non-Federal share for FHWA (PL-112) and FTA 5303 funds. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

**This Page Intentionally Left Blank**

# STATE & LOCALLY FUNDED PLANNING ACTIVITIES

## HARRIS COUNTY

### **Harris County Public Infrastructure**

Harris County Public Infrastructure is comprised of three separate departments: Harris County Engineering Department, Harris County Flood Control District, and the Harris County Toll Road Authority. The Public Infrastructure Coordination Group is responsible for ensuring coordination and collaboration between these three departments.

### **Harris County Engineering Department**

***Traffic Signal Operation and Maintenance Program.*** Harris County will continue to provide for routine, emergency, and annual preventive maintenance of over 1,250 traffic signals, emergency and school zone flashers that are maintained and operated within Harris County. The annual contract amount for maintenance in FY 14-15 was \$1,150,000.

***Traffic Planning & Engineering Studies.*** Harris County will continue to perform warrant studies for regulatory traffic control devices (i.e. stop signs, signals, speed zones, school zones, etc.) in order to comply with the Texas Manual on Uniform Traffic Control Devices.

***Traffic System Management.*** Houston TranStar is a consortium partnership formed by the transportation and emergency management agencies in the greater Houston region. The partnership is comprised of four agencies, including Harris County. Each partner agency has brought high-tech systems to the state-of-the-art center to control their individual functions. These resources are in-turn available to assist and advise other partner agencies. The Houston TranStar partnership is responsible for coordinating the planning, design and operations of transportation systems and emergency management functions and coordinates the development and deployment of Intelligent Transportation Systems (ITS). ITS technologies such as Speed Sensors, Closed Circuit Television Cameras and Dynamic Message Signs are tremendously helpful to travelers, including transit vehicle operators, when emergency evacuations are conducted or at any other time severe weather threatens the greater Harris County region.

In addition to providing support to the field maintenance and construction activities, the traffic management personnel located at Houston TranStar are aggressively engaged in the development of an advance traffic management program. The primary goals of this group are focused on ensuring that Harris County traffic signal systems are managed in a thorough, cost-effective manner, and enhancing mobility along major traffic corridors

## H-GAC 2016-17 Unified Planning Work Program

---

throughout the County. In order to meet these goals, various state-of-the-art technologies are being implemented. These goals related to the traffic system management program include the development, implementation, and management of traffic signal system control strategies; the fiber optic traffic signal communication network; the development of traffic signal communication equipment standards; and the implementation of practical, new technology.

***Air Quality or Emission Related Studies.*** Harris County will continue to work with TxDOT and other agencies to provide local matching funding in the Congestion Mitigation and Air Quality (CMAQ) Program for projects that will improve air quality by reducing traffic congestion.

***Roadway Projects and Low Impact Development.*** There are several roadway related requirements that Harris County must comply with in its State issued Texas Pollutant Discharge Elimination System (TPDES) Municipal Separate Storm Sewer System (MS4) permit. One such requirement is to operate roadways in a manner that minimizes the discharge of pollutants into our waterways. Harris County is meeting the permit requirements by developing controls to effectively prohibit non-storm water discharges to the drainage system and to reduce the discharge of pollutants from the municipal separate storm sewer system (MS4) to the maximum extent practicable.

One popular method to reduce the discharge of pollutants from our waterways is through Low Impact Development (LID) design principles. Harris County evaluates usage of LID in its roadway designs and is a leader in spearheading the practices on roadways. Harris County's first LID roadway constructed, Birnamwood Drive, has won national and regional awards for its innovative design from the American Society of Civil Engineers and from the Environmental Protection Agency, Region VI. Harris County also has developed, together with the Harris County Flood Control District, a Low Impact Development & Green Infrastructure Design Criteria Manual being used on both its own public projects as well as private projects in the region. The manual contains a separate section on roadway design using LID, which is utilized on Harris County's own LID roadway projects.

### **Harris County Toll Road Authority**

***Capital Improvement Plan.*** The Harris County Toll Road Authority (HCTRA) is responsible for planning and implementing facility expansion of the County's toll road system. The existing system includes the Sam Houston Tollway (BW 8), Hardy Toll Road, Westpark Tollway, and the Tomball Tollway (SH 249). The plan includes expanding the capacity of the existing system by widening lanes or adding extensions, ramp and mainlane plaza improvements to allow the increased use of electronic toll tags, and existing tolling

## H-GAC 2016-17 Unified Planning Work Program

---

system upgrades to adequately process the tolls. HCTRA coordinates the plan with other regional transportation providers such as TxDOT, METRO, and local cities/counties to improve mobility by maximizing the effectiveness of all projects. The current plan of projects, approximately \$1.4 billion, will require bond fund, commercial paper, and revenue fund financing to implement.

### **Port of Houston Authority**

The Port Authority plans to undertake significant infrastructure improvements in the next few years to ensure that the Port of Houston can accommodate the advent of larger vessels and increased cargo resulting from the expected 2016 completion of the Panama Canal expansion, the anticipated future demographic growth in the region and the increased trade created as a result of the oil and gas industry growth driven by shale exploration and drilling. Maintaining and improving efficiency at the public terminals through more modern facilities and equipment is essential to promote and facilitate commerce that will benefit not only local partners, but also Texas and the nation. The Port Authority will continue the 10 year, \$1.7 billion capital improvement program for the continued development of the Bayport container terminal and the modernization of the Barbours Cut Terminal. The Port Authority is also in the midst of a 5 year, \$100 million capital improvement project at the general cargo and bulk terminals in the Turning Basin area. Lastly, Congress has authorized the Corps of Engineers and PHA to conduct a 3 year, \$3 million feasibility study which will review parts of the Houston Ship Channel system, to include the POHA container terminals, for improvement. It will also review extending the reach of the 45' ship channel upstream to service additional petrochemical terminals, and extending the 40' channel upstream to the I-610 bridge, where PHA's Turning Basin heavy lift wharf could service larger ships. The 36' channel will be studied for deepening, and selective navigation changes in the 45' channel (including passing lanes and mid-bay anchorages) will be considered to assure safe navigation and free movement of vessels. Approval of the study and subsequent federal appropriations will require competitive benefit/cost ratios. With the accelerated study period, construction of one or more of the projects could occur as early as 2022. The cumulative cost of improvements for the Port Authority could be \$300M-\$600M, including environmental mitigation and restoration features.

### **Harris County Homeland Security & Emergency Management**

The Harris County Office of Homeland Security and Emergency Management (OEM) will help prepare, safeguard, and protect the citizens and property of Harris County from the effects of natural or manmade disasters, catastrophes, or threat thereof through effective planning, preparation, response, and recovery activities. To accomplish this

# H-GAC 2016-17 Unified Planning Work Program

---

mission, the Harris County OEM will:

- Coordinate and maintain a comprehensive emergency management plan.
- Activate and staff an Emergency Operations Center (EOC) to coordinate and support efforts to respond to, and recover from, emergencies and disasters.
- Provide and coordinate the delivery of effective public outreach programs.
- Collect, provide, and disseminate information for elected officials, the media, our citizens, partners, and other stakeholders.
- Train, educate, and prepare for emergencies through the development and delivery of effective classes, drills, and exercises.

## **Harris County Hazardous Materials Transport Team**

The main responsibilities of The Harris County Hazardous Materials Response Team (HAZMAT) include response, identification, and control of hazardous materials; supporting local fire & law enforcement in hazardous materials spills & releases; and training local first responders. HAZMAT offers specialized training courses that comply with OSHA, NFPA, and JCAHO standards for response to hazardous materials emergencies. Services include consultation on hazards, mitigation, and scene safety; general HAZMAT sector oversight during large scale, complex, or prolonged incidents; and management of transportation emergencies.

## **Harris County Spatial Data Committee**

The Harris County Spatial Services Committee was established by Commissioners Court in 2009 to collect, maintain, and distribute Harris County geographical data. This committee represents the needs of Harris County, its residents, and other regional agencies who have interests in creating and maintaining maps, databases, and overlays of information related to geographical analysis. The committee is currently developing a centralized repository to allow for viewing interfaces and mapping solutions for the services provided by Harris County.

## **HARRIS COUNTY COMMUNITY SERVICES DEPARTMENT OFFICE OF TRANSIT SERVICES**

The Harris County Community Services Department (Formerly the Harris County Community and Economic Development Department) is a recipient of Federal Transit Administration funding. Harris County and the surrounding counties in the region have a

## H-GAC 2016-17 Unified Planning Work Program

---

high level of interagency cooperation and utilize intergovernmental cooperation in their planning process.

The Office of Transit Services (“OTS”) is an active participant in this cooperative effort to create and operate a transportation system and programs that meet the needs of Harris County citizens. OTS participates on the region’s Transportation Policy Council, the Technical Advisory Committee, and the many interagency subcommittees of the Houston-Galveston Area Council (“H-GAC”) such as the Regional Transportation Plan; Transportation Improvement Program; Regional Transit Coordination; and Transportation Air Quality Subcommittees. OTS also works closely with Houston METRO, Fort Bend Transit, Connect Transit of Galveston County and The Friendship Center - Montgomery County Committee on Aging of Montgomery County to implement state and federally required planning procedures. OTS will continue to work closely with H-GAC and other area transportation providers to develop and implement policies and programs.

**Data Development and Maintenance Activities.** OTS routinely collects and monitors a wide range of performance data to ensure that the OTS programs are achieving desired goals. Route level data is collected and monitored to provide input for route modifications to better serve the public and operate more efficiently. OTS anticipates that data collection efforts will continue during FY 2016-2017, and we will continue to collect operational data on a monthly basis. Data collected includes but is not limited to daily/monthly/yearly ridership, boarding location trends, revenue hours and miles, service interruptions, peak traffic patterns and bus stop requests. The work program will include ongoing monitoring of data and model performance and coordination with H-GAC staff.

During FY 2014 and early FY 2015, OTS deployed a new publically available bus tracking system provided by Ride Systems. The system provides near real-time location, direction of travel, and estimated time of arrival information to our transit customers. The system can be accessed either over the internet or through various Smart Phone applications.

