



FISCAL YEAR 2020-2021

UNIFIED PLANNING WORK PROGRAM (UPWP)

**HOUSTON-GALVESTON TRANSPORTATION
MANAGEMENT AREA**

APPROVED BY THE TRANSPORTATION POLICY COMMITTEE ON:
DATE: **7/19/2019**



Resolution

NO. UPWP 20/21-1

ADOPTING THE 2020-2021 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 2020-2021; and

WHEREAS, the 2020-2021 Unified Planning Work Program address the needs for planning Administration/Management, Data Development and Maintenance, Short Range Planning, Long Range Planning, 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 2020-2021 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.

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

- The 2020-2021 Unified Planning Work Program (UPWP) 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 2020-2021 UPWP are not exceeded.

PASSED AND APPROVED, this 26th day of July, 2019, at a regularly called meeting of the Transportation Policy Council for the Houston-Galveston Transportation Management Area.

APPROVED:

Hon. Kenneth Clark, Chairman
Transportation Policy Council

ATTEST:

Hon. Tom Reed, Secretary
Transportation Policy Council

TABLE OF CONTENTS

Section Page

INTRODUCTION	4
TASK I – Program Management	15
Subtask 1.1 – Program Support/UPWP	17
Subtask 1.2 – Public Involvement and Outreach Program	18
Task I Funding Table	20
TASK II – Data Development and Maintenance	22
Subtask 2.1 – Socioeconomic Data and Models	24
Subtask 2.2 – Physical Features, Data, and Modeling Support	25
Task II Funding Table	27
TASK III – Short Range Planning	29
Subtask 3.1 – Transportation Project Programming	32
Subtask 3.2 – Planning Support for Transit Service Implementation	34
Subtask 3.3 – Regional Incident Management/Operations and Intelligent Transportation Systems (ITS)	37
Planning Subtask 3.4 – Safety Planning	37
Subtask 3.5 – Evacuation Planning	38
Task III Funding Table	40
TASK IV – Long Range Planning	42
Subtask 4.1 – Investment Priorities and Project Planning	48
Subtask 4.2 – Air Quality Planning	49
Subtask 4.3 – Multimodal System Planning	51
Subtask 4.4 – Livable Centers	57
Subtask 4.5 – Transportation Performance Management	59
Task IV Funding Table	60
TASK V – Special Planning Studies	62
Subtask 5.1 – Special Planning Studies	63
Subtask 5.2 – Special Planning Studies	64
Task V Funding Table	65
FUNDING SUMMARY – 2020-2021 UPWP	66

2020-2021 UNIFIED PLANNING WORK PROGRAM

I. INTRODUCTION

Houston Galveston Area Council (H-GAC) and its Transportation Policy Council (TPC) has served as the Metropolitan Planning Organization (MPO) for the Houston Transportation Management Area (TMA) since 1974. This Houston TMA includes Harris County and seven surrounding counties which include Montgomery, Liberty, Chambers, Galveston, Brazoria, Fort Bend, and Waller. Our TPC provides policy guidance and overall coordination of the transportation planning activities within the region. The TPC consists of 28 members representing cities and counties, the Texas Department of Transportation (TxDOT), the Metropolitan Transit Authority of Harris County (METRO) one at-large member appointed by the H-GAC Board of Directors representing cities with a population greater than 50,000, one at-large member representing Other Transportation Interests, and one position for the Gulf Coast Rail District.

H-GAC follows the Fixing America's Surface Transportation Act's (FAST Act) final planning rules for Metropolitan Planning Processes and the Metropolitan Transportation Plan (MTP) which became effective on May 27, 2018. The FAST Act builds on the changes made by MAP-21 including provisions to make surface transportation more streamlined, performance-based, and multimodal, and to address challenges facing the U.S. transportation system, including safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

A. PURPOSE

The *2020-2021 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 2020 and 2021 (October 1, 2020 – September 30, 2021) 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 2020-2021:

- **Task I – Administration** describes 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** describes 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 ten-year timeframe, including the Transportation Improvement Program (TIP), the Ten-Year Transportation Plan, as well as transit feasibility studies, and operations planning. Task III also includes ongoing maintenance of the Regional Intelligent Transportation System (ITS), as well as efforts to improve traffic safety in the region and evacuation planning.
- **Task IV – Metropolitan Transportation Planning** describes planning activities for the long-term including development and maintenance of the Regional Transportation Plan (RTP) as well as ongoing initiatives regarding transportation-related air quality planning, regional bicycle and pedestrian planning, activities involving H-GAC’s Livable Centers program, and Transportation Performance Management (TPM) activities.
- **Task V – Special Studies** includes special one-time planning activities, including major corridor studies/analyses and support of tourism and transportation resiliency planning activities.

The Fixing America's Surface Transportation Act (FAST Act) requires the consideration of 10 factors in the metropolitan and statewide planning processes listed in 23 USC 134(h). The list below illustrates how the MPO addresses these factors:

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

- *The Regional Transportation Plan (RTP) focuses on strategic corridor plans that*

will improve the movement of people and goods within and through the region (Subtask 4.1).

- *The MPO supports transit service activities that foster urban redevelopment and improve access around transit stations (Subtasks 3.2 and 4.3).*
- *The MPO supports activities of the Greater Houston Freight Committee to better incorporate private sector freight user perspectives into the transportation planning process (Subtask 4.3).*

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

- *The TIP provides funding for improved bicycling & pedestrian facilities (Subtask 4.3).*
- *The RTP focuses on identification of crash hot spots and strategies to reduce crashes (Subtask 3.4).*
- *The MPO convenes a Regional Safety Council to address transportation safety in the region and engages in various safety-related initiatives (Subtask 3.4).*

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

- *The TIP provides funding for improved lighting in and around transit centers (Subtask 3.2).*
- *The RTP supports connections at port entrances and exits that facilitate enhanced security (Subtask 4.1).*
- *The MPO participates in emergency preparedness and evacuation activities initiated by state and local governments (Subtask 3.5)*

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

- *The TIP project selection criteria assign benefits to projects that: a) support/improve port operations, b) remove bottlenecks & fill gaps on the existing system that inhibit the movement of people and goods, and c) provide improved access between activity centers (Subtask 3.1).*
- *The RTP focuses on strategic corridor plans that will improve the movement of people and goods within and through the region (Subtask 4.1).*

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

- *The MPO engages in Sub-regional Planning initiatives designed to link local land use goals with transportation investments (Subtask 4.3).*
- *The MPO develops geographic information system (GIS) layers of regional environmental assets (Subtask 2.2).*

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

- *The Livable Centers initiative is designed to improve access and connectivity to and around transit stations (Subtask 4.4).*
- *The TIP and RTP support projects such as intermodal terminals that link a variety of modes in one station (Subtasks 3.1 and 4.1).*
- *The MPO supports regional vanpooling, carpooling and telework initiatives (Subtask 1.2).*
- *The TIP provides funding for transit implementations and studies (Subtask 3.1).*
- *Local Active Transportation Studies is designed to improve various means of active transportation such as biking and walking (subtask 4.3e.2).*

7. Promote efficient system management and operation

- *The Congestion Management Process (CMP) focuses on identifying non-added capacity alternatives that will improve traffic flow and safety for motorists (Subtask 4.5).*
- *The RTP includes an expanded managed lane system to derive improved efficiency from new capacity projects (Subtask 4.1).*
- *The TIP provides funding for expansion of traffic management systems throughout the region (Subtask 3.1).*
- *Operations efforts, such as Intelligent Transportation Systems (ITS) Planning and Incident Management, promote lower-cost, non-added capacity alternatives for improving traffic flow (Subtask 3.3).*

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 (Subtask 3.3).*
- *The MPO works with the state to identify major reconstruction needs over the life of the plan (Subtask 3.1).*

9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation

- *The MPO works with regional stakeholders to collect and analyze information to improve resiliency and reliability of the transportation system and reduce or mitigate storm water impacts on surface transportation (Subtask 5.1).*

10. Enhance travel and tourism

- *The MPO coordinates with specific representatives in the tourism industry to further understand tourism industry trends and needs related to transportation infrastructure and planning (Subtask 5.1).*
- *The MPO coordinates with specific representatives in the private transportation operators, tour bus operators and intercity bus operators to further understand industry trends and needs related to transportation infrastructure and planning (Subtask 5.1).*
- *The Livable Centers program supports the development of walkable, mixed-use places that utilize multi-modal travel choices and improve accessibility for regional residents and visitors (Subtask 4.4).*

Federal transportation legislation has placed an increased emphasis on performance-based planning and programming in order to increase accountability and transparency in regard 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(b):

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.
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 Regional Transportation Plan, 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 (PPP) in 2007, which was updated in November 2012 and July 2017. 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 an estimated 6.8 million people in 2018. The 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), 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 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 Air Quality 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 (RAQPAC) 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.

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.

In 2016, the Transportation Policy Council (TPC) created the Greater Houston Freight Committee to better incorporate private sector freight user perspectives into the transportation planning process. The Committee, with co-chairs appointed by the TPC, seeks to accomplish this through regular open meeting highlighting relevant industry trends and needs. The Committee identified a locally significant freight roadway network, recommended investment in critical facilities associated with a boom in petrochemical manufacturing and coordinated with Texas Freight Advisory Committee in the updating of the State Freight Mobility Plan.

D. PRIVATE SECTOR INVOLVEMENT

The private sector is actively involved in planning efforts outlined in the 2020-2021 UPWP.

H-GAC utilizes private sector contractors and consultants 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, the Greater Houston Freight Committee, and their respective subcommittees.

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 many area TMOs, which assist employers in implementing transportation demand management (TDM) strategies such as carpooling and vanpooling.

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 public/private partnership agreements.

E. PLANNING ISSUES AND EMPHASIS AREAS

Regional Transportation Plan – The MPO completed an update of the Regional Transportation Plan (RTP) in FY 2019. Key focus areas for the 2045 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 was placed on the development of performance measures to ascertain the benefits of the region's improvements. The 2045 RTP and Air Quality Conformity will be updated in the next two years as needed.

Freight Planning – 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 is 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.

Safety Planning – H-GAC assesses safety data as it is provided to determine the problem areas in terms of traffic safety. Staff work on a regional safety plan based on the data

assessments and provide potential countermeasures for consideration. H-GAC provides technical support on traffic safety issues, including the support of various outreach initiatives to promote safer driving.

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 engaging with regional business/industry leaders, environmental organizations, federal, state, and local governments to develop/review clean air strategies, aiding in the implementation of SIP strategies through demonstration projects and contractual programs.

Livable Centers – H-GAC provides 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 program helps to create quality, mixed-use places that provide multi-modal transportation options through studies and implementation projects.

Bicycle and Pedestrian Planning – H-GAC supports the implementation of the Transportation Policy Council’s adopted pedestrian and bicycle policy goals and recommended actions. This includes maintenance of the 2045 Active Transportation Plan, the development of a supplemental long-range plans in conjunction with the 2045 RTP, provision of technical support to local governments, and the hosting of training sessions for best practices.

In addition, The US Department of Transportation issued a set of Planning Emphasis Areas to be identified within the UPWP. The lists below illustrate how the MPO addresses these Emphasis Areas:

1. 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.
- **Subtask 4.1** - The update of the Regional Transportation Plan (RTP) continues to assess potential performance measures, which will be utilized in project selection criteria and project prioritization to link RTP goals and objectives.

- **Subtask 4.3** - 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.
- **Subtask 4.5** – 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.

2. Ensure a Regional Approach to Transportation Planning by Promoting Cooperation and Coordination across Transit Agency, MPO and State Boundaries

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.

- **Subtask 3.5** - Evacuation Planning activities include the planning and coordination of regional evacuation activities.
- **Subtask 4.2** – H-GAC Air Quality Program staff meet with their MPO counterparts from other regions to share information on regional air quality programs, including vehicle replacement and commute alternative programs.

3. 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.
- **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.

This Page Intentionally Left Blank

TASK I ADMINISTRATION AND MANAGEMENT

The purposes of the activities listed under Task I 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

- Maintain the operations of the MPO, including the fiscal management, handling of personnel matters, and the procurement of equipment and supplies required for operations.
- Develop public information exchange and education programs that increase public interest and participation in ongoing transportation and air quality planning activities.
- Promote public involvement and communication in “best practices” for land use/ transportation interactions.
- Conduct proactive public outreach in development of the Regional Transportation Plan (RTP) including robust public engagement.
- Obtain and maintain computer hardware, software, technical support, and training necessary to maintain transportation and related air quality planning activities.
- Continue implementation of a comprehensive, continuing and cooperative, regional transportation planning process per 23 USC 134(C).
- Follow the public involvement guidelines outlined in the Public Participation Plan to ensure an open planning process that supports early and continued public involvement, timely public notices, and full public access to information regarding key transportation decisions.

EXPECTED PRODUCTS

- New two-year Unified Planning Work Program (UPWP) for FY 2020-2021.
- Completion of the APER for FY 2020 and 2021.
- Monthly meetings of the Transportation Policy Council (TPC), Technical Advisory Committee (TAC) as well as associated subcommittees and working groups as needed.
- Support in daily operations for the MPO in the areas of public outreach, program administration, office management, grant management, computer systems management, and quality control.
- Technical Support offered to staff for computer distribution, inventory, meeting set ups, software, product assessments, and purchasing.
- Public information materials and public interaction in a variety of formats, including emails, letters, brochures, websites, surveys, videos, news releases, newsletter, and social media postings, etc.
- Monthly regional transportation newsletter for a better-informed public.

- Public outreach events for both updates of current and development of future regional transportation plans (e.g. Regional Transportation Plan, and the Transportation Improvement Plan).
- Quality control and compliance for contracts and reporting.
- The use of electronic system (Agiloft) for the processing and storing of contract documentation shared by all Transportation staff. Continued development of additional contract tools such as risk assessments on shared online systems for ease of use by staff.

PREVIOUS and CONTINUING WORK

- Continued work on consultant and pass-through contracts for awarded planning projects.
- MPO staff prepared meeting agendas, meeting notices, minutes and agenda item background materials for TPC and TAC meetings during the 2018-2019 fiscal years, as well as annual workshops for TPC and TAC members in 2018 and 2019.
- MPO staff maintained the 2018-2019 UPWP with amendments during the two-year period to reflect changes and additions to included projects and activities.
- MPO staff distributed the MPO Transportation e-newsletter monthly “Region View”.
- Staff implemented a public outreach campaign for the 2045 Regional Transportation Plan to encourage public participation in the planning process by conducting public meetings around the region and collecting public comments on the plan.
- Staff participated in meetings of 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 transportation planning organizations.
- Completed the APER for years 2018 and 2019.
- Supported daily operations for the MPO in the areas of public outreach, program administration, office management, grant management, computer systems management, and quality control.
- Technical Support offered to staff for computer distribution, inventory, meeting set ups, software, product assessments, and purchasing.
- The implementation of electronic system (Agiloft) for the processing and storing of contract documentation. Shared system of filing and retrieving contracts and other important documentation.

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. Approval of out-of-state travel will be sought from the Texas Department of Transportation prior to travel.

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.

1.1A PROGRAM SUPPORT & ADMINISTRATION

- Manage contracts and agreements between the MPO and participating agencies or subcontractors.
- Maintain financial records for departmental contracts and ensure payment of invoices.
- 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.
- Provide technical assistance to local governments, public agencies, other qualified grant sponsors, and staff regarding federal grant applications, transportation planning activities, and transportation management issues.
- Provide technical assistance to the Transportation Policy Council (TPC), the Technical Advisory Committee (TAC), and other associated 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.
- 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).

- 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.
- Maintain historical data, publications, and map warehousing/archive libraries, along with an online-query system for public research and access to historical information.
- The acquisition of supplies, services, software, and equipment to support MPO operations. Equipment purchases over \$5,000 per unit (including the cost of any modifications, attachments, accessories or auxiliary apparatus necessary to make it usable for the purpose for which it is acquired) require prior State and Federal approval.
- Engage in transportation planning-related travel, with prior State and Federal Approval for all travel taking place out-of-state.
- Acquire legal defense/advice with prior State and Federal approval 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.

1.1B UNIFIED PLANNING WORK PROGRAM DEVELOPMENT

- Maintain the 2018-2019 Unified Planning Work Program (UPWP), reflecting current plans, programs, and regional priorities, by amendments approved by the TPC, TxDOT, FHWA, and FTA.
- Develop and adopt the 2020-2021 Unified Planning Work Program per schedule determined by staff in coordination with other transportation partnering

SUBTASK 1.2 Public Involvement and Outreach Program

MPO staff engages in 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, 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.

1.2a Public Involvement

- Conduct public outreach activities and provide administrative and outreach support for public meetings that correspond with current and future transportation projects, plans, and studies by publishing legal notices, press releases and advertisements, conducting

public meeting arrangements, slideshow presentation and production, and development of educational materials for distribution at the meetings.

- Provide public information on regional transportation issues through a multitude of outreach activities including public meetings, television, radio, digital and social media, and print.
- Solicit public comments on transportation programs, projects, and policies and to respond to public comment in a timely fashion.
- Create graphics and other visualization components to deliver information to interested parties through digital media communications including websites, webinars, social media, video and audio technologies, and photography. Develop and maintain listservs and community contact lists to ensure adequate distribution and notices of public meetings and materials to interested parties.
- Provide live-streaming of Transportation Policy Committee meetings and other meetings and events as determined.
- Develop partnerships with community organizations to provide public information on regional transportation issues, projects, and studies.
- Conduct a hurricane preparedness public outreach campaign to promote the Together Against the Weather program and the zip zone maps.

1.2b Policy and Government Affairs

- Provide MPO comments to federal and state agencies regarding proposed rules as part of the rule-making process.
- Organize seminars, peer exchanges, and peer reviews as necessary to facilitate communication between MPOs, federal, state, and local agencies.
- Provide food and non-alcoholic beverages, pending TxDOT approval, at selected meetings and events when deemed appropriate.
- Provide outreach support including briefings and printed materials for policy-makers on federal and state issues relevant to the regional transportation planning process.

Task 1.0 - FY 2020-2021

Subtask	Responsible Agency	TPF		STBG		Local		Total	
		2020	2021	2020	2021	2020	2021	2020	2021
1.1	MPO	2,844,856	2,838,132	-----	-----	-----	-----	2,844,856	2,838,132
1.2	MPO	748,141	763,262	-----	-----	-----	-----	748,141	763,262
Total		3,592,997	3,601,394	-----	-----	-----	-----	3,592,997	3,601,394

¹ TPF – This includes both FHWA PL-112 and FTA Section 5303 Funds. TxDOT will apply transportation development credits sufficient to provide the match for TPF. As the credits reflect neither cash nor man-hours, they are not reflected in the funding tables.

This Page Intentionally Left Blank

TASK II

DATA DEVELOPMENT AND MAINTENANCE

The purposes of the activities listed under Task II is to collect, update, model and maintain the basic data and tools required for executing the planning activities described in this document.

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

- Socioeconomic databases to be used for transportation planning and modeling activities.
- Scheduled updates of population, employment and land use forecast data for long range transportation planning
- Web mapping applications and tools to assist in regional transportation planning activities.
- Transportation model validations based on revised freeway traffic counts and speed data.
- Advanced-practice regional travel models that incorporate updated modeling practices and theories as well as new travel survey data.
- Secure a model to analyze the regional societal and economic impact through integrating travel demand forecast and social economic forecast data to improve transportation planning efficiency.
- 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 resulting in an improved regional transportation modeling network.

- Emissions analyses of transportation projects using the MOVES model.
- Began work on a Tour-Based-Truck model. This activity is ongoing.

Implement a series of modifications and updates to the H-GAC's land-use micro forecasting model. This activity is ongoing.

PREVIOUS WORK

- Monitored releases of aggregate socioeconomic data from federal and state agencies, and other public and private sources and maintained and updated relevant databases with the provided information (Continuing Task).
- Updated the model Buildings and model Parcels base year data. H-GAC Staff continues maintaining and updating databases with such information (Continuing Task).
- Updated the Annual Regional Growth forecast demographic and economic forecasting model (Continuing Task).
- Developed a scenario-based, regionally integrated land use-transportation small-area population and employment forecast.
- Enhanced the GIS capabilities that support Cube Voyager modeling software through customized menus, macros and programs to perform some repetitive tasks of the 4-step modeling processes (Continuing Task).
- Enhanced mapping and plotting techniques for display and evaluation of transportation tasks through the use of Geographic Information System (GIS) (Continuing Task).
- Provided modeling supports for conformity, and various corridor studies within the region using GIS and Cube Voyager GIS functionalities (Continuing Task).
- Calculated population within a quarter mile buffer of regional transit networks with results displayed in an ArcGIS map (Continuing Task).
- Utilized GIS to support planning activities of the agency and to provide technical support and assistance to member agencies (Continuing Task).
- Conducted traffic speed and count collection on the freeway system to validate travel demand models (Continuing Task).
- Staff continued to provide both GIS and modeling support for the regional conformity analysis through added capacity projects development, highway and transit networks development and coding, and the modeling of the various required scenario years (Continuing Task).
- Provided travel modeling and forecast technical assistance for a corridor study of

Kirkwood Drive in city of Meadows Place.