**Short-Range Planning Activities.** OTS planning staff is responsible for updating the Transit Services Program. All existing and proposed routes are evaluated in terms of cost and projected ridership. Routes are periodically updated to identify potential improvements. Planning staff will also conduct research on underperforming routes to determine if changes would improve ridership.

OTS will continue to monitor all existing services to determine their efficiency and to identify possible improvements. Service studies and other planning activities will be done on potential and existing routes and park and ride services. OTS will also conduct the following short-range planning activities within the FY 2016-2017 years:

## H-GAC 2016-17 Unified Planning Work Program

---

**Park and Ride Service & Lot** – OTS operates one park and ride lot in Baytown, Texas. This project is operated from the San Jacinto shopping mall parking lot under five year use agreements. There is no charge for the use of the lot. Due to the temporary nature of this location OTS will intended to undertake a review and analysis of an alternative location in the spring of 2014. However, the parking lot was placed under an additional use agreement for an additional five years.

OTS will continue to seek other regional opportunities to promote Park and Ride service to eastern and northwest Harris County. This would include conducting feasibility studies to determine the long term viability of present locations or seeking new locations within the region.

**Fixed Route Services** – In July 2008, OTS began fixed route service in the City of Baytown, Texas in eastern Harris County. In January 2010, OTS began additional fixed route service to The Highlands, McNair, Barrett Station, Crosby, and La Porte. The City of Baytown has purchased and installed bus passenger shelters through OTS utilizing FTA 5307 Capital funds requiring a 20% match. Additional shelters are planned for expansion in Baytown and in the La Porte service area. OTS continues to review potential expansion of services in the State Highway 249 and FM 2920 corridors of Harris County.

**Medical Delivery Services** – CSD will continue to operate the Harris County Medical Delivery Services program. This program is a 55 year old social services lifeline to the community and serves seniors, people with disabilities and low income individuals for medical trips such as dialysis and doctors' appointments. These residents must live in the unincorporated areas of Harris County or the following communities: Channelview, Deer Park, Galena Park, Highlands, Jacinto City, La Porte, McNair, Morgan Point, Shore Acres, South Houston, Seabrook and Webster.

**Harris County RIDES** - a county wide Non-emergency Transportation program has been in operation within Harris County since 2003. The program serves the needs of seniors, people with disabilities who are residents of the County that are either not served or underserved by Houston METRO.

This program is vital to the community because RIDES coordinates many local transportation resources to provide basic mobility for people with disabilities, seniors and low-income residents. It brings together the clients, non-profit and for profit local providers and local non-profit agencies in a coordinated approach and in many respects performs the services of a Regional Mobility Manager. RIDES fills in the gaps to

## H-GAC 2016-17 Unified Planning Work Program

---

provide non-emergency transportation service that is curb-to-curb demand response service. The program is a subsidized voucher program that allows eligible customers and participating agencies to purchase transportation services at a discount. Customers are able to select shared ride providers or taxi cabs to meet their transportation needs. Taxi cabs offer RIDES clients the flexibility to have service 24 hours per day, seven days a week. It is an effort to provide seniors and people with disabilities independence in their communities for as long as possible.

In addition, RIDES offers mobility management through its' RIDES+ program by providing one-stop shopping for transportation information and assistance to older adults, and persons with disabilities in Harris County and beyond. RIDES+ provides mobility management as the human-to-human link for assisting this targeted population with overcoming travel challenges, and as a result, enable older adults and people with disabilities the ability to remain living independently in the community. RIDES+ extends the Harris County RIDES core transportation coordination program by addressing the greater issue of "mobility" or "lack of mobility" experienced by older adults and persons with disabilities. Community mobility is vital to quality of life. Through this effort RIDES and United Way 211 have forged partnerships to educate and assist seniors and people with disabilities in the H-GAC 13 county area. Questions regarding resources or transportation for this target audience are on line transferred or referred to Harris County RIDES. Evaluation of services and outreach programs are necessary to evaluate success and require ongoing planning services. Customer surveys are an important part of this process and surveys are conducted annually.

In October of 2011, Harris County Transit deployed an electronic debit fare card and data collection system to offer improved access and more efficient services to RIDES clients. This solution replaced paper tickets and uses swipe card technology and provides interface with both Taxi Cab companies, and shared-ride providers. This implementation also provided other services such as Global Positioning Service (GPS) for shared ride providers by use of electronic readers for the fare card. Taxi system terminals by interface with the fare card provide the same trip information. Phase II of the fare card implementation project was completed in 2014 and provides enhanced services to clients in the form of Integrated Voice Response ("IVR") and the ability to load funds on cards using credit card processing using the internet. IVR allows clients to access card balances via telephone.

Under the RIDES program, since 2012, other interlocal agreements with The Harris County Healthcare Alliance, The Gulf Coast Center, and The Montgomery County Friendship Center have been established and will continue into 2016-2017. These special

## H-GAC 2016-17 Unified Planning Work Program

---

contracts allow for expansion of coordination efforts in the Gulf Coast Region using the existing RIDES provider infrastructure and RIDES mobility management.

**State & Locally Funded Planning Activities.** OTS participated in the development of The Gulf Coast Region Public Transportation Coordination Plan and participated in development of the 2011-2014 Transportation Improvement Program (TIP). OTS will participate in the upcoming FY 2015-2016 Regional Public Transportation Coordination Plan. OTS intends to expend local and federal funds in support of these planning activities.

**Long-Range Planning Activities.** Harris County and OTS are participants in the development of the region's Regional Transportation Plan ("RTP") and the Regional Transit Framework and Transit Plan. As such, OTS will continue to coordinate its transit activities with other transit providers where feasible including its planning activities. The Harris County Comprehensive Transit Strategy identifies the overall system program for Harris County OTS through 2016 and identifies corridors and communities for potential development of services. OST will continue to explore other service opportunities in those areas not served or underserved by Houston METRO

### **Special Studies & Activities**

**Feasibility Studies** – OTS may undertake or participate in feasibility studies for additional services including fixed route, deviated fixed route and additional Park and Ride services. These studies may lead to further planning activities and the development of Interlocal agreements for the provision of services. Feasibility analysis and studies will be conducted in the following areas: Baytown (permanent location analysis of Baytown Park and Ride location); planning and feasibility studies to determine expansion of services in the State Highway 249 and FM 2920 corridors' of Harris County and could include a connection to the Exxon/Mobil Campus at FM 2920 and Interstate Highway 45.

**Geographic Information Systems (GIS)** - OTS is presently utilizing Automated Vehicle Location (AVL) systems on its fixed route service corridors. The use of these systems has enabled OTS to determine which transit stops have the highest usage and thereby determine the need for transit shelters. In addition, onboard surveys taken of transit users in Baytown now request the address of the rider in order to locate their proximity to the transit line enabling OTS to gauge rider behavior.

**Grant Planning, General Transit Planning, Training and Planning Administration** – These tasks supports OTS planning activities related to grant development and management, financial management and transit operations and participation in regional planning activities.

## H-GAC 2016-17 Unified Planning Work Program

---

**Marketing Activities** - OTS marketing activities includes developing and distribution of materials, such as schedules and maps, brochures, and destination guides. These materials are also available on the OTS's Web site. All comprehensive communication is conducted in English, Spanish, and Vietnamese Non-traditional marketing is used such as community outreach, participation in exhibits and conferences and word of mouth.

**Customer Surveys** – Customer surveys are conducted at least annually. The surveys are designed to determine the satisfaction OTS riders with the various services provided and to determine origins, destinations and demographics of passengers.. Data is collected via self-administered surveys or through the interview process by an OTS representative. In addition to measuring satisfaction, results from this survey are used to pin point areas for improvement.

**Bicycle Racks** – Bike racks have been installed on all buses providing fixed route service. As transit shelters are established, shelter bike racks will be provided on the basis of customer surveys.

**County Staging Area (“CSA”)**- In 2013, OTS was identified as the operations administrator of the County Staging Area (“CSA”) for Harris County in coordination with the Office of Homeland Security and Emergency Management (“OEM”). The County CSA and Point of Distribution (“POD”) operations are for jurisdictions within Harris County (and include The City of Houston). The CSA location is pre-identified and must be capable of receiving resources within 24 hours post disaster event. The CSA operates in accordance with National Incident Management Systems (NIMS).

The role of OTS for the CSA is to coordinate state resources between the Regional Staging Area (“RSA”) and POD sites; Communicate with OEM, POD’S and RSA, Document resources shipped to POD’s, Evaluate POD locations and their commodity use rates. The major levels of responsibility for the CSA TEAM is CSA Operations, Logistic Operations, Planning and Administration/Finance tracking.

The CSA Team consists of 18 people who are NIMS certified and will be mobilized in the event of natural or other events that require the deployment of PODS.

## **METROPOLITAN TRANSIT AUTHORITY OF HARRIS COUNTY (METRO)**

### ***Before and After Studies***

METRO currently has one federally funded light rail line under construction and one line that has recently opened. The North Corridor light rail line was opened in December 2013 and the Southeast Corridor light rail line is scheduled to open in 2015 with the help of Full Funding Grant Agreements (FFGAs) from the Federal Transit Administration (FTA) which will provide over 50% of the funding to build the two projects. FTA's Final Rule on Major Capital Investment Projects (December 2000) includes a provision whereby sponsors seeking an FFGA for their New Starts project must submit to FTA a plan for the collection and analysis of information leading to the identification of the impacts of the project and the accuracy of the forecasts which were prepared during project planning and development. As a condition of receiving an FFGA, METRO must commit to carrying out the defined elements of the aforementioned plan, resulting in the completion of a Before and After Study. The Before and After Study has two distinct and important purposes: (1) to expand insights into the costs and impacts of major transit investments; and (2) to improve the technical methods and procedures used in the planning and development of those investments.

In addition to the federally funded North and Southeast light rail lines, METRO will conduct the same analysis for the locally funded East End light rail project, which is also under construction and will open in 2015.