- Published an interactive web report analyzing the demographic and socioeconomic changes of the region as compared to other major metropolitan areas in the US.
- Published an interactive web report and tool analyzing the job flows to and from the region.
- Developed and enhanced web mapping tools that provide quick and easy access to socioeconomic data and assist in regional planning activities.

SUBTASK 2.1 Socioeconomic Data and Models

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.

2.1a Socioeconomic Data

- 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.
- Staff will continue researching, obtaining, and processing information on the location, timing, and details of planned development projects in the region. Staff will continue maintaining and updating databases with such information.
- 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.

2.1b Socioeconomic Models

- Staff will continue improving and enhancing the existing operational version of the demographic and economic macro forecasting model.
- Staff will continue improving and enhancing the existing operational version of the land- use micro forecasting model.
- Staff will produce scheduled updates of population, employment and land use forecast.
- 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.

2.1c Information Services and Analytical Support

- 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 public.
- Staff will redevelop the current Adobe Flex based Eco-Logical Tool within the

JavaScript framework to reproduce and enhance its current functionality.

- Staff will provide informational services and analytical support regional 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.

2.2a Transportation Data & Modeling Support

- Use geographic information systems (GIS) to develop menus, macros, programs, and user manuals needed to display and evaluate transportation tasks.
- Maintain, refine, and enhance the data required to operate the travel demand models, including the road network, segment nodes, and traffic analysis zones.
- Provide programming support for modeling and GIS applications.
- Create maps and other GIS related publications as needed.
- Maintain the GIS based Project Viewer for TIP and RTP projects.
- Apply GIS and cartographic modeling techniques to enhance spatial analysis of demographic and travel data.
- Develop and support a region traffic data viewer.
- Attend meetings and participate on committees of the GIS user groups, network user groups, and other technical support groups as needed.
- Continue staff training on Cube suite software.
- A consultant will be utilized to determine the method, cost, and design for conducting travel surveys to include: Origin-Destination, Commercial Vehicles, Household, External Stations, Special Generators, etc. These data will be used for updating the regional travel demand model.
- Staff will develop an interface to make the acquired roadway speed data useable both internally and by the public.

2.2 b Travel Demand Forecasting

- A consultant will be utilized to assist:

- with technical support for the implementation and improvement of the Cube model set.
 - the collection of speed, classification, and traffic count data on select on-system and off-system roadways within the MPO region.
 - in the continue development of a mesoscopic model for use in corridor and regional analyses.
 - in continued work on air quality conformity to demonstrate that projected regional emissions from the Regional Transportation Plan do not exceed the region's motor vehicle emissions budgets stated in the State Implementation Plan.
 - with the continued development of a based tour truck model.
 - with and assessment of data needs and development of quantitative tools to create a model-based approach to analyzing non-motorized demand.
 - with the calibration and validation of the regional transit model set using data from the 2017 transit onboard survey.
 - to participate in a pooled funding project with AASHTO, FHWA, and other partners for the development of a quick-running strategic model capable of assessing emerging challenges such as shared mobility, automated vehicles, and roadway pricing policies.
- Review and assess demographic data and other model inputs.
 - Develop a regional base map for use with the Statewide Traffic Analysis and Reporting Systems (STARS II) to input data into the federal Highway Performance Monitoring System.
 - Economic Impact Study Software to benefit cost analysis software.

Task 2.0 - FY 2020-2021

Subtask	Responsible Agency	TPF		STBG		Local		Total	
		2020	2021	2020	2021	2020	2021	2020	2021
2.1	MPO	1,018,808	1,033,926	-----	-----	-----	-----	1,018,808	1,033,926
2.2	MPO	3,002,684	2,890,446	500,000	1,750,000	750,000	-----	4,252,684	4,640,446
Total		4,021,492	3,924,372	500,000	1,750,000	750,000		5,271,492	5,674,372

¹ TPF – This includes both FHWA PL-112 and FTA Section 5303 Funds. TxDOT will apply transportation development credits sufficient to provide the match for TPF. 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

Short-range planning efforts will be focused on the continued coordination and development of Transit and Transportation Demand Management (TDM) projects, maintenance of the Regional Intelligent Transportation System (ITS), efforts to improve traffic safety in the region, the development of the Transportation Improvement Program (TIP), sub-regional or county-level mobility studies, transit feasibility studies, and operations planning.

OBJECTIVES

- Support the development of short-range transportation planning consistent with federal planning and air quality requirements.
- 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.
- Assist local stakeholders with coordination of evacuation activities.

EXPECTED PRODUCTS

- The development of TIP and Regional Transportation Plan (RTP) project tracking system.
- Development and modification of the existing 2019-22 TIP. Maintenance of the 10-year plan for the use of funding allocated to the region, consistent with the TIP and RTP.
- Continued enhancement of the Call for Projects and Project Evaluation processes.
- The provision of assistance to local governments for environmental analyses of projects.
- An update to the regional ITS Architecture.
- The implementation of enhanced freeway incident management programs in the region.

- An updated of the annual State of Safety in the Region reports outlining the traffic safety situation in the region.
- The support of state and local government hurricane evacuation planning, coordination, and implementation efforts.
- Updated Zip Zone and Evacuation Route maps.
- Safety Intersection Studies.

PREVIOUS WORK

- Provided planning support for the Commuter and Transit Pilot Program, including evaluation and monitoring of program design, performance, and coordination with potential service providers (Continuing Task).
- A consultant was utilized to evaluate the effectiveness of new innovative mobility options for local governments and transit agencies that promote and enhance regional connectivity.
- Supported designated recipients of FTA formula funds in their annual development of programs and projects (Continuing Task).
- Planning projects performed by transit providers using FTA 5307 funds. Eligible project activities included, but were not limited to, system planning, project planning and preliminary engineering, maintenance plans, asset management plans, safety plans, and management operation studies (Continuing Task).
- Participated 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). H-GAC staff participated in the 2018 Houston UZA Section 5307/5337/5339 Call for Projects evaluation process. H-GAC is a member of the evaluation committee along with METRO, Harris County Transit and Fort Bend County Transit.
- Staff worked with a consultant through the High Capacity Transit Task Force to plan for innovative mobility option.
- Staff produced annual State of Safety Report and presented to the Regional Safety Council and TPC (Continuing Task).
- Staff developed a Regional Transportation Safety Plan which identifies transportation safety focus area; plan was adopted by the Regional Safety Council and TPC.
- Staff assisted local agencies and their consultants with seven different crash data assessments
- Staff conducted non-lobbying participation in local, state, and national initiatives involved in promoting increased traffic safety by attending the 2018 TxDOT Traffic Safety Conference in August 2018 and the National Safety Council Expo & Congress in October 2018. Staff facilitated an FHWA Pedestrian Safety Action Plan Workshop in

March 2019.

- A consultant was procured to assist in conducting 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 (Continuing Task).
- Continued 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 (Continuing Task).
- Updated and maintained the Zip Zone and Evacuation Route maps and provided to interested parties as requested (Continuing Task).
- Provided ongoing support and training to local governments and State regarding evacuation planning (Continuing Task).
- Staff procured a consultant to assist with updated project database. Migration to the new online platform occurred in FY2017 and continued into FY 2018.
- The 2017-2020 TIP was approved by the TPC in May and submitted for inclusion into the Statewide Transportation Improvement Plan (STIP).
- H-GAC (as fiscal agent for the MPO) established an agreement with Google Transit on behalf of smaller transit operators in the region and began implementation of a regional trip planner (Continuing).
- Staff updated regional demographic data, revised the transit need index methodology and maps showing areas of highest transit needs, locations of poverty households and persons with Limited English Proficiency (LEP). This information was incorporated into the Regionally Coordinated Transportation Plan (RCTP) update.
- Staff assisted local agencies and their consultants with crash data assessments (Continuing).
- Over the last year, staff worked with the software developers to customize the database tool to be used for the monthly amendments to the TIP, 10-Year Plan, and the RTP.
- The Transportation Policy Council (TPC) approved a fiscally constrained 2019-2022 Transportation Improvement Program on May 25, 2018.
- Staff processed amendments to the 2019-2022 Transportation Improvement Program.
- An inventory of updates to the 10-Year Plan was initiated and will be brought to the TAC and TPC over the next year.
- In January 2019, staff convened the Eco-Logical Advisory Committee. The purpose of this committee is to guide the development of the update the current Eco-Logical tool; which is used to inform planners and other regional stakeholders of the potential environmental impacts of potential surface transportation infrastructure.
- Staff continued to support the TIP Subcommittee, the Technical Advisory Committee, and the Transportation Policy Council resulting in the approval of the 2018 Call for

Projects on March 22, 2019.

SUBTASK 3.1 Transportation Project Programming

As the MPO, H-GAC is responsible for the coordination and programming of federal and state transportation funds allocated to the region with the state, providers of public transportation and local governments. In addition, H-GAC plans and programs include all regionally significant transportation investments, regardless of funding source.

3.1a 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 MPO planning area. The purpose of the TIP is to inform the public regarding the commitment of funds to implement transportation improvement projects, including those selected by the TPC. The TIP must be consistent with the Regional Transportation Plan, conform to adopted vehicle emissions reduction targets, and be financially constrained within reasonable estimates of federal, state, and local revenues for the four-year time frame.

- Develop and maintain the Transportation Improvement Program, including development of the initial document and required amendments.
- Analyze proposed amendments to the current TIP for conformity implications, financial impact, and administrative changes.

3.1b Ten-Year Transportation Plan

H-GAC's MPO Transportation Policy Council also makes funding commitments beyond the four years of the TIP. These commitments, along with those made by the state, are included in a Ten-Year Plan. This document reflects MPO action on the TIP and RTP and is coordinated with TxDOT's 10-Year Unified Transportation Program (UTP).

- Consistent with the TIP and RTP, maintain a 10-year plan for the use of funding allocated to the region.
- Produce electronic and printed materials to illustrate the projects and programs funded in the Ten-Year Plan.

3.1c Project Evaluation and Prioritization

The MPO works with the state and project sponsors to consider project funding requests using evaluation criteria developed through the coordinated planning process. This includes consideration of project benefits using quantitative analysis and qualitative factors, anticipated project costs, and the suitability and readiness of projects to be successfully delivered under federal and state requirements.

- Reassess and modify Call for Projects processes, including submission requirements, readiness determination, timing, and project evaluation criteria.
- A consultant will be utilized to assist in the development and utilization of benefit/cost analysis (BCA) and economic impact analysis (EIA) techniques to support the evaluation of project funding proposals.
- A consultant will be utilized as necessary to assist with project solicitations for the TIP and Ten-Year Plan.
- Coordinate with TxDOT regarding statewide project evaluation and selection processes.
- Provide presentations and conduct workshops to inform potential project sponsors regarding project funding opportunities and evaluation requirements.

3.1d Project Tracking, Monitoring, and Support

As the MPO, H-GAC maintains a database of project information to support production of TIP, Ten-Year Plan and RTP documentation and to track the progress of projects toward implementation. The project database is linked to internal and external data sources and provides content to the H-GAC and partner agency websites. H-GAC requires sponsors to provide regular updates on the status of their projects and maintains systems to collect and analyze this information. H-GAC also conducts project development educational workshops to share information and best-practices with partner agencies with the aim of improving on-time on-budget project delivery.

- A consultant will be utilized to continue the development and improvement of the online project information database to allow for enhanced project tracking and access by member agencies.
- Track and report on the development status of projects using information from available databases and sponsor data requests.
- Provide planning assistance to local governments in the development of candidate and selected TIP projects with the objective of accelerating project delivery and reducing unanticipated changes in project scope and cost.
- Staff will utilize software to continue the development and improvement of the online

project information database to allow for enhanced project tracking and access by member agencies.

SUBTASK 3.2 Planning Support for Transit Service Implementation

The MPO provides a forum for coordination between the providers of public transportation within the region and the development of new and expanded transit services. These short-term focused efforts assist transit providers and local government partners in their implementation of priorities established in the Regional Transportation Plan and other regional transit planning products. This subtask includes the identification of eligible planning activities performed by transit providers using Urbanized Area (5307) federal transit formula funds.

- Provide planning support for the Commuter and Transit Pilot Program, including evaluation/monitoring of program design and performance and coordination with potential service providers.
- A consultant will be utilized to evaluate the effectiveness of new innovative mobility options for local governments and transit agencies that promote and enhance regional connectivity.
- Support designated recipients of FTA formula funds in their annual development of programs of projects. Current designated recipients are shown below.

Area	Designated Recipient(s)
Houston UZA	METRO
Conroe--The Woodlands UZA	City of Conroe The Woodlands Township
Small Urban UZAs and Rural	TxDOT

- Planning projects performed by transit providers using FTA 5307 funds. Eligible project activities include, but are not limited to, system planning, project planning and preliminary engineering, maintenance plans, asset management plans, safety plans, and management and operation studies. The following table reflects both the ongoing work and special projects (e.g. special planning studies, major data collection/surveys, planning for specific capital projects, etc.) conducted by regional transit agencies.

Transit Provider	2020 Planning Budget	2021 Planning Budget	Ongoing Planning Activities	Special Planning Activities
Gulf Coast Center	\$92,500	\$92,500	General transit	Planning for

{Lake Jackson/Angleton UZA}			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.	Southern Brazoria County Administration/Fleet Storage Facility.
Harris County Transit {Houston UZA}	\$900,000	\$920,000	Grant management, routine service planning, mapping and project planning, interagency and internal data collection. Training for Federal requirements and operational development; engineering and design studies for sidewalk and crosswalk improvements.	On board mystery shopper, quality assurance checks; expansion of services for RIDES. Additional trainings for federal compliance, safety planning for bus routes and bus operations. Contractor safety plans and safety monitoring.
Gulf Coast Center {Texas City UZA}	\$233,100	\$233,100	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.	

City of Conroe	\$206,250	\$206, 250	General transit service planning including transit capital, finance, marketing and data collection/reporting. Development of program of projects and the TIP, including public comment and coordination with UZA mobility committee. Other planning	Service expansion planning assistance, transit asset management and safety management plans.
{ Conroe/Woodlands UZA				
The Woodlands Township	\$220,000	\$220,000	Data collection & analysis related to The Woodlands Express & Town Center Trolleys, UZA Administration, Marketing	Capital Projects related permanent trolley stops, onboard electronic ticket validators and, park and ride facility surveillance.
{ Conroe/Woodlands UZA }				
Fort Bend County Transit {Houston UZA }	\$925,748	\$972,035	General planning activities related to financial, operational, marketing and reporting activities. Routine transit service studies	Phase II Long/Short Range Plan Update, Continuation of Rail Study with Gulf Coast Rail District.

SUBTASK 3.3 Regional Incident Management/Operations and Intelligent Transportation Systems (ITS) Planning

The aim of Regional Operations Planning is to improve efficiency and safety of the transportation system in the area through deployment of advanced technologies and systems management techniques. Operations strategies and ITS technologies offer benefits ranging from improved safety on the existing transportation infrastructure to enhanced travel information to users of the transportation facilities.

3.3a ITS

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.

- Maintain and revise information on the regional ITS Architecture when needed.
- A consultant will be utilized to update the regional ITS Architecture and other ITS-related documents based on Regional Transportation Systems Management and Operations (TSMO) Self-Assessment.
- Distribute planning information regarding ITS architecture to public sector entities in the TMA involved in the implementation of ITS.

3.3b Incident Management

Incident management activities have been recognized as a critical component in congestion management. The MPO will work with various stakeholders to implement the recommendations from the Regional Incident Management Strategic Plan including freeway surveillance, Quick Clearance increased presence of law enforcement, and program coordination.

- Coordinate and partner with Houston TranStar to provide support for regional incident management activities.
- A consultant will be utilized to support training for regional incident management responders based on the FHWA's Strategic Highway Research Program 2 (SHRP2).
- Continue coordination with local governments and agencies to plan for the implementation of expanded 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.

3.4a Safety Data Analysis, Reporting, and Planning

- 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.

- Update the 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 RTP).
- Research and analyze crash data from TxDOT's Crash Record Information System (CRIS) and assist agencies in assessing problem locations with CRIS data.
- Conduct safety intersection studies at pilot intersection locations that have high crash density.
- A consultant will be utilized to assist in conducting intersection safety studies throughout the Houston-Galveston region.

3.4b Safety Outreach

- Conduct non-lobbying participation in local, state, and national initiatives involved in promoting increased traffic safety.
- Coordinate trainings and workshops on safety-related issues for agencies and regional implementers, if available or needed.
- A consultant will be utilized to assist in conducting 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 include the development of informational handouts, the development of public safety announcements on the radio and the dissemination of information on bicycle safety techniques to local governments, schools, and other interested organizations.
- Conduct consultant contract management and oversight activities for traffic safety public outreach project.

SUBTASK 3.5 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.

- 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.

- Update and maintain the Zip Zone and Evacuation Route maps and provide to interested parties as requested.
- Provide on-going support, education, and public outreach to local governments and State regarding evacuation planning.
- Use Web Based Evacuation Map to monitor traffic during an evacuation event.

Task 3.0 - FY 2020 – 2021

Subtask	Responsible Agency	TPF		FTA Sect. 5307		STBG		Local		Total	
		2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
3.1	MPO	583,755	545,565	-----	-----	-----	-----	-----	-----	583,755	545,565
3.2	MPO/FTA	35,111	36,018	2,577,598	2,643,885	-----	-----	-----	-----	2,612,709	2,679,903
3.3	MPO	30,059	30,760	-----	-----	-----	-----	-----	-----	30,059	30,760
3.4	MPO	108,941	114,734	-----	-----	800,000	-----	-----	-----	908,941	114,734
3.5	MPO	93,011	93,587	-----	-----	-----	-----	-----	-----	93,011	93,587
Total		850,877	820,664	2,577,598	2,643,885	800,000	-----	-----	-----	4,228,475	3,464,549

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

This Page Intentionally Left Blank

TASK IV METROPOLITAN TRANSPORTATION PLAN

The work elements contained in Task IV include the development and maintenance of the Regional Transportation Plan (RTP) as well as ongoing initiatives regarding transportation-related air quality planning, regional bicycle and pedestrian planning, activities involving the MPO's Livable Centers program, and Transportation Performance Management (TPM) activities.

OBJECTIVES

- Develop regional, sub-regional, 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.
- 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.
- Promotion of public involvement and communication in 'best practices' for land use/transportation coordination.
- 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.

- 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 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.
- Promotion of public involvement and communication in 'best practices' for land use/transportation coordination.
- Development of additional Livable Centers plans and projects, assisting local governments in creating quality mixed-use places that reduce dependence on single-occupancy vehicles.
- Encourage strategies designed to decrease the share of trips made by single-occupancy vehicles and promote alternatives such as walking, biking, telework, vanpool, and carpool.
- Integrate and maintain the congestion management process (CMP) into the RTP.
- Develop an update to the Regional Transportation Plan.
- 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.
- Integrate and maintain the congestion management process (CMP) into the RTP.

EXPECTED PRODUCTS

- Regional project sponsor assistance with project development and environmental mitigation planning activities.
- The coordination and selection of long-range targets for performance measures identified in the FAST Act.
- Bicycle/Pedestrian Special District and Local Active Transportation studies 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.

- Brazoria County Thoroughfare Plan
- Liberty County Transportation Plan
- Montgomery County Precinct 2 Mobility Plan
- Southeast Harris County Sub-Regional Study
- Completed update to the Regional Goods Movement Study.
- Two additional Special Districts Studies are planned for 2019 (Continuing).
- The Congestion Management Plan (CMP) Significant roadway network map was revised to reflect roadway classification upgrades and new roadway development in accordance with proposed federal guidance.
- Develop the 2050 RTP draft (2021-2024).
- Updated to the RTP financial model and the results incorporated into the 2050 RTP.
- Development and submittal of the annual RCTP Statewide Metrics Report to TxDOT-PTN is April (2020 and 2021).
- Advance planning for the coordination and development of the update to the Gulf Coast RCTP (due 2021-2022).