### ***Transit Facility Studies***

In order to meet growing demand for park & ride service to communities throughout its service area, METRO will assess existing capacity at existing park & ride facilities and evaluate them for expansion. In addition, METRO will evaluate the demand for new park & ride service and facilities. A site selection process as well as environmental clearance will be necessary in the event METRO needs to expand or build new park & ride facilities. A preliminary assessment indicated that the West Bellfort, Grand Parkway and Cypress Park & Ride locations require further analysis for expansion.

### ***Transit Amenities Study***

METRO has established a set of service standards regarding various attributes of service. Among these attributes are amenities such as passenger shelters, benches, trash receptacles, etc.. A formal study is needed to assess the impact of amenities on safety and ridership.

# H-GAC 2016-17 Unified Planning Work Program

---

## ***METRO Bike and Ride Plan Implementation***

METRO worked with H-GAC to complete bicycle access and accommodations recommendations through the awarded Subregional Planning Initiative grant for the Bike & Ride Access & Implementation Plan. Completed in 2014, METRO has been working internally toward implementation of capital, programmatic and policy recommendations. In order to meet community needs and provide increased access to transit facilities and services, METRO will continue to evaluate and incorporate recommended biking accommodations projects into the agency's Capital Improvement Program (CIP) and long-term plan. The Bike & Ride projects will enhance METRO's ongoing sustainability efforts and long-term system planning.

## ***Uptown Houston Management District's Uptown Houston Mobility Project***

METRO has entered a working partnership with the Uptown Houston Management District (UHMD) to support their proposal to reconstruct and widen Post Oak Boulevard, build an exclusive transitway with direct connections to the Northwest Transit Center, and construct a proposed Bellaire Uptown Transit Center with direct access to the Southwest Freeway. Through this partnership, METRO wishes to significantly upgrade the level of transit services to one of our most economically crucial communities, accelerate the construction of critical transit infrastructure, and leverage the resources of the Uptown District and METRO to accomplish the project in a more timely fashion.

METRO will assist UHMD in project development including planning, environmental review and clearance, and engineering. Once the project is developed and constructed, METRO will ultimately assume responsibility for providing service.

## ***Origin/Destination Passenger Survey (METRO)***

In order to determine the transportation needs and appropriate solutions for a region, it is important to have an understanding of the underlying characteristics of travel. METRO has conducted multiple origin/destination passenger surveys since its inception (METROBus: 1985, 1990, 1995, 2001, 2007, 2011, 2014-2015; METRORail: 2004, 2007, 2014-2015). With the opening of new light rail lines in the East End and Southeast rail corridors as well as the complete re-design of the local bus network in FY2015, it would be expected that there could be significant demographic changes in customers and travel patterns. Origin/destination surveys allow METRO to collect pertinent information to better understand customers and travel patterns. These data are used for a multitude of planning purposes including travel forecasting, route realignment, and customer service initiatives. As part of METRO's Title VI / Environmental Justice reporting requirement, METRO has committed to conduct an origin / destination passenger survey at least every three years.

## H-GAC 2016-17 Unified Planning Work Program

---

METRO proposes to work with H-GAC on its 2017 regional origin/destination passenger survey, leveraging resources to provide the best results for the region.

### ***Location of New Bus Operating Facility (METRO)***

Presently, METRO operates service from five METRO-owned operating facilities (Fallbrook, Hiram Clarke, Kashmere, Polk, and West) and two contract/purchased transportation facilities (MV and Northwest). These bus operating facilities are located primarily in the eastern part of METRO's service area and have limited room for additional vehicles. A significant portion of METRO's ridership and ridership growth is occurring in the western part of METRO's service area. There will be a need for an additional bus operating facility with space for additional vehicles as bus service expands. A study to determine the optimal location for a new facility should be undertaken, beginning in the next two years.

### ***Before / After Study of METRO's New Bus Network (formerly Transit System Reimagining)***

In FY2013, the METRO Board of Directors directed staff and a consortium of external consultants led by Traffic Engineers, Inc. (TEI) to develop a top-to-bottom review of the existing system, identifying elements that should be retained, modified, changed, or discarded along with innovations which can be implemented to generate increased usage (ridership) or retention of coverage in select low density / low ridership / transit dependent areas through the application of a best practices examination of transit industry options. Prior to the start of the re-design, the external consultants prepared an existing conditions report which will serve as the "before" study. Following a maturity period, an "after" study is needed to assess the impact of the re-design implemented as METRO's New Bus Network.

### ***Northwest Transit Center Expansion and Reconfiguration***

METRO is undertaking a series of actions to reconfigure and expand the Northwest Transit Center (NWTC) within the existing footprint due to TxDOT's US 290/IH 610/IH 10 interchange reconfiguration as well as the US 290 reconstruction project. METRO's Pinemont Park & Ride ramp to US 290 has been removed and the park & ride has closed. The closed park & ride has forced commuters to use the already full parking located at the NWTC resulting in illegal parking at the NWTC. This project is also a key element of METRO's Transit System Reimagining as it provides connectivity at a point in the system network where a large amount of transit service is set to converge. Significant new local and commuter service will be using the NWTC as a key transfer and connection facility.

In addition, the reconfiguration and expansion at the NWTC will accommodate operations to serve the Uptown District using the dedicated bus lanes along Post Oak Boulevard, and

## H-GAC 2016-17 Unified Planning Work Program

---

accommodate current and anticipated demand from the Katy and Northwest corridors. The current NWTC has been in operation since 1990 and includes 12 bays along with 195 parking spaces. The transit center is located at the convergence of IH-610 and IH-10 on two sides. The remaining edges of the transit center property are lined with local access roads and light industrial land uses. The modifications being proposed are being made on the existing footprint of the NWTC along with some parking on TxDOT property which is allocated for High Capacity Transit.

### *Capital Project Update of Long Range Plan*

METRO's long range plan consists of the voter approved 2003 METRO Solutions referendum. To date there have been no updates to this plan. Due to significant changes to the METRO bus system from System Reimagining, it is essential that METRO reevaluate its capital projects and priorities to align and best serve the bus system and overall METRO service area. As the bus network greatly influences the use of and need for capital facilities, it is a priority to the METRO Board of Directors to strategically look at the existing capital projects and evaluate their impacts and need with the new bus system. Staff will lead an effort to prioritize capital projects in the METRO Solutions Plan as well as identify new capital projects for the short or long term that will be of benefit to the METRO service area. This effort will begin in fiscal year 2015 and conclude within fiscal year 2016.

### **CITY OF MISSOURI CITY**

- The City is conducting an update of the City's Comprehensive Plan, which will reassess the City's projected population trends, Land Use, Zoning, and Traffic Management components.
- The Traffic Signal group will be modifying the City's Intelligent Transportation System servers to allow for traffic counts to be taken on an annual basis. The ITS web-based traffic map will receive an upgrade with the addition of real-time traffic speeds and DMS messages for public viewing. The group will also continue to perform signal timing studies as needed, as well as ongoing signal maintenance.
- The City's Pavement Maintenance and Management Program will undergo an update with a complete survey of all city streets segment conditions. A concurrent survey of all city sidewalks will be performed creating a new asset feature in the City's asset management system. The Streets crews will continue to perform emergency repairs and routine maintenance on city roadways as needed.

## H-GAC 2016-17 Unified Planning Work Program

---

- The City's Traffic Management Plan, which contains the Thoroughfare Plan, will continue to be assessed for any necessary updates.
- Traffic Engineering studies, including signal, stop sign, and cross walk warrants, will continue to be performed as needed.

### **ENERGY CORRIDOR DISTRICT**

The following is a list of The Energy Corridor District's possible 'locally-funded' transportation-related air quality or planning activities:

- IH 10 Intersections Enhancement Project (construction).
- The Energy Corridor CarShare Program expansion (includes NuRide and METRO RidePro) .
- The Energy Corridor Bicycle Master Plan Update (on-going).
- The Energy Corridor Bicycle Counts Study (on-going).
- West Houston Trails Master Plan Update (on-going).
- Eldridge Parkway and Memorial Drive ITS Study (on-going).
- METRO Reimagining Bus Route extensions and headway revisions (on-going).
- Park Row / N.Dairy Ashford Intersection Improvements.
- Eldridge Parkway / Briar Forest Drive Intersection Improvements.
- Eldridge/Westheimer Intersection Improvements.
- Roadway improvements for Grisby Square restaurants .
- Traffic signals at Grisby / SH 6 intersection.
- Shared-use trail on Addicks-Howell from IH-10 to Buffalo Bayou.
- Ped/bike bridge over Buffalo Bayou connecting Terry Hershey Trail to Addicks Howell trail.
- Pedestrian and bicycle improvements along Memorial Drive from SH 6 to Eldridge.
- Pedestrian bridge over Langham Creek on north side of Memorial Drive.
- Eldridge Parkway Cycle-tracks, walkways and Dutch corners.
- New traffic signals poles and arms on Eldridge Parkway intersections.
- Reduce width of Briar Forest medians and add buffered bike lanes.
- Patterson / Eldridge Shared-Use Trail connecting Cullen, Bear Creek and Terry Hershey Parks to the Addicks Dam - Chatterton Trail.
- Cullen Park entrance traffic signals at Saums Road.
- Park View sidewalks and buffered bike lanes between Saums Road and Barker Cypress Road.
- Barker-Cypress shared-use trail connecting Park View to Park Row.

## H-GAC 2016-17 Unified Planning Work Program

---

- A pilot project to create a plan to transform the segment of Eldridge Parkway between Memorial Drive and Briar Forest to establish a new standard of complete streets in the Energy Corridor.
- Using the pilot Eldridge Parkway project as a model, initiate a plan for Park Row from Eldridge Parkway to SH 6 to transform this segment into a safer, more pedestrian- and bicycle-friendly roadway.
- Based on the Energy Corridor's Master Plan vision and developed models, initiate commuter transit services from major Energy Corridor worker residential origins, to include Ft. Bend County, Katy, and Cypress areas.
- Based on the Energy Corridor's Master Plan vision and developed models, initiate Energy Corridor internal transit circulator services to foster less reliance upon automotive travel by area workers and residents.