PREVIOUS WORK

- Staff coordinated with the state and local governments on thoroughfare plans and information was collected.
- Developed a Regional Thoroughfare Plan that includes existing and future transportation corridors that have been identified in state, county, and city thoroughfare plans.
- A consultant was procured to update the Brazoria County Thoroughfare Plan and associated policies (Continuing Task).
- Conducted consultant contract management and oversight activities for active thoroughfare studies (Continuing Task).
- Staff attended multiple Freight Planning workshops facilitated by FHWA. H-GAC staff developed and submitted the Houston Region Critical Urban Freight Corridors to the Texas Department of Transportation. Staff is also serving on the advisory committee for the Statewide Freight Rail Plan.
- H-GAC staff worked with the Greater Houston Freight Committee to develop a list of roads to be added to the Critical Urban Freight Corridors. The agreed upon list was submitted to TxDOT and added to the state's list of Critical Urban Freight Corridors.

- Staff collected various freight related datasets that have been secured by H-GAC. Additionally, H-GAC staff created Regional Truck Count Maps from ATRI data that was secured for use in the Ports Area Mobility Study. These maps are stored on the GIS server.
- Staff developed a freight educational outreach effort. Collaboratively with the Greater Houston Freight Committee, staff ensured that regional partners in the shipping, intermodal, and freight industries remain engaged. H-GAC staff engaged various freight stakeholders through presentations at 13 Regional Transportation Plan Meetings during FY2018.
- A consultant was procured to conduct the Ports Area Mobility Study to assess potential system improvement alternatives for freight movement as identified from recommendations from the Regional Goods Movement Study. The study is on-going and expected to be completed in Fall 2019 (Continuing Task).
- A draft scope of work has been completed in order to utilize a consultant to update the 2012 Regional Goods Movement Study-a long-range plan for the goods movement system in the Houston-Galveston region (Continuing Task).
- Assisted in the update of the 2007 Houston Region Freight Rail Study to address deficiencies in the Houston region's freight network (roads, ports, and railroads) and to develop ways to accommodate and capitalize on future freight movements.
- SH 146 Sub-regional Plan was completed in March 2018 and all required deliverables were received.
- The Waller County Transportation Plan was completed in May 2019 and the report has been finalized (Continuing Task).
- A consultant was procured to perform the Southeast Houston Mobility Plan. Significant progress on the study was made throughout the year. The data analysis was complete, and a public meeting was held in September 2018. Preliminary recommendation is being formulated. The study is expected to be finalized and all deliverables received in Summer 2019 (Continuing Task).
- Staff supported the contract management activities for the mobility studies as needed (Continuing Task).
- Staff supported the contract management activities for the sub-regional studies as needed (Continuing Task).
- The Statewide RCTP Metrics Report was Submitted to the TxDOT Public Transportation Division in April 2018. Milestone Progress Reports have been submitted quarterly that indicated progress towards completion of the Scope of Work as required in the Gulf Coast RCTP Project Grant Agreement (PGA). The PGA funding was increased from \$25,000 to \$50,000 and the period of performance was extended to August 31, 2019.
- Participated in collaborative meetings with local stakeholders including but not limited to the following: METRO-Regional Seamless Fare System, Enhanced Transportation for Seniors and Persons with Disabilities 5310 Grant Funding Workshop, United Way THRIVE Workgroup Meetings, Workforce Development -Job Candidate and Employee Transportation (JET)

Pilot Project, United Way Galveston County-transportation challenges, Regional Stakeholders- Public Private Partnership meeting regarding unmet transportation related needs.

- Completed the High Capacity Transit Task Force effort, which recommended regional transit improvements, especially as they related to High Capacity Transit (HCT) services. A survey of HCT service concepts, funding mechanisms and economic impacts from other regions was conducted as part of this effort, as was travel demand modeling, cost estimation for multiple capital scenarios, economic benefit/cost analysis, and identification of potential funding sources. A cost-constrained Priority Network was developed by the HCT Task Force and included in the 2045 RTP.
- Facilitated quarterly Regional Transit Coordination Subcommittee (RTCS) meetings and a Special RTCS Meeting in August, to coordinate the development of the Transit Asset Management (TAM) plan, related performance measures and targets that were subsequently approved by the Transportation Policy Council.
- Coordinated development of candidate projects to submit for the 2018 TIP Call for Projects funding, which would expand transportation options or sustain transit services in underserved areas.
- Staff continued to work with local governments and other transportation agencies to create TOD and transportation inventory around transit stations to include station, station area, and development data around transit stations (Continuing Task).
- The Draft 2045 Active Transportation Plan was developed and is in final stages of a public comment period.
- A consultant was utilized to develop a regional sidewalk GIS layer.
- A consultant was procured and is being utilized to conduct a Special Districts study with Spring Branch Management District.
- Staff facilitated an FHWA Pedestrian Safety Action Plan workshop.
- The Congestion Management Plan (CMP) Significant roadway network map was revised to reflect roadway classification upgrades and new roadway development in accordance with proposed federal guidance.
- Assisted in the monitoring and evaluation of transportation system management (TSM) and transportation demand management (TDM) solution effectiveness as they related to congestion mitigation, air quality benefits, and safety.
- Provided ongoing support to the Regional Air Quality Planning Advisory Committee (RAQPAC), its Executive Committee and other air quality subcommittees (Continuing Task).
- Determined the emissions benefits and cost effectiveness for VMEPs in the upcoming 2019– 2020 Transportation Improvement Program (Continuing Task).
- Completed and published the 2015 Air Quality Initiatives Report. The final version was completed and distributed in May.

- Assist project sponsors in completing project readiness component for TIP eligibility or for other funding sources, including planning-related assistance regarding the environmental processes, planning level costs, and partnership development (Continuing Task).
- Refined criteria and conduct livable center project evaluation for next TIP funding round and other potential funding programs.
- Provided technical assistance with land use/transportation-related RTP elements, preparation for 2045 RTP, Sub-regional Planning program and public outreach efforts.
- Conducted 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 may include cost-benefit assessments, non-traditional funding sources, transit accessibility, land valuation, trip reduction data and implementation of projects.
- Maintained 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. Develop criteria defining what constitutes transit-oriented development in the Greater Houston region and track transit-oriented development (existing and proposed).
- Developed economic valuation 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.
- Coordinated with past Livable Centers project sponsors for further implementation of Livable Centers study recommendations. One-on-one assistance may include examination of challenges faced by project sponsors and assistance with public engagement.
- Demonstrated best practices in land use-transportation coordination such as through 'Instant Impact' (small-scale, low-cost demonstration projects) by working with interested local partners.
- Identified new sources of funding to help support Livable Centers planning in diverse communities throughout the TMA.
- Developed guide for local governments that provides technical assistance on tools that influence land use. The guide will explore the economic value that such tools provide (Continuing Task).

- A consultant was utilized to 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.
- Conducted consultant contract management and oversight activities for active Livable Centers Studies.
- Conducted Livable Centers Call for Planning Study Partners. New study applications will be received and evaluated for future funding consideration. On-line application system will be developed, and presentations will be made to interested local partners to make them aware of the call process and timeline.
- Finalized the draft 2045 RTP and anticipate TPC action in May 2019.
- Updated to the RTP financial model and the results incorporated into the 2045 RTP.
- Staff finalized the Pavement and Bridge Condition (PM 2) and System Performance and Congestion (PM 3) FAST Act performance measures by the October 2018 deadline. These requirements were also included in the 2040 RTP and the 2019-2022 TIP documents per the federal requirements.

SUBTASK 4.1 Investment Priorities and Project Planning

4.1a Regional Transportation Plan (RTP) Development

As the designated MPO for the region, H-GAC is responsible for developing and maintaining a long-range transportation plan that establishes goals and objectives, articulates priority areas of investment, and coordinates local and state efforts to improve the performance of the regional transportation system. Key focus areas for the RTP include: development of vision and goal statements; use of performance measures for evaluating current and future system performance and investment effectiveness; an assessment of regional transit needs and opportunities; environmental considerations and implications for project development; and consideration of infrastructure needs to facilitate the movement of goods as well as people.

- Develop an update to the Regional Transportation Plan, including revised demographic and economic forecast scenarios, estimates of reasonably available revenue, investment priorities for projects and programs, and determination of conformity with regional air quality goals;

- Monitor changes to planning and project assumptions and amend the RTP as necessary;
- A consultant will be utilized for the 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.

4.1b Financial Planning

The MPO undertakes several efforts to understand federal state and local investment in transportation and to support the development of financially constrained plans and programs. This includes the development of financial models and the study of specific revenue measures and financing strategies to inform regional and local decision-making.

- Consultant will be utilized to maintain and update financial models to reflect data from current financial reports and reasonable future revenue sources.
- Provide planning support to local governments and transportation agencies to evaluate the use of innovative financing strategies.
- Consider and recommend opportunities to use transportation development credits to advance regional investment priorities.

4.1c Project Development and Mitigation Planning

The MPO supports the sponsor evaluation of project alternatives during the planning and environmental review stages of project development to ensure consistency with the RTP and consider regional approaches to the mitigation of impacts.

- 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.
- A consultant will be utilized to maintain and update the Eco-Logical Environmental Screening tool.
- Coordinate with the state, resource agencies and local governments to prepare Regional Mitigation Plans and Implementation Strategies.
- Serve as a resource for planning partners, counties, subrecipients, etc. in meeting Title VI, Environmental Justice (EJ), and

public participation mandates.

- Conduct planning to support strategies identified in the environmental justice planning report to address issues such as gentrification, connections to affordable housing, etc.

SUBTASK 4.2 Air Quality Planning

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, SIP weight of evidence measures, and VMEPs. Some of these measures when needed are included in the on-road emission inventories for the Reasonable Further Progress State Implementation Plan (SIP) and for the Attainment Demonstration SIP. H-GAC provides support and guidance for regional congestion mitigation and air quality improvement programs for compliance with the SIP and federal clean air requirements.

- Develop, coordinate, and participate in responses to state and federal air quality plans and new regulations affecting the region. Examine legal and sanction ramifications regarding different standards for the region.
- Provide coordination, participation, and expertise to local and statewide air quality planning committees.
- Provide staff support to H-GAC advisory committees and subcommittees such as the Regional Air Quality Planning Advisory Committee (RAQPAC). Research air quality issues and make recommendations regarding air quality issues to committee members and advise on project selection for the State Implementation Plan (SIP) to the H-GAC Board of Directors and the Transportation Policy Council.
- Revise, print, and distribute the Annual Air Quality Initiatives Report.
- Analyze available on road inventory with respect to size, age, and potential technology upgrades for additional emissions benefits in H-GAC air quality programs including existing and potential TCMs, SIP weight of evidence measures, and VMEPs. Seek additional commitments from implementing agencies.
- Complete annual update of PM_{2.5} Advance Path Forward Plan. Develop potential control strategies for PM_{2.5} emissions in response to the needs identified in the revised Plan utilizing potential strategies throughout the region.
- 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 public on regional air quality issues.

- Research emission reduction concepts and analyze potential regional impact scenarios, present research to regional stakeholders to develop consensus and encourage regional commitments, and work to identify and apply for funding directly or support stakeholder efforts in their own application process.
- Survey intercity tour, transit, and school buses for fleet and vehicle size, fuel usage, and age distributions to determine inventory share of emissions.
- Update regional alternative fuel inventory and infrastructure plan, providing coordination with TxDOT, FHWA and Department of Energy where needed. Research and develop a cost effectiveness comparison of different alternative fuels to diesel and gasoline based on emissions, speed, and operational cost efficiencies. Identify barriers to the expansion of clean alternative fuel technologies. Develop planning materials for presentation to stakeholders.
- A consultant will be utilized to analyze and inventory regional medium- and heavy-duty vehicle idling emissions (including school buses). In addition to the inventory, this analysis will present a spatial analysis of emission generation, including source locations, vehicles information, speeds, levels of traffic.
- A consultant will be utilized for a study analyzing travel patterns, idling, and emissions of drayage trucks operating in and around the Port of Houston area.
- Update regional alternative fuel inventory and infrastructure plan, providing coordination with TxDOT, FHWA and Department of Energy where needed. Research and develop a cost effectiveness comparison of different alternative fuels to diesel and gasoline based on emissions, speed, and operational cost efficiencies. Identify barriers to the expansion of clean alternative fuel technologies. Develop planning materials for presentation to stakeholders.
- Develop a framework to incorporate health effects into H-GAC's regional planning efforts. Document procedures and best practices used by comparable planning agencies and develop a set of strategies that may be incorporated into upcoming Calls for Projects to quantify the environmental justice and health benefit effects of individual transportation improvement projects. As a result of this study, staff will make recommendations for future Calls for Projects and prepare a final report summarizing these results.
- Conduct a review of locally available tools for the assessment of regional greenhouse gas (GHG) emissions. Staff will work to develop procedures to assess the GHG emissions of MPO-related activities and estimate the level of effort that would be required to carry out these procedures.
- Staff will develop potential scenarios that may require additional GHG-related efforts and assess what additional tools and effort would be required under those scenarios.

- Staff will survey other GHG-related efforts already occurring within the region and will prepare a final report summarizing these results.

SUBTASK 4.3 Multimodal System Planning

This subtask will focus on the continued transportation planning considering various transportation modes and connections among modes. This area focuses on thoroughfare planning, freight, transit, bicycle, and pedestrian planning. Activities in this subtask include existing condition assessments, review and coordination among local transportation plans, technical assistance, capacity building tools and activities, coordination with subcommittees, development of recommendations, implementation plans, and performance measures to advance multimodal planning.

4.3a Thoroughfare Planning

The objective of this subtask is to undertake planning and coordination of local thoroughfare plans by representing the single source of information that identifies the thoroughfare planning efforts in the region. The Regional Thoroughfare Plan, to be developed, incorporates the primary features of local government thoroughfare planning efforts into a single, comprehensive transportation plan to promote region wide consistency and continuity regarding arterial street alignments and function between jurisdictions to help guide local government thoroughfare planning decisions on facilities that have inter-jurisdictional and regional significance.

- Continue work on the update to the Brazoria County Thoroughfare Plan.
- Coordinate with the State and local governments to update thoroughfare plans. This includes a review of existing thoroughfare plans and associated policies.
- Conduct consultant contract management and oversight activities for active thoroughfare studies.

4.3b Freight Planning

A major objective of the freight program will be to build freight database, plan for a well- connected freight network, sustain outreach to the local freight community, and to build awareness and expertise among planners and the general public on freight related issues.

- Support state-level freight planning efforts.
- Conduct research and provide updates to committees on freight legislation, policies, and ordinance, and best practices.
- Monitor and update the Critical Urban Freight Corridors and work with partners to identify deficiencies on the network and potential projects.
- Continue development of a freight database and create a freight data portal to facilitate the exchange of information.
- Develop and conduct a freight educational outreach effort, as recommended by the Regional Goods Movement Study, to engage shippers, intermodal interests, freight stakeholders and the public.
- Continue work on the Ports Area Mobility Study to assess potential system improvement alternatives for freight movement as identified from recommendations from the Regional Goods Movement Study.
- Continue consultant contract management and oversight activities for the Ports Area Mobility Study.
- Continue assisting in the update of the 2007 Houston Region Freight Rail Study to address deficiencies in the Houston region's freight network (roads, ports, and railroads) and to develop ways to accommodate and capitalize on future freight movements.
- Conduct an Inland Port Feasibility Study.
- Support freight planning efforts conducted by TxDOT such as freight parking study and state-wide freight plan.
- Conduct an update to the 2013 Regional Goods Movement Plan to understand the changes in the freight industry and prepare for increasing freight traffic in our region.

4.3c Sub-Regional Planning Initiatives

The objective of this subtask is to conduct sub-regional planning projects in various counties, cities, or subareas of the region. These projects may include analysis of existing transportation and land uses, stakeholder and public outreach, transportation modeling, scenario development, and development of recommendations for subareas to guide future transportation infrastructure investment.

- An analysis will be performed to examine mobility in Brazoria County in the Brazoria County Transportation Plan.
- An analysis will be performed to examine mobility in Liberty County in the Liberty County Transportation Plan.
- Mobility issues will be analyzed in the Montgomery County Precinct 2 Mobility Plan.

- The Southeast Harris County Sub-Regional Study will be performed to examine multimodal mobility issues in the southeast Harris County area.
- Conduct consultant contract management and oversight activities for active sub-regional studies.
- Conduct mobility and access management studies to assist local governments to mitigate congestion and improve safety. Consultant may be utilized for the studies.
- The North Houston Community Transportation Priorities Plan represents a concentrated effort to identify existing immediate, short-term, and long-term transportation improvement needs for the communities potentially impacted by construction in this area. This project will re-affirm transportation needs of the plan area and identify transportation network gaps such as needed bike lanes, transit stops, or viable walking infrastructure to provide connectivity. The plan is intended to guide investments and encourage responsible implementation choices that improve multimodal transportation options, increase safety and traffic flow, reduce congestion, and improve air quality while maintaining the aesthetics of the area and improving the quality of life in the communities. A consultant may be utilized for this study.

4.3d. 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.

4.3d.1 Transit Coordinated Planning

The purpose of the regionally coordinated transportation planning effort is to provide more efficient and effective public transportation services, especially for priority populations including seniors (65 and older), persons with disabilities, persons with low incomes, veterans, youth, and others. This effort includes developing, adopting, implementing and updating a coordinated public transit/human services plan as well as assessing progress of activities called for in the plan. The coordinated plan provides strategies for meeting the public's transportation needs and prioritizes transportation services for funding and implementation. Consultant may be utilized to conduct the following studies:

- Conduct phase II of the High Capacity Transit Task Force, including a Feasibility Report on specific HCT service concepts.
- Examine Fort Bend County's transit service through a Transit Framework Study.
- Conduct a Liberty County Transit Study if indicated as a need by the Liberty County Mobility Study.
- Conduct First Mile/Last Mile Feasibility Studies.
- Conduct planning to support inter-city buses
- Conduct planning to connect to affordable housing and major employment centers
- Provide monitoring and planning support for the implementation of priority projects identified in the Regionally Coordinated Transportation Plan (RCTP). Activity may include counties adjacent to MPO region, but not beyond 13-county H-GAC region.
- Coordinate with local transit service providers to initiate plans for the development of new or expanded transit services in counties adjacent to Harris County including but not limited to; Brazoria, Fort Bend, Galveston, Liberty, Montgomery and Waller Counties (where feasible).
- Analysis and recommendations to improve transportation connections to regional destinations.
- Staff continue to be available to support TxDOT's study to assess access for commuter and high-speed rail on US 290 to an intermodal terminal within the Central Business District.

4.3d.2 Transit System Planning

The subtask will focus on the update the recommendations in the Regional Transit Framework Study (RTFS) to reflect new demographic, economic and ridership data and include updated long-range plans from METRO and other regional transit providers. Prepare financially-constrained capital and service recommendations in RTFS for inclusion in RTP. Refine regional transit coordination, integration and implementation recommendations in Framework for ongoing promotion and collaboration with regional transit providers.

- 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. Activity may include counties adjacent to MPO region, but not beyond 13-county H-GAC region.

- A consultant will be utilized for planning support to assist with the coordination of strategies (with local stakeholders) to mitigate regional transit gaps. Activity may include counties adjacent to MPO region, but not beyond 13-county H-GAC region.
- Include advanced planning for gap fillers (this should include studying near-term implementation of regional bus routes recommended by the HCT Task Force Priority Network using local funds, 5311 funds, and TDCs).
- Conduct Regional Transit Marketing planning.
- Connectivity and coordination study between public, private-profit and private non-profit transportation providers.

4.3d.3 Transit Oriented Development (TOD) Planning

The objective of this task is to conduct planning activities to support TOD in the region. The task will include coordination activities with local governments and public transportation providers to identify opportunities for Transit Oriented Design in conjunction with their plans for existing and proposed services.

- Initiate TOD Corridor Data Collection and Interactive Web Mapping to capture accurate data related to demographics, employment, housing, transit, ridership, land values in existing and future HCT corridors, and rail station areas to assist cities, transit agencies, developers, and other stakeholders in identifying development trends and opportunities.
- Work with local governments to conduct TOD planning to improve first-mile and last-mile connections, and to improve economic potential of station areas.
- Work with local governments and transit agencies to create a TOD strategy for the region. Develop equitable TOD strategies to promote equitable development and limit displacement of low-income, minority and elderly and disabled residents.
- Conduct a Regional TOD Framework Study to provide overall strategies necessary to promote sustainable transportation and enhance the land use/transportation connection; development patterns and densities necessary to support High Capacity Transit (HCT) service; and economic viability of implementing alternative land use scenarios along the targeted transit corridors.
- Continue to work with local governments and other transportation agencies to create TOD and transportation data inventory around transit stations to include station, station area, and development data around transit stations.
- A consultant will be utilized to work with local governments to conduct TOD planning to improve first-mile and last-mile connections, and to improve economic potential of station areas.