**This Page Intentionally Left Blank**

# **Appendix A**

---

## **Transportation Policy Council and Technical Advisory Committee Memberships**

**This page intentionally left blank.**

# H-GAC 2016-17 Unified Planning Work Program

---

## **Introduction**

H-GAC has been designated by the Governor of Texas as the Metropolitan Planning Organization for transportation planning in the Houston-Galveston metropolitan area. The metropolitan area includes Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties. Under the provisions of the Intermodal Transportation Efficiency Act (ISTEA), this eight-county area has also been designated as a Transportation Management Area (TMA).

## **Transportation Policy Council (TPC)**

With the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 by Congress, the roles and responsibilities of Metropolitan Planning Organizations (MPOs) changed significantly. MPOs, in cooperation with their State governments, were now responsible for developing transportation plans and programs for urbanized areas. Under the provisions of ISTEA, each MPO develops and implements transportation plans and programs with the advice and consent of a transportation planning committee.

The H-GAC MPO's Transportation Policy Council (TPC) was formed in 1992 to reflect the enhanced role of the transportation planning committees in selecting and programming transportation projects mandated by ISTEA. The TPC provides several important functions. First, it serves as the MPO's policy board. Second, it is responsible for approving all region-wide federally-funded transportation plans and programs, developed in a manner constant with federal and state regulations. Finally, it provides policy guidance on transportation issues to the H-GAC Board of Directors. H-GAC provides staff support to the TPC, and its various subcommittees described below.

Membership on the TPC consists of chief elected officials and/or their designated alternates from the five major cities and each of the eight counties within the TMA. The Texas Department of Transportation (TxDOT) and the Metropolitan Transit Authority of Harris County (METRO) each have a representative on the TPC. Counties and cities without voting members are represented by members appointed by the H-GAC Board of Directors. Three additional membership positions were added to the TPC in January 1999. Two positions were for smaller cities in Brazoria County and Harris County, and one for other transportation interests. The TxDOT- Beaumont District was added in 2005. The Gulf Coast Rail District was included in 2010.

## **Technical Advisory Committee (TAC)**

Due to the increasing administrative and technical complexities of transportation projects and policy considerations within the TMA, the TPC create the Technical Advisory Committee (TAC) in 1992 to assist with technical advice and analysis of MPO transportation plans and projects. The TAC is a permanent standing committee of the TPC. Membership in the TAC is comprised of officials, professionals, and as appropriate, citizens who have technical expertise in developing and implementing transportation plans and projects. Membership is representative of various transportation modes and interests to ensure that a broad spectrum of perspectives is considered during the review and analysis of transportation plans and proposals.

## H-GAC 2016-17 Unified Planning Work Program

---

In order to efficiently perform its advisory duties, the TAC has created the following subcommittees:

**Pedestrian & Bicycle Subcommittee** - The Pedestrian and Bicycle Subcommittee is responsible for providing guidance and recommendations to MPO staff in updating and implementation of the Regional Bikeway Plan.

**Transportation Improvement Plan (TIP) Subcommittee** - The TIP Subcommittee is responsible for providing guidance to MPO staff in the development of the TIP. This subcommittee recommends guidelines for the ranking of proposed TIP projects, as well as provides guidance for major TIP amendments and funding decisions.

**Operations Task Force** - The Operations Task Force is responsible for the development of a comprehensive conceptual plan for regional traffic operations projects.

**Regional Transportation Plan (RTP) Subcommittee** - The RTP Subcommittee assists MPO staff in the development of the Regional Transportation Plan. The subcommittee examines and makes recommendations regarding proposed RTP projects and activities and ensures that these proposals are consistent with the TIP and other regional plans.

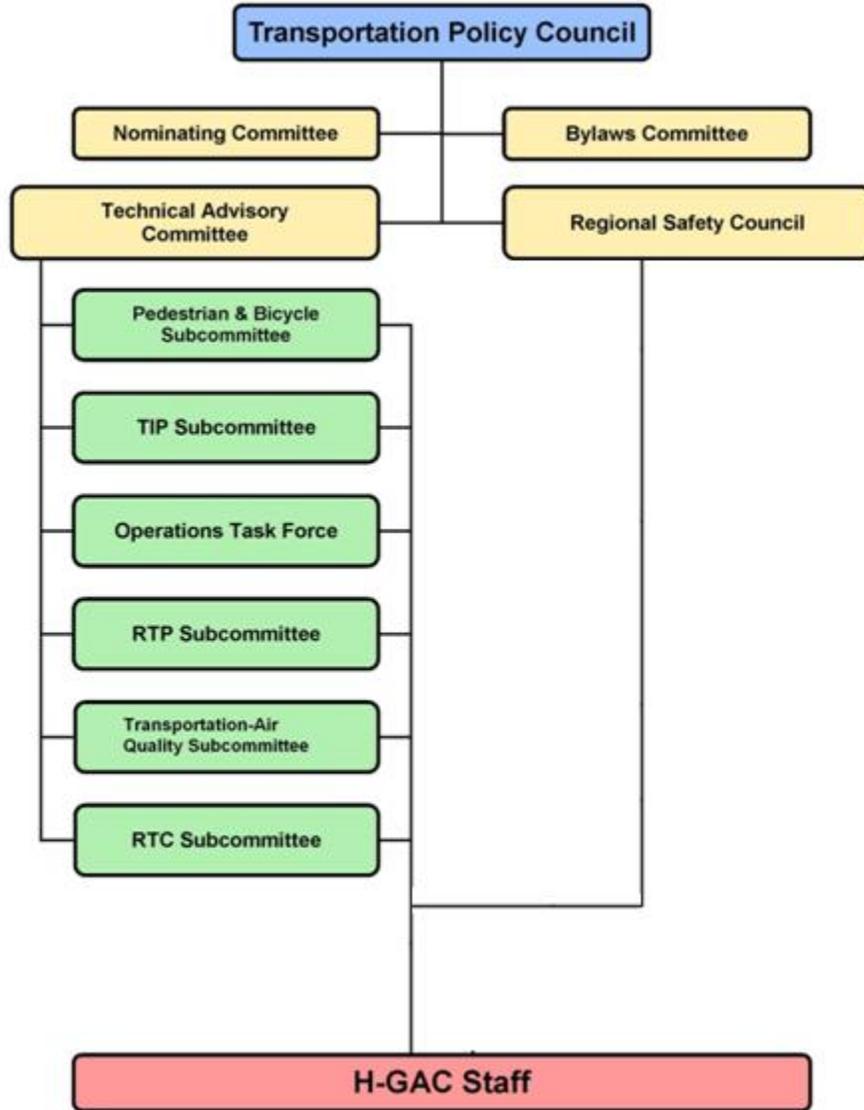
**Transportation-Air Quality (TAQ) Subcommittee** - The TAQ Subcommittee assists MPO staff in expanding existing TDM programs and projects and developing new programs for TIP consideration and inclusion as well as implementation of those projects or programs that are consistent with and meet or exceed the Air Quality and Commute Solutions Cost-Benefit Analysis. It also assists MPO staff with the development of on-road transportation emission reduction measures.

**Regional Transit Coordination (RTC) Subcommittee** - The RTC Subcommittee provides guidance regarding the implementation of regional transit coordination pilot projects. The subcommittee also assists with development of initiatives that expand and improving the efficiency and effectiveness of the current regional transit system.

### **Regional Safety Council (RSC)**

In August 2005, the TPC established the RSC to address the region's increasing traffic safety issues. The RSC's mission is to advise and make recommendations to the TPC regarding traffic safety policy. In addition, the RSC is responsible for encouraging safety education, effective law enforcement, safety engineering, emergency service activities, and infrastructure investments to help reduce the number and severity of traffic crashes, injuries and fatalities in the region. The RSC consists of 24 members from a broad spectrum of safety-related professions. Membership includes officials and professionals from local and State governments, transportation, law enforcement, health care, insurance, trucking, railroads and non-profit organizations involved in safety.

**Figure A-1**  
**Metropolitan Planning Organization Committee Structure**



## H-GAC 2016-17 Unified Planning Work Program

### TRANSPORTATION POLICY COUNCIL (TPC) – 2015

#### TPC Officers

Representing	Officer	Alternate
City of Houston	<b>Chairman</b> Hon. Stephen C. Costello Council Member, At-Large 1	Hon. Larry Green Council Member, District K
City of Pearland	<b>Secretary</b> Hon. Tom Reid Mayor, City of Pearland	Jon Branson City Manager
Brazoria County	<b>First Vice Chair</b> Hon. Matt Sebesta, Jr. County Judge	Hon. David Linder Commissioner, Pct. 2
City of Pasadena	<b>Second Vice Chair</b> Hon. Darrell Morrison, P.E. Council Member, District H	Sarah Benavides, P.E. Planning Director
Harris County	<b>Past Chair</b> Hon. Ed Emmett County Judge	Richard Zientek Director of Transportation Issues

#### TPC Members

Representing	Member	Alternate
TxDOT Houston District	Quincy Allen, P.E. District Engineer	VACANT
Liberty County	Hon. Eddie Lowery County Commissioner, Pct. 3	Hon. Leon Wilson County Commissioner, Pct. 4

## H-GAC 2016-17 Unified Planning Work Program

Representing	Member	Alternate
City of Conroe	Scott Taylor Director of Public Works	Thomas Woolley Project Manager
Galveston County	Hon. Kenneth Clark Commissioner, Pct. 4	Hon. Ryan Dennard County Commissioner, Pct. 1
Gulf Coast Rail District	Bert Keller Chairman	Maureen Crocker Executive Director
City of Missouri City	Scott Elmer, P.E. Assistant City Manager	VACANT
TxDOT Beaumont District	Tucker Ferguson, P.E. District Engineer	Phillip Lujan, P.E. Director Transportation Plng & Dev.
Smaller Cities, Harris County	VACANT	Hon. Pat McLaughlan Council Member, City of Bellaire
Fort Bend County	Hon. James Patterson County Commissioner, Pct. 4	Paulette Shelton Director of Public Transportation
City of Sugar Land	Hon. Harish Jajoo Council Member, District 4	Hon. Joe Zimmerman Council Member, At Large
Chambers County	Hon. Rusty Senac County Commissioner, Pct. 4	Robert Hall, P.E. County Engineer
City of League City	Hon. Tim Paulissen Mayor	Hon. Nick Long Council Member, District