- Work with local governments and transit agencies to create a TOD strategy for the region.

4.3e Bicycle/Pedestrian Planning

The Transportation Policy Council (TPC) adopted the 2045 Active Transportation 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. Tasks include bicycle pedestrian data collection, mapping, reporting, analysis, outreach, and system planning.

4.3e.1. Bicycle/Pedestrian Data Collection, Mapping, and Reporting

- Continue to work with local governments and other transportation agencies to improve the accuracy of existing pedestrian and bicycle mapping tools.
- Create and conduct an annual active transportation survey of local governments to gather information on (1) existing infrastructure, (2) local policies, (3) planning activities, and (4) regional knowledge of best practices in the field.
- Update the regional sidewalk layer using 2020 aerial imagery and collect additional data on crosswalks, missing sidewalks, and proposed sidewalk improvements.
- Continue to distribute "I Walk Here" and "I Bike Here" surveys to document resident feedback on active transportation use, particularly in Chambers, Brazoria, and Liberty counties.
- Develop a process for collecting, maintaining, and sharing additional data on sidewalks using the 2018 sidewalk GIS layer as the foundation.
- Update the printed regional bikeway map and online Regional Bikeway Viewer to reflect new and proposed bicycle facilities in the region. Synchronize bikeway facility types across local government data and classify regional bikeways by level of comfort.
- Continue to grow and improve the pedestrian and bicycle counter program
 - Coordinate regular pedestrian and bicycle counts at locations throughout the TMA.
 - Maintain existing counter technology and purchase additional devices as needed.

- Develop a method for accepting and processing regular counter requests that meet the needs of H-GAC and local stakeholders.
- Conduct pedestrian and bicycle counts at recently completed TIP projects.
- Develop an online tool for sharing counter data with the public.

4.3e.2. Bicycle/Pedestrian Planning

- Provide technical assistance to local governments and other transportation agencies to identify bicycle and pedestrian issues, opportunities, needs and barriers, and aid in project planning and conceptual design.
- Conduct Local Active Transportation Plans for pedestrian and bicycle improvements.
 - A consultant (or consultants) will be utilized to conduct five Active Transportation Plans to identify specific infrastructure improvements for pedestrian and bicyclist mobility.
 - Conduct consultant contract management and oversight activities for Active Transportation Plans.
- Create a toolbox to accompany the 2045 Active Transportation Plan that shares best practices for designing, funding, and building active transportation infrastructure.
- Conduct a regional Safe Routes to School study to identify specific infrastructure improvements that increase safety and access for students walking and biking to school.
- Conduct a regional First-Mile/Last-Mile Study to identify specific infrastructure improvements that increase safety and access for transit users.
- Work with the Travel Demand Management team to identify employment hubs with a higher likelihood of active transportation use.
- Create a regional pedestrian and bicycle safety action plan.

4.3e.3. Bicycle/Pedestrian Outreach

- Conduct regular classes for both motorists and bicyclists to spread awareness about safe travel behaviors throughout the region.
- Share resources on best practices for local governments and other transportation agencies on topics such as: innovative

bicycle/pedestrian policies, programs, and practices related to design and maintenance for pedestrian and bicyclist facilities; improving connectivity; project management; cost estimation; ADA Transition Plans; Vision Zero strategies; Complete Streets policies; first- and last-mile connections to transit; intelligent transportation systems (ITS) that improve safety for active transportation users; Safe Routes to School strategies; and pedestrian and bicyclist safety generally.

4.3f.1. Connected and Automated Vehicles

- Develop a Strategic Plan for Connected and Automated Vehicles (CAV), which will result in policy recommendations for local and regional municipalities in order to provide consistent guidance for the implementation of CAV technology.
 - Develop and validate scenarios of highly-automated self-driving vehicles and identify how CAVs could support regional mobility, growth and quality of life in the H-GAC region.
 - Refine the CAV Vision Statement and develop a methodology to form a CAV Strategic Plan based upon the CAV Vision Statement.
 - Coordinate with USDOT to provide data from any regional pilot projects.
 - Coordinate with and provide feedback to CAV initiatives in the region.
 - Assist METRO and Texas Southern University with Automated Vehicle pilot project, including evaluation of patronage, operation, and potential expansion.

SUBTASK 4.4 Livable Centers

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 MPO Transportation Management Area (TMA).

- Work with project Livable Centers study sponsors to prioritize projects and promote development patterns that improve safety, increase access to high speed transit, encourage walking and bicyclist opportunities, and support environmental justice. Provide technical assistance and develop tools to advance said priority projects and initiatives.
- Conduct one-on-one meetings with past and current Livable Center project sponsors to ascertain opportunities and barriers to moving projects forward. Assistance provided may include status review of study recommendations, identification of ‘Instant

Impact’ (small-scale, low-cost demonstration) projects and the coordination of the infrastructure design and construction to ensure investments yield multiple benefits (e.g., providing broadband internet lines to underserved areas during roadway construction).

- Develop a database that tracks and maps the implementation of projects and their status including potential internal H-GAC partnerships and external partnerships.
- Develop resource guide for local governments on regulatory and permitting practices that can advance Livable Center principles. Topics may include management of potentially incompatible land uses, promotion of active ground floor uses, and activation and usage of public spaces
- Conduct workshops for local government staff and officials on coordinating land use implementation strategies such as property acquisition and assembly, incentives, and regulations with the design of multimodal transportation facilities that improve safety for all users.
- Assist project sponsors by achieving project readiness for TIP eligibility and other funding sources. Support includes planning-related assistance for environmental processes, planning level costs, and partnership development.
- Provide technical assistance and data to support the development of Livable Center project evaluation for future RTP and TIP updates, as well as other funding programs.
- Conduct Livable Centers Call for Planning Study Partners. New study applications will be received and evaluated for future funding consideration. Handle procurement of consulting services and project management.
- Consultants will be utilized to conduct Livable Centers Studies in conjunction with local project sponsors. 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 estimated Vehicle Miles Traveled (VMT) reductions and air-quality benefits.

SUBTASK 4.5 Transportation Performance Management

Transportation Performance Management (TPM) is a strategic approach that uses system information to inform investment and policy decision to achieve adopted performance goals. TPM allows H-GAC to gauge system conditions and use, evaluate transportation programs and projects and help decision-makers allocate limited resources more effectively.

4.5a Performance Measures and Targets

Performance measures are key metrics selected to understand the current, anticipated and desired level of performance and to illustrate tradeoffs between resource allocation scenarios and investment strategies. For each measure, a targeted level of performance is selected to gauge the effectiveness of actual investments over time.

- Calculate and monitor adopted federal performance measures.
- Coordinate with state and providers of public transportation to select regional target values for each performance measure.
- Develop additional performance measures in support of RTP, TIP and other regional priorities.

4.5.b Congestion Management Process

The Congestion Management Process (CMP) involves the analysis of system, corridor and segment-level performance data to understand the location, extent and duration congestion within the transportation system. Using this data H-GAC informs the selection of performance measure targets related to multimodal congestion and identifies strategies to mitigate and manage congestion. Roadway projects providing additional capacity for single-occupant vehicles are required to conduct an analysis demonstrating alignment with the targeted levels of performance and mitigation strategies.

- Produce annual report on the state of congestion within the H-GAC planning area.
- Revise CMP monitoring network to reflect roadway classification changes and new roadway development, as needed.
- 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.
- Prepare a regional congestion management plan, including goals to reduce vehicle miles of travel during peak commuting periods and improvements to job accessibility.
- Prepare corridor-based congestion management analyses to evaluate the applicability of regional mitigation strategies and identify key congestion hotspots.
- Update the City of Pearland and Brazoria Counties Traffic Management Plan (TMP) which will incorporate current traffic mobility constraints, future mobility needs and assessment intersection capacities and deficiencies for the City residents in

Brazoria, Fort Bend, and Harris counties.

- A consultant will be utilized to review congestion management analyses prepared by sponsors for other roadway capacity projects.

Task 4.0 - FY 2020- 2021

Sub-task	Responsible Agency	TPF		STBG		HRD		Local		Total	
		2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
4.1	MPO	659,305	623,180	-----	-----	-----	-----	-----	-----	659,305	623,180
4.2	MPO	268,171	297,414	-----	-----	-----	-----	-----	-----	268,171	297,414
4.3	MPO	1,779,395	1,694,893	3,710,000	1,990,000	50,000	50,000	-----	-----	5,539,395	3,734,893
4.4	MPO, Other Government Agencies	355,562	371,638	-----	1,700,000	-----	-----	-----	425,000	355,562	2,496,638
4.5	MPO	208,551	211,112	-----	-----	-----	-----	-----	-----	208,551	211,112
Total		3,270,984	3,198,237	3,710,000	3,690,000	50,000	50,000	---	425,000	7,030,984	7,363,237

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

This Page Intentionally Left Blank

TASK V

SPECIAL PLANNING STUDIES

The special studies of Task V include one-time planning activities such as major corridor studies/analyses focused on tourism and transportation resiliency planning activities.

TASK 5 - SPECIAL STUDIES

OBJECTIVES

- Collect and analyze information regarding transportation resiliency.
- Understand the movement goods and freight in the transportation network.
- Analyze information on transportation connections to tourist destinations.

EXPECTED PRODUCTS

- Completed transportation system vulnerability assessment to extreme weather events using FHWA's Vulnerability Framework.
- Region-wide resiliency plan.
- Analysis and recommendations to improve transportation connections to regional destinations.
- Staff continue to be available to support TxDOT's study to assess access for commuter and high-speed rail on US 290 to an intermodal terminal within the Central Business District.

PREVIOUS WORK

- Staff were available to support TxDOT's study to assess access for commuter and high-speed rail on US 290 to an intermodal terminal within the Central Business District (Continuing Task).
- In 2018, H-GAC was selected to participate in FHWA's Resilience Pilots program, through which H-GAC conducted a transportation system vulnerability assessment and adaptation recommendations.
- To date, work on the Resiliency and Durability to Extreme Weather pilot includes forming the analysis team, defining the study's scope, compiling data, and assembling the effort's stakeholder group.
- Coordination occurred to create a MOU between H-GAC and Texas Central Partners to conduct planning related to high-speed rail corridor. A draft scope of work was developed for the SH 225 Corridor Study.
- A draft scope of work was developed for the SH 225 Corridor Study. TxDOT will be

conducting the PEL study, and this scope was modified to conduct a sub-regional study to support the PEL study for this corridor.