## H-GAC 2016-17 Unified Planning Work Program

Representing	Member	Alternate
METRO	Gilbert Garcia Chairman	Thomas Lambert President & CEO
City of Texas City	Doug Kneupper, P.E. City Engineer	
City of Houston	Dale Rudick, P.E. Director, Public Works & Engineering	Jeff Weatherford, P.E. PTOE Deputy Director
City of Baytown	Hon. David McCartney Council Member, District 6	Hon. Robert Hoskins Council Member, District 5
Montgomery County	Hon. Charlie Riley County Commissioner, Pct. 2	Hon. Craig Doyal County Judge
City of Houston	Hon. Dwight Boykins Council Member, District D	Hon. Brenda Stardig Council Member, District A
Harris County	Hon. Steve Radack County Commissioner, Pct. 3	Gary Trietsch, P.E. Director, Harris County Toll Road Authority
Other Transportation Interests	Janiece Longoria Commissioner & Chairman, Port of Houston Authority	Glenn Carlson Executive Director, Port of Freeport
City of Galveston	Hon. Ralph McMorris Council Member, District 3	Hon. Norman Pappous Council Member, District 1
Waller County	Hon. John Amsler County Commissioner, Pct. 1	Orval Rhoads, P.E. County Engineer

## H-GAC 2016-17 Unified Planning Work Program

Representing	Member	Alternate
H-GAC At-Large	Jack Steele Executive Director, H-GAC	Chuck Wemple Director of Operations

### TPC Ex-Officio Members

Representing	Ex-Officio Member
8-County Region Representatives	Representative Allen Fletcher
8-County Region Representatives	Senator Sylvia Garcia
Freight Rail Interests	Hugh McCulley BSNF Railroad
Freight Rail Interests	Brenda Mainwaring Union Pacific Railroad, Vice President, Public Affairs

## TECHNICAL ADVISORY COMMITTEE (TAC) – 2015

Representing	Primary	Alternate
City of Pasadena	Sarah Benavides, P.E. Sr. Assistant Plng Director, Public Wks	Robin Green, P.E. Director of Public Works
City of Baytown	Jose Pastrana Director of Engineering	Tiffany Foster Director, Plng & Development

## H-GAC 2016-17 Unified Planning Work Program

Representing	Primary	Alternate
Intermodal Interests	Maureen Crocker Executive Director	Dr. Carol Lewis Director, Texas Southern University
Citizen and Business Interests	Perri D'Armond President and CEO	Irma Sanchez Vice President of Projects
Harris County	Charles Dean, P.E. Planning Manager	David Goldberg, P.E. Manager, Road and Bridge
City of Missouri City	Scott Elmer, P.E. Assistant City Manager	VACANT
City of Pearland	Trent Epperson Director of Capital Projects	Jon Branson Assistant City Manager
Citizen and Business Interests	Bob Eury President, Central Houston, Inc./td>	Regina Morales Central Fort Bend COC
Urban Transit	Ken Fickes Transit Services Director	Vernon Chambers Harris County Transit
Brazoria County	Matt Hanks, P.E. County Engineer	Michael Shannon, P.E. Assistant County Engineer
METRO	Clint Harbert Sr. Director	Edmund Petry Manager, Environmental and Capital Planning

## H-GAC 2016-17 Unified Planning Work Program

Representing	Primary	Alternate
City of Sugar Land	Lisa Kocich-Meyer, AICP Director of Planning	Christopher Steubing, P.E. City Engineer
Montgomery County	Jeff Johnson, P.E. Transportation Mgr	J. Ross McCall, P.E. County Engineer, III
Waller County	Orval Rhoads, P.E. County Engineer	Russell Klecka County Commissioner, Pct. 2
City of Texas City	Doug Kneupper, P.E. Director, Transp. Plng	VACANT
TxDOT-Houston District	William R. Brudnick, P.E. Director, Transp. Plng & Development	Andrew Mao, P.E. Director, Advanced Transp. Plng
Environmental/Planning	Barbara Koslov President, BayTran	Joseph Esch Director, Economic Development
Environmental/Planning	Christopher LaRue Woodlands Township	Don Norrell President, Woodlands Township
Environmental/Planning	Mark Loethen, P.E. Assistant Director	Jack Whaley, P.E. Director, Houston TranStar
TxDOT Beaumont District	Phillip Lujan, P.E. Director	Scott Ayres, P.E. Planning Engineer
Intermodal Interests	Clark Martinson Energy Corridor District	David Crossley Houston Tomorrow

## H-GAC 2016-17 Unified Planning Work Program

Representing	Primary	Alternate
Galveston County	Mike Fitzgerald, P.E. County Engineer	VACANT
Environmental Planning	Yancy Scott, P.E. County Engineer	John Isom Director, Waller Economic Dev. Corp
Chambers County	Bobby Hall, P.E. County Engineer	Rusty Senac Commissioner, Pct. 4
Rural Transit	Paulette Shelton Fort Bend County	Claudia Wicks Colorado Valley Transit District
Smaller Cities	Greg Smith City of Shenandoah	C.J. Snipes City Administrator, Fulshear
Fort Bend County	Richard Stolleis, P.E. County Engineer	DeWayne Davis, P.E. Engineer III
Regional Planning	Jeff Taebel, FAICP H-GAC At-Large	VACANT
Intermodal Interests	Zahid Mahmood Port of Houston Authority	Charles Russell City Engineer, City of Stafford
Intermodal Interests	John Tyler, P.E. Assistant Director	David Gornet Executive Director, Grand Parkway Assoc.
City of Galveston	Rick Vasquez	Ross Blacketter

## H-GAC 2016-17 Unified Planning Work Program

Representing	Primary	Alternate
	Director of Planning	City Engineer
Environmental/Planning	Patrick Walsh, P.E. Director, Planning and Development	Michael Kramer City of Houston, Planning /and Dev.
Liberty County	Louis Bergman, P.E. County Engineer	Lester Wisegerber TAC Alternate
City of Houston	Jeff Weatherford, P.E. Deputy Director	Carol Haddock, P.E. Sr. Assistant Director
Intermodal Interests	Mike Wilson Port of Freeport	Diane Falcioni Port of Galveston
City of Conroe	Thomas Woolley Project Manager	Shawn Johnson Transportation Specialist
City of League City	Earl Smith, P.E. Director of Engineering	John Baumgartner Director, Public Services
Intermodal Interests	Bill Zrioka HAS Project Manager	Carlos Ortiz Assistant Director of Planning

**This Page Intentionally Left Blank**

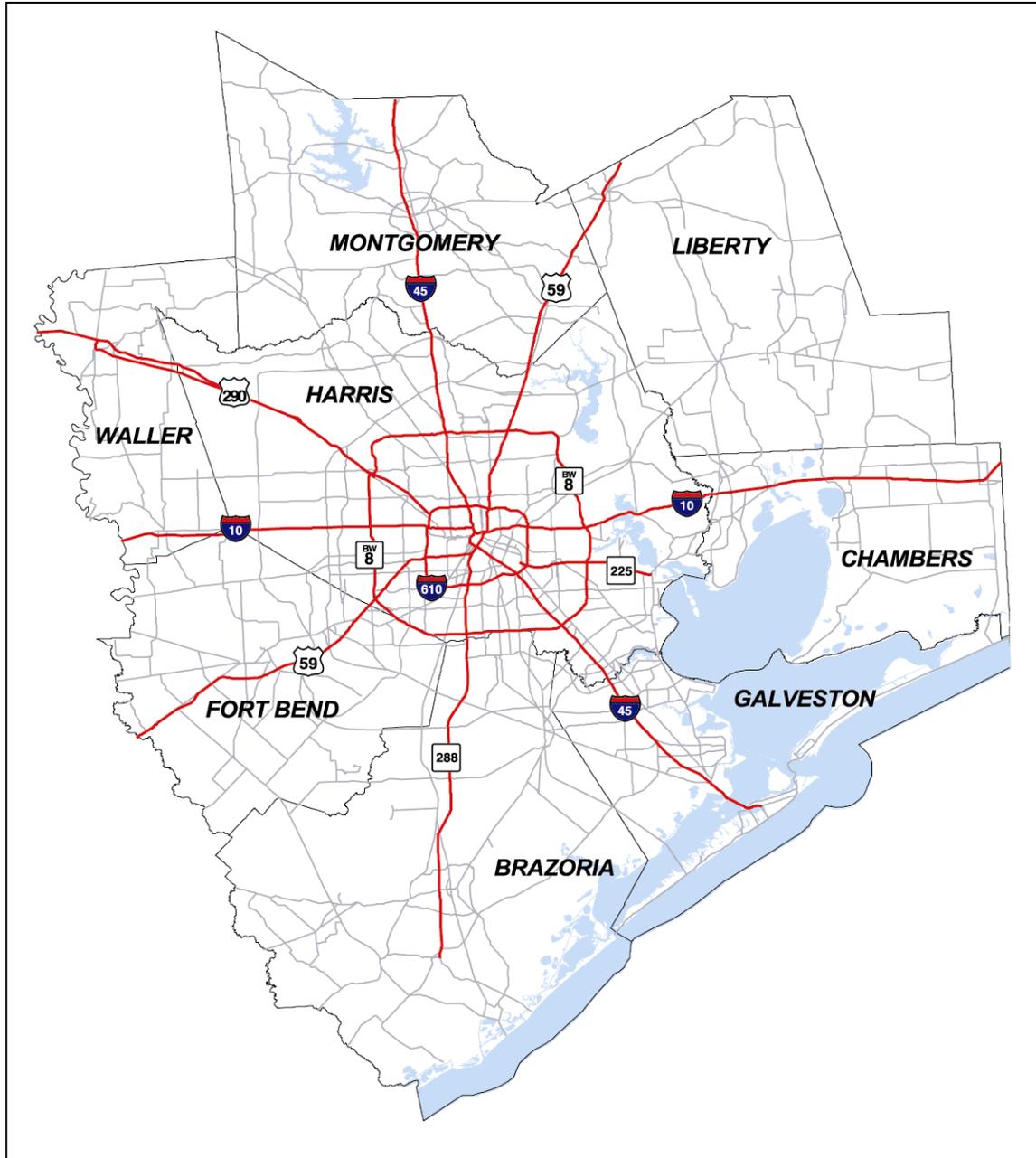
# **Appendix B**

---

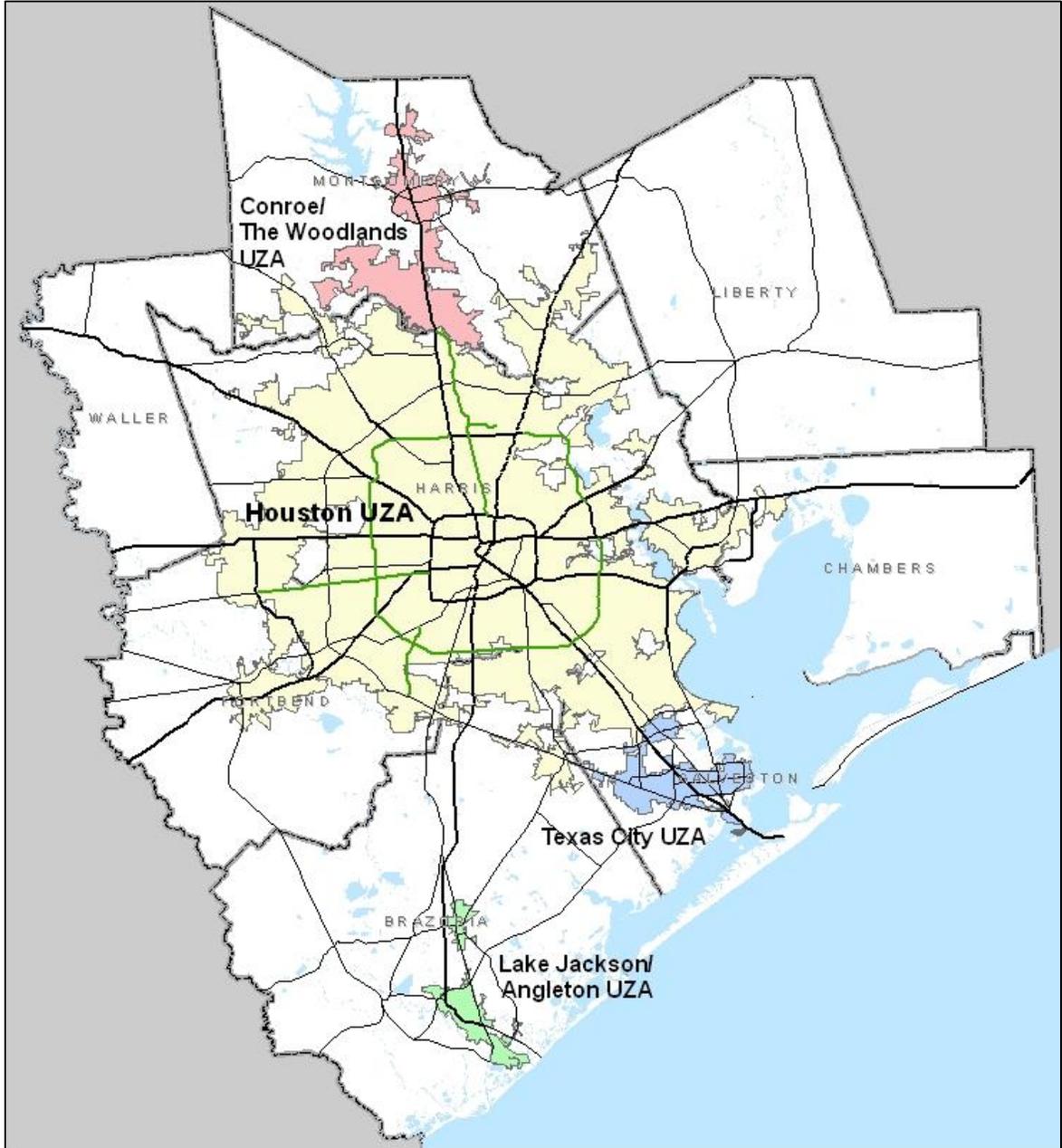
**Maps of the  
Houston-Galveston  
Transportation Management Area (TMA)  
And  
Urbanized Areas (UZA)**

**This page intentionally left blank.**

**Eight-County Houston-Galveston  
Transportation Management Area**



**Transportation Management Area  
Urbanized Area Boundaries**



# **Appendix C**

---

## **Debarment Certification**

**This Page Intentionally Left Blank**

# H-GAC 2016-17 Unified Planning Work Program

---

## DEBARMENT CERTIFICATION (Negotiated Contracts)

- (1) The **Houston-Galveston Area Council** as **CONTRACTOR** certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal department or agency;
  - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public\* transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity\* with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions\* terminated for cause or default.
- (2) Where the **CONTRACTOR** is unable to certify to any of the statements in this certification, such **CONTRACTOR** shall attach an explanation to this certification.

\*federal, state or local

  
\_\_\_\_\_  
Signature – Stephen Costello

  
\_\_\_\_\_  
Signature – Jack Steele

Chairman, Transportation Planning Council  
\_\_\_\_\_  
Title

Executive Director  
\_\_\_\_\_  
Title

Houston-Galveston Area Council  
\_\_\_\_\_  
MPO

Houston-Galveston Area Council  
\_\_\_\_\_  
Fiscal Agent

July 24, 2015  
\_\_\_\_\_  
Date

**This Page Intentionally Left Blank**

# **Appendix D**

---

## **Lobbying Certification**

**This Page Intentionally Left Blank**

# H-GAC 2016-17 Unified Planning Work Program

## CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

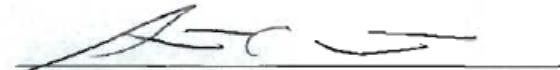
The undersigned certifies to the best of his or her knowledge and belief, that:

(1) No federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclosure accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

  
Signature – Stephen Costello

Chairman, Transportation Planning Council  
Title

Houston-Galveston Area Council  
MPO

July 24, 2015  
Date

  
Signature – Jack Steele

Executive Director  
Title

Houston-Galveston Area Council  
Fiscal Agent

**This Page Intentionally Left Blank**

# **Appendix E**

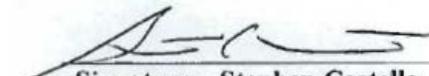
---

## **Certification of Compliance**

**This Page Intentionally Left Blank**

**Certification of Compliance**

I, Stephen Costello, Chairman, a duly authorized officer/representative of the Houston-Galveston Area Council (H-GAC), do hereby certify that the contract and procurement procedures that are in effect and used by the forenamed MPO are in compliance with 49 CFR 18, "Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments," as it may be revised or superseded.

  
\_\_\_\_\_  
**Signature – Stephen Costello**

  
\_\_\_\_\_  
**Signature – Jack Steele**

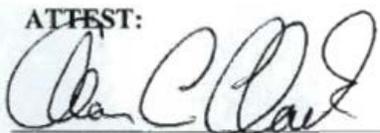
Chairman, Transportation Planning Council  
\_\_\_\_\_  
**Title**

Executive Director  
\_\_\_\_\_  
**Title**

Houston-Galveston Area Council  
\_\_\_\_\_  
**MPO**

Houston-Galveston Area Council  
\_\_\_\_\_  
**Fiscal Agent**

July 24, 2015  
\_\_\_\_\_  
**Date**

**ATTEST:**  
  
\_\_\_\_\_  
**Alan Clark**  
**MPO Director**

**This Page Intentionally Left Blank**

# **Appendix F**

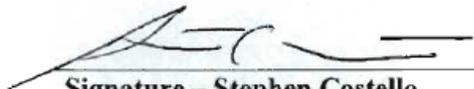
---

## **Certification of Internal Ethics and Compliance Program**

**This Page Intentionally Left Blank**

**Certification of Internal Ethics  
and Compliance Program**

I, Stephen Costello, Chairman, a duly authorized officer/representative of the Houston-Galveston Area Council (H-GAC), do hereby certify that the forenamed MPO has adopted and does enforce an internal ethics and compliance program that is designed to detect and prevent violations of law, including regulations and ethical standards applicable to this entity or its officers or employees and that the internal ethics and compliance program satisfies the requirements of 43 TAC § 31.39, "Required Internal Ethics and Compliance Program" and 43 TAC § 10.51, "Internal Ethics and Compliance Program" as may be revised or superseded.

  
\_\_\_\_\_  
**Signature – Stephen Costello**

  
\_\_\_\_\_  
**Signature – Jack Steele**

Chairman, Transportation Planning Council  
\_\_\_\_\_  
**Title**

Executive Director  
\_\_\_\_\_  
**Title**

Houston-Galveston Area Council  
\_\_\_\_\_  
**MPO**

Houston-Galveston Area Council  
\_\_\_\_\_  
**Fiscal Agent**

July 24, 2015  
\_\_\_\_\_  
**Date**

**ATTEST:**

  
\_\_\_\_\_  
**Alan Clark**  
**MPO Director**

**This Page Intentionally Left Blank**

# **Appendix G**

---

## **Public Outreach Efforts for the 2016-17 Unified Planning Work Program**

**This page intentionally left blank.**

# H-GAC 2016-17 Unified Planning Work Program

---

## **Public Outreach Efforts for the 2016-2017 Unified Planning Work Program**

The Draft 2016-2017 Unified Planning Work Program (UPWP) was made available to the public on May 17, 2015, which began the 30-day comment period scheduled to end officially on June 17, 2015. A public meeting was held on June 10, 2015 at the offices of the Houston-Galveston Area Council. The following items document the Public Outreach efforts and public comments received:

### **Advertising**

- Paid advertising in the Chronicle purchased: Thursday, May 14, 2015
- Advertised: Sunday, May 17, 2015
- Meeting alert/Press Release emailed to TAC, TPC, and RAQPC members and alternates, as well as other interested parties on May 19, 2015 with a reminder sent on June 8, 2015. The alert contained a link to the draft document posted on the H-GAC website.
- A Media Alert was sent to local media outlets on Wednesday, June 3, 2015.

### **Document Distribution**

A draft of the 2016-2017 UPWP was sent to TxDOT prior to June 1, 2015 as requested. A copy of the draft 2016-2017 UPWP was placed on the H-GAC webpage on May 15, 2015. A link to the document online was sent to TAC, TPC, and RAQPC members and alternates, as well as other interested parties on May 19, 2015. TxDOT submitted a set of minor corrections, which were incorporated into the document, and several TAC members provided minor changes regarding spelling and revisions to member titles. Both Fort Bend County Transit and the City of Conroe Transit requested modifications to their descriptions of FTA 5307 activities.

### **Public Meeting [open-house] – June 10, 2015**

The public meeting was held on June 10, 2015 in Conference Room A at the offices of the Houston-Galveston Area Council from 5:30 p.m. to 7:00 p.m. There were eight persons present, including H-GAC staff. The agenda of the public meeting included a brief introduction and PowerPoint presentation. During the presentation, the audience was encouraged to ask questions and provide comments.

Mr. John Nunez, on behalf of Clark Martinson of the Energy Corridor, provided written public comment at the meeting (see attached). After conversation with Mr. Martinson, staff updated the Local Planning Activities to include these activities. The meeting concluded at 6:45 p.m., but H-GAC staff remained until 7:00 p.m. to speak to anyone who arrived late.

# H-GAC 2016-17 Unified Planning Work Program

---



June 10, 2015

Dear Mr. Alan Clark  
MPO Director  
Houston-Galveston Area Council  
P.O. Box 22777  
Houston, TX 77227-2777

Dear Mr. Clark:

This is regarding the Draft 2016 - 2017 Unified Planning Work Program. Upon review of the Energy Corridor District's planning activity listed under the State and Locally Funded Planning Activities section, I am submitting information about other Energy Corridor District Transportation projects to include in the UPWP.

Recently, under the District's direction, Sasaki Associates prepared a Master Plan vision for the Energy Corridor. The Master Plan contains many short and long-range actions and improvements guided by a set of principles that comprise the District's vision to become a great place to work, live and invest.

Toward this end, among the short range transportation-related actions the District is addressing are four projects that should be included in the draft UPWP document:

- A pilot project to create a plan to transform the segment of Eldridge Parkway between Memorial Drive and Briar Forest to establish a new standard of complete streets in the Energy Corridor.
- Using a pilot Eldridge Parkway Project as a model, initiate a plan for Park Row from Eldridge Parkway to SH-6 to transform this segment into a safer, more pedestrian and bicycle friendly roadway.
- Based upon models created by Sasaki and the District's transit consultant, HDR, initiate commuter transit services from major Energy Corridor worker residential origins, to include Ft Bend County, Katy, and Cypress areas.
- Also based upon models created by Sasaki and HDR, initiate Energy Corridor internal transit circulator services to foster less reliance upon automotive travel by area workers and residents.

The Energy Corridor plans to initiate these transportation-related activities within the 2016 - 2017 UPWP cycle and therefore requests their addition to the draft document.

Respectfully,

A handwritten signature in black ink, appearing to read "Clark Martinson", written over a light blue horizontal line.

Clark Martinson, AICP  
General Manager  
281-759-3800  
713-824-6808 cell  
fax: 281-759-3801  
cmartinson@energycorridor.org

www.energycorridor.org • Phone (281) 759-3800 • Fax (281) 759-3801  
14701 St. Mary's Lane, Suite 290, Houston, Texas 77079

# **Appendix H**

---

## **Transportation and Air Quality Planning Acronyms and Phrases**

**This page intentionally left blank.**

# H-GAC 2016-17 Unified Planning Work Program

---

## Transportation and Air Quality Planning Acronyms

### A

---

<b>AADT</b>	Annual Average Daily Traffic
<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>ACS</b>	American Community Survey
<b>ADA</b>	Americans with Disabilities Act
<b>ADT</b>	Average Daily Traffic
<b>Advanced-Practice</b>	Incorporating updated modeling practices or theories being used by other MPOs in the USA when applicable.
<b>AE</b>	Annual Element
<b>AERCO</b>	Area Emission Reduction Credit Organization
<b>AMPO</b>	Association of Metropolitan Planning Organizations
<b>APO</b>	Average Passenger Occupancy
<b>APTA</b>	American Public Transportation Association
<b>AQC</b>	Air Quality Compliance
<b>AQCRs</b>	Air Quality Control Regions
<b>AQMA</b>	Air Quality Maintenance Area - Areas noted by the EPA that have a potential for, or that presently exceed, the National Ambient Air Quality Standards
<b>ARRA</b>	American Recovery and Reinvestment Act of 2009
<b>ATOM 2</b>	A modified version of the Atomistic Model - Disaggregate Trip Distribution Model of the TTDP
<b>AVL</b>	Authorized Vehicle Lane
<b>AVN</b>	Division of Aviation, TxDOT
<b>AVO</b>	Average Vehicle Occupancy

### B

---

<b>BER</b>	Basic Emission Rate
<b>Biennial</b>	Every two years or every other year
<b>BMS</b>	Bridge Management System
<b>Brazos Transit</b>	Former name, now referred to as "The District"
<b>BRINSAP</b>	Bridge Inventory, Inspection, and Appraisal Program
<b>BWC</b>	Best Workplace for Commuters

### C

---

<b>3-C Planning Process</b>	Continuing, Comprehensive and Coordinated; 3-C planning process required by Federal law
<b>CAA</b>	Clean Air Act of 1970, and its related Amendments of 1990
<b>CAFÉ</b>	Corporate Average Fuel Economy
<b>CAGR</b>	Compound Annual Growth Rate
<b>CBD</b>	Central Business District
<b>CDP</b>	Census Designated Places
<b>CEI</b>	Cost Effectiveness Index
<b>CFR</b>	Code of Federal Regulations
<b>CIP</b>	Capital Improvement Program
<b>CMAAQ</b>	Congestion Mitigation Air Quality
<b>CMA</b>	Congestion Mitigation Analysis (formerly known as SOV Analysis)
<b>CMP</b>	Congestion Management Process
<b>CMS</b>	Congestion Management System
<b>CMSA</b>	Consolidated Metropolitan Statistical Area – <i>The Houston-Galveston-Brazoria CMSA consists of the Houston PMSA (Chambers, Fort Bend, Harris, Liberty, Montgomery, and Waller counties), the Galveston-Texas City PMSA (Galveston County), and the Brazoria PMSA (Brazoria County)</i>

# H-GAC 2016-17 Unified Planning Work Program

---

<b>CNG</b>	Compressed Natural Gas
<b>CO</b>	Carbon Monoxide
<b>COG</b>	Council of Governments
<b>CPTED</b>	Crime Prevention Through Environmental Design
<b>CRIS</b>	Crash Record Information System
<b>CRP</b>	Consolidated Road Program
<b>CT</b>	Census Tract
<b>CTMS</b>	Computerized Traffic Management System
<b>CTPP</b>	Census Transportation Planning Package
<b>CTR</b>	Center for Transportation Research, University of Texas at Austin

## D

---

<b>DEIS</b>	Draft Environmental Impact Statement
<b>DEMO</b>	Demonstration grant - funding of an experimental program
<b>DERC</b>	Discrete Emission Reduction Credit
<b>DIME</b>	Dual Independent Map Encoding - A technique of creating a geographic base file (replaced by TIGER files)
<b>DOT</b>	Department of Transportation

## E

---

<b>EA</b>	Environmental Assessment
<b>EJ</b>	Environmental justice
<b>E+C</b>	Existing Plus Committed
<b>EIS</b>	Environmental Impact Statement
<b>EPA</b>	U.S. Environmental Protection Agency
<b>ERC</b>	Emissions Reduction Credit
<b>ERP</b>	Emissions Reductions Plan
<b>ETR</b>	Employer Trip Reduction

## F

---

<b>FAA</b>	Federal Aviation Administration
<b>FAHPM</b>	Federal Aid Highway Program Manual (replaced by FAPG)
<b>FAI</b>	Federal Air Interstate System
<b>FAP</b>	Federal Aid Primary System
<b>FAPG</b>	Federal Aid Policy Guide (replaces FHPM)
<b>FAS</b>	Federal Aid Secondary System
<b>FAU</b>	Federal Aid Urban System
<b>FBI</b>	Federal Bureau of Investigation
<b>FCFF</b>	Federal Clean Fuel Fleet
<b>FFGA</b>	Full Funding Grant Agreement
<b>FHWA</b>	Federal Highway Administration
<b>FIP</b>	Federal Implementation Plan
<b>FMA</b>	Federal Maritime Administration
<b>FMVCP</b>	Federal Motor Vehicle Control Program
<b>FONSI</b>	Finding of No Significant Impact
<b>FRA</b>	Federal Railroad Administration
<b>FRN</b>	Federal Register Notice
<b>FTA</b>	Federal Transit Administration (formerly UMTA)

## G

---

<b>GCRD</b>	Gulf Coast Rail District
<b>GCHSR</b>	Gulf Coast High Speed Rail

# H-GAC 2016-17 Unified Planning Work Program

---

<b>GCSPR</b>	Gulf Coast State Planning Region
<b>GHG</b>	Greenhouse Gas
<b>GIS</b>	Geographic Information Systems
<b>GRH</b>	Guaranteed Ride Home
<b>GSU</b>	Geographic Statistical Unit

## H

---

<b>HAOS</b>	Houston Area Oxidant Study
<b>HB&amp;T</b>	Houston Belt & Terminal Railroad Company
<b>HBW</b>	Home-Based Work
<b>HC</b>	Hydrocarbons
<b>H-GAC</b>	Houston-Galveston Area Council
<b>H-GRTS</b>	Houston-Galveston Regional Transportation Study - Part of TxDOT, Houston District
<b>HOT</b>	High Occupancy Toll
<b>HOV</b>	High Occupancy Vehicle
<b>HPMS</b>	Highway Performance Monitoring System
<b>HPR</b>	Highway Planning and Research
<b>HRT</b>	Heavy Rail Transit
<b>HUD</b>	U.S. Department of Housing and Urban Development

## I

---

<b>IH</b>	Interstate Highway
<b>I/M</b>	Inspection/Maintenance Program (for vehicle emission controls)
<b>IMS</b>	Intermodal Management System
<b>IPG</b>	Intermodal Planning Group
<b>ISTEA</b>	Intermodal Surface Transportation Efficiency Act of 1991
<b>ITS</b>	Intelligent Transportation System
<b>IVHS</b>	Intelligent Vehicle Highway System (outmoded term)

## J

---

## K

---

## L

---

<b>LEV</b>	Low Emission Vehicle
<b>LMRT</b>	Local Match for Rural Transit
<b>LMT</b>	Local Match for Transit
<b>LNG</b>	Liquefied Natural Gas
<b>LOM</b>	Level of Mobility (traffic volume/roadway design capacity)
<b>LOS</b>	Level of Service
<b>LRP</b>	Long-Range Transportation Plan
<b>LRT</b>	Light Rail Transit

## M

---

<b>MAP-21</b>	Moving Ahead for Progress in the 21st Century
<b>MCA</b>	Major Corridor Analysis
<b>MCS</b>	Major Corridor Study (Alternatives Analysis or Feasibility Study), replaces MIS
<b>MEC</b>	Major Employment Center
<b>MERC</b>	Mobile Emission Reduction Credit
<b>METRO</b>	Metropolitan Transit Authority of Harris County
<b>MIS</b>	Major Investment Study, replaced with MCS

# H-GAC 2016-17 Unified Planning Work Program

---

<b>MOBIL5a</b>	EPA's Mobile Emissions Factor Model, (X = 5)
<b>MOBIL6</b>	EPA's Mobile Emissions Factor Model, (X = 6)
<b>MOSERS</b>	[Mobile Source Emissions Reduction Strategy] Methodology for TCM quantification
<b>MOU</b>	Memorandum of Understanding
<b>MOVES</b>	Motor Vehicle Emissions Simulator
<b>MPO</b>	Metropolitan Planning Organization
<b>MTP</b>	Metropolitan Transportation Plan (formerly Long Range Transportation Plan)
<b>MVEB</b>	Motor Vehicle Emissions Budget

## N

---

<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAFTA</b>	North American Free Trade Agreement
<b>NARC</b>	National Association of Regional Councils
<b>NASP</b>	National Airport System Plan
<b>NEPA</b>	National Environmental Protection Act
<b>NHS</b>	National Highway System
<b>NHTSA</b>	National Highway Traffic Safety Administration
<b>NOx</b>	Nitrogen Oxide
<b>NPRM</b>	Notice of Proposed Rule Making

## O

---

<b>O<sub>3</sub></b>	Ozone
<b>O&amp;D</b>	Origin and Destination
<b>O&amp;M</b>	Operation and Maintenance
<b>OPD</b>	Overall Program Design - A budgetary document of H-GAC

## P

---

<b>P&amp;M</b>	Preservation & Maintenance
<b>P&amp;P</b>	Park and Pool
<b>P&amp;R</b>	Park and Ride
<b>PASS</b>	Principal Arterial Street System (TxDOT)
<b>PCB Program</b>	Planning Capacity Building (PCB) Program of FTA and FHWA
<b>PDP</b>	Project Development Plan
<b>PE</b>	Preliminary Engineering
<b>PEMS</b>	Portable Emissions Monitoring System
<b>PI</b>	Public Information
<b>PIP</b>	Public Involvement Plan
<b>PL 112</b>	FHWA Planning Funds
<b>PM</b>	Particulate Matter (suspended solids)
<b>PMS</b>	Pavement Management System
<b>PMSA</b>	Primary Metropolitan Statistical Area
<b>PMT</b>	Personal Miles Traveled (daily or annually)
<b>PPM (B)</b>	Parts Per Million (Billion)
<b>PPP</b>	Public Participation Plan
<b>PRT</b>	Personal Rapid Transit
<b>PS&amp;E</b>	Plans, Specifications and Estimates
<b>PTF</b>	Public Transportation Fund (State of Texas)
<b>PTMS</b>	Public Transportation Facilities and Equipment Management System
<b>PTN</b>	Division of Public Transportation, TxDOT
<b>PTRA</b>	Port Terminal Railroad Authority

# H-GAC 2016-17 Unified Planning Work Program

---

## R

---

<b>RAASP</b>	Regional Airport/Airspace System Plan
<b>RAP</b>	Reliever Airport Plan
<b>RAQPC</b>	Regional Air Quality Planning Committee
<b>RCAP</b>	Regional Commute Alternatives Program, known as H-GAC's Commute Solutions Program
<b>RCTSS</b>	Regional Computerized Traffic Signalization System
<b>RFP</b>	Request for Proposal
<b>RFQ</b>	Request for Qualification
<b>RMP</b>	Regional Mobility Plan
<b>ROP</b>	Rate of Progress
<b>ROW</b>	Right-of-way
<b>RSAS</b>	Regional Strategic Arterial System
<b>RSC</b>	Regional Safety Council
<b>RTNA</b>	Regional Transportation Needs Assessment
<b>RTP</b>	Regional Transportation Plan

## S

---

<b>SEP</b>	Supplemental Environmental Plan
<b>SAFETEA-LU</b>	Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users - Transportation Reauthorization Act for 2003-2009
<b>SH</b>	State Highway
<b>SIP</b>	State Implementation Plan – Plan detailing pollution controls for achieving attainment status required of TCEQ by the U.S. EPA through the CAAs of 1972 and 1977
<b>SMP</b>	Statewide Mobility Program (Build-it Section of TxDOT's UTP)
<b>SMS</b>	Safety Management System
<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>SOV</b>	Single Occupancy Vehicle
<b>SPP</b>	Statewide Preservation Program (Maintain-it Section of TxDOT's UTP)
<b>SPR</b>	State Planning and Research (a category of funding used by TxDOT)
<b>SRP</b>	Short-Range Transportation Planning
<b>STF1</b>	Summary Tape File 1
<b>STF3</b>	Summary Tape File 3
<b>STIP</b>	State Transportation Improvement Program
<b>STP</b>	Surface Transportation Program
<b>STOL</b>	Short Takeoff and Landing Aircraft
<b>STRAHNET</b>	Strategic Highway Network

## T

---

<b>TAC</b>	Technical Advisory Committee to the Transportation Policy Council
<b>TACB</b>	Texas Air Control Board (Replaced by the Texas Commission on Environmental Quality)
<b>TAFF</b>	Texas Alternative Fuel Fleet Program
<b>TASP</b>	Texas Airport System Plan
<b>TAZ</b>	Travel Analysis Zone
<b>TCAA</b>	Texas Clean Air Act
<b>TCEQ</b>	Texas Commission on Environmental Quality (formerly known as the TNRCC)
<b>TCMs</b>	Transportation Control Measures
<b>TCP</b>	Transportation Control Plan (as envisioned by EPA to reduce mobile source emissions enough to meet the NAAQS)
<b>TDM</b>	Travel Demand Modeling; also Transportation Demand Management
<b>TDP</b>	Transit Development Program
<b>TEA-21</b>	Transportation Equity Act for the 21 <sup>st</sup> Century (Enacted June 9, 1998; replaces ISTEA)

# H-GAC 2016-17 Unified Planning Work Program

---

<b>TEMPO</b>	Texas Metropolitan Planning Organizations
<b>TERP</b>	Texas Emissions Reduction Plan
<b>The District</b>	Formerly Brazos Transit
<b>THTS</b>	Texas Highway Trunk System
<b>TIGER</b>	Topologically Integrated Geographic Encoding and Referencing (replaced DIME files)
<b>TIP</b>	Transportation Improvement Program
<b>TIRZ</b>	Tax Increment Reinvestment Zone
<b>TMA</b>	Transportation Management Area
<b>TMO</b>	Transportation Management Organization
<b>TMS/H</b>	Traffic Management System for Highways
<b>TNRCC</b>	Texas Natural Resource Conservation Commission, renamed TCEQ Sept. 1, 2002
<b>TOPICS</b>	Traffic Operations to Increase Capacity and Safety
<b>TPC</b>	Transportation Policy Council
<b>TPD/Y</b>	Tons per day/year
<b>TPF</b>	Transportation Planning Funds (FHWA PL-112 and/or FTA 5303 funds)
<b>TIPI</b>	Transportation Public Involvement Plan
<b>TP&amp;P</b>	Division of Transportation Planning & Programming, TxDOT
<b>TRACS</b>	Texas Review and Comment System
<b>TRC</b>	Texas Railroad Commission
<b>TSM</b>	Transportation Systems Management
<b>TTC</b>	Texas Transportation Commission
<b>TTDP</b>	Texas Travel Demand Package
<b>TTI</b>	Texas A&M Transportation Institute - A division of Texas A&M University
<b>TxAQS 2000</b>	Texas 2000 Air Quality Study
<b>TxDOT</b>	Texas Department of Transportation (formerly known as the Texas Highway Department)

## U

---

<b>UA/UZA</b>	Urbanized Area
<b>UPRR</b>	Union Pacific Railroad
<b>UPWP</b>	Unified Planning Work Program
<b>USC</b>	United State Code
<b>USDOT</b>	United States Department of Transportation
<b>UTP</b>	Unified Transportation Plan
<b>UTPS</b>	Urban Transportation Planning System - Computer programs for transportation planning

## V

---

<b>V/C</b>	Volume to Capacity
<b>VHT</b>	Vehicle Hours Traveled
<b>VMEP</b>	Voluntary Mobile Emissions Reduction Program
<b>VMT</b>	Vehicle miles traveled (daily or annually)
<b>VOC</b>	Volatile Organic Compound

## Z

---

<b>ZEV</b>	Zero Emission Vehicle
------------	-----------------------



P.O. Box 22777  
Houston, TX 77227-2777  
713-627-3200  
[www.h-gac.com](http://www.h-gac.com)