- Staff started researching resources related to tourism industry from the work conducted by H-GAC on the Comprehensive Economic Development Strategy (Continuing Task).
- Staff coordinated with TxDOT on the impacts of Harvey on the transportation network.

SUBTASK 5.1

Coordinate resiliency efforts across H-GAC Departments to improve reliability and security of the transportation system to withstand threats from man-made and natural disasters. Region-wide plans will be coordinated with homeland security, disaster preparedness, and post-disaster redevelopment efforts. Deliverable will be a region-wide transportation resiliency plan. In 2018, H-GAC was selected to participate as one of the FHWA Resilience Pilots to develop Resilience and Durability to Extreme Weather Pilot Program projects. Consultant may be utilized for the studies.

- Continue to work on the FHWA Resiliency and Durability to Extreme Weather Pilot project.
- Develop a region-wide resiliency plan.
- Coordinate regional transportation resiliency policy and legislative recommendations.
- Develop resiliency performance measures.
- Develop policies and/ or design standards to reduce storm-water impacts on surface transportation.
- Convene resiliency focused workshop(s) on topics such as asset management and performance measures.
- Develop a region wide Low Impact Development study to examine how to cost-effectively integrate low impact development into transportation projects in the Houston area. It would consider the unique topography, geography, and weather patterns of the region in analyzing costs/benefits of LID alternatives. It would develop a tool-box of strategies for low impact development in transportation projects, including maintenance approaches, to allow the Houston region to better adapt to the recent increase in flooding events.
- Review scenarios for adoption of new technologies in the Houston-Galveston TMA and potential impacts on mobility and congestion. Identify infrastructure and policy necessary to maximize mobility, congestion management and safety.
- A consultant may be utilized to develop a region wide Low Impact Development Study and a study to review scenarios for adoption of new technologies.

Task 5.0 - FY 2020 – 2021

Subtask	Agency Budget	TPF		STRDD		Local		Total	
		2020	2021	2020	2021	2020	2021	2020	2021
5.1	MPO	350,709	309,519	150,000	-----	-----	-----	500,709	309,519
Total		350,709	309,519	150,000	-----	-----	-----	500,709	309,519

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

Budget Summary Table: Task I-Task V (Two-Year Summary)

UPWP Task	Description	TPF Funds		STBG		STRDD		HRD		FTA Sect. 5307		Local Funds		Total Funds
		2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	Combined
1.0	Administration-Management	3,592,997	3,601,394											7,194,391
2.0	Data Development and Maintenance	4,021,492	3,924,372	500,000	1,750,000							750,000		10,945,864
3.0	Short Range Planning	850,877	820,664	800,000						2,577,598	2,643,885			7,693,024
4.0	Metropolitan Transportation Plan	3,270,984	3,198,237	3,710,000	1,990,000			50,000	50,000				425,000	12,694,221
5.0	Special Studies	350,709	309,519			150,000								810,228
TOTAL		12,087,059	11,854,186	5,010,000	3,740,000	150,000		50,000	50,000	2,577,598	2,643,885	750,000	425,000	39,337,728

Combined Transportation Planning Funds ² \$ 23,941,245.00

Estimated Unexpended Carryover \$ 7,500,000.00

TOTAL TPF \$ 31,441,245.00

² Estimate based on prior years' authorizations

This Page Intentionally Left Blank

APPENDIX A
COMMITTEE MEMBERSHIP

Transportation Policy Council (TPC)

The Transportation Policy Council (TPC) was formed in 1992 to provide policy guidance and overall coordination of the transportation planning activities within the region. The TPC consists of 28 members representing cities and counties, the Texas Department of Transportation (TxDOT), the Metropolitan Transit Authority of Harris County (METRO) one at-large member appointed by the H-GAC Board of Directors representing cities with a population greater than 50,000, and one voting member position for representation from the Gulf Coast Rail District.

All members of the TPC are local elected officials, officials of public agencies that administer or operate major modes of transportation in the Houston-Galveston Transportation Management Area, or appropriate officials of the Texas Department of Transportation. TPC also examines the adequacy and appropriateness of the continuing transportation planning process and reviews various agreements entered into for the execution of transportation planning, including the Unified Planning Work Program (UPWP) and the Transportation Improvement Program (TIP).

Regional Safety Council (RSC)

The TPC established the Regional Safety Council (RSC) in 2005 to address the region's increasing traffic safety issues and to advise and make recommendations to the TPC regarding traffic safety policy. The RSC consists of 24 members from a broad spectrum of safety-related professions, including officials and professionals from local and State governments, transportation, law enforcement, health care, insurance, trucking, railroads and non-profit organizations involved in safety.

Greater Houston Freight Committee

In 2016, the TPC created the Greater Houston Freight Committee with the goal of better incorporating private sector freight user perspectives into the transportation planning process. The Committee, with co-chairs appointed by the TPC, seeks to accomplish this through regular open meeting highlighting relevant industry trends and needs. The Committee has identified a locally significant freight roadway network, recommended investment in critical facilities associated with a boom in petrochemical manufacturing and coordinated with Texas Freight Advisory Committee in the updating of the State Freight Mobility Plan.

TPC Officers

Representing	Officer	Alternate
Galveston County	Chairman Ken Clark County Commissioner	Hon. Mark Henry County Judge
City of Houston	First Vice Chair Hon. David Robinson Council Member	Hon. Martha Castex-Tatum Council Member
Waller County	Second Vice Chair Justin Beckendorff County Commissioner	Yancy Scott, P.E. County Engineer
City of Pearland	Secretary Hon. Tom Reid Mayor	Jon Branson Deputy City Manger
Brazoria County	Past Chair Hon. Matt Sebesta County Judge	David Linder Commissioner, Pct 4

TPC Members

Representing	Member	Alternate
City of Baytown	Hon. Robert Hoskins Council Member, District 5	Hon. Heather Betancourth Council Member, District 4
City of Conroe	Thomas Woolley Interim Director of Engineering	Chris Bogart Engineering Manager
City of Galveston	Hon. Craig Brown Council Member	Rick Beverlin Assistant City Manager
City of Houston	Amanda Edwards Council Member, At-Large 4	Hon. Karla Cisneros Council Member
City of Houston	Jeff Weatherford, P.E. Deputy Director Public Works & Engineering	Maureen Crocker Assistant Director Transportation & Drainage Planning
City of League City	Hon. Larry Millican Council Member	Hon. Hank Dugie Council Member
City of Missouri City	Shashi Kumar, P.E. Director, Public Works	Clifford Brouhard Assistant Director, Public Works

City of Pasadena	Hon. Carey Bass Council Member	James Rodriguez Chief of Staff
City of Sugar Land	Hon. Joe Zimmerman Mayor	Hon. Jennifer Lane Council Member
City of Texas City	Hon. Phil Roberts Mayor Pro Tem	Doug Kneupper, P.E. City Engineer
Chambers County	Billy Combs County Commissioner, Pct 4	Cory Taylor, P.E. County Engineer
Fort Bend County	Grady Prestage County Commissioner, Pct. 2	Stacy Slawinski, P.E. County Engineer
Harris County	Steve Radack County Commissioner, Pct. 3	Gary Trietsch, P.E. Director, HCTRA
Harris County	Honorable Lina Hidalgo County Judge	Adrian Garcia County Commissioner
Liberty County	David Douglas Engineering Director	Hon. Jay Knight County Judge
Montgomery County	Charlie Riley County Commissioner, Pct. 2	Hon. Mark J. Keough County Judge
Gulf Coast Rail District	Bert Keller Chairman	Dr. Carol Lewis Texas Southern University
METRO	Carrin Patman Chair	Thomas Lambert President & CEO
Smaller Cities, Harris County	Hon. Trisha Pollard Council Member, City of Bellaire	Hon. Natalie Picha Council Member, City of Seabrook
H-GAC At-Large	Chuck Wemple Executive Director	Jeff Taebel, AICP Director, Community & Environment
Other Transportation Interests	Phyllis Saathoff Executive Director, Port Freeport	Roger Guenther Executive Director, Port Houston
TxDOT Beaumont District	Tucker Ferguson, P.E. District Engineer	Adam Jack, P.E. Director of Transportation Planning
TxDOT Houston District	Quincy Allen, P.E. District Engineer	Eliza C. Paul, P.E. Deputy District Engineer

TPC Ex-Officio Members

Representing	Ex-Officio Member
Texas State Senate	Honorable Carol Alvarado, District 6
Freight Rail Interests	Brenda Mainwaring Union Pacific Railroad, Vice President, Public Affairs
Freight Rail Interests	Hugh McCulley, BSNF Railroad
Texas House of Representatives	Honorable Dennis Paul, District 129
TxDOT Yoakum District	Paul Reitz, P.E., District Engineer
Wharton County	Honorable Phillip Spenrath, County Judge
Texas House of Representatives	Honorable Ed Thompson, District 29

Technical Advisory Committee (TAC)

The Technical Advisory Committee (TAC) reviews and evaluates H-GAC's regional transportation plans and provides its recommendations to the TPC. The TAC is an appointed body, which is comprised of representatives of member governments and special citizen interest groups with expertise in transportation planning. TAC members are appointed by the TPC to assist with the coordination of the Transportation Improvement Program, Metropolitan Transportation Plan and other transportation planning activities.

The Technical Advisory Committee is comprised of elected officials, agency staff, or when appropriate, citizens who have expertise or interest in developing transportation and land use plans, implementing transportation projects, or in related fields. TAC membership reflects the diversity of transportation modes and interests affected by transportation policy decisions to assure transportation planning decisions are considered in their broadest context. The TAC advises the TPC in its development of the UPWP, and the Regional Transportation Plan (RTP) and assists with the development of the Transportation Improvement Program (TIP).

To more efficiently perform its advisory duties, the TAC has created the following subcommittees:

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

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.

Regional Transit Coordination (RTC) Subcommittee - The RTC Subcommittee is responsible for providing guidance regarding the implementation of regional transit coordination pilot projects. The subcommittee also assists with development of initiatives that

expand and improve the efficiency and effectiveness of the current regional transit system.

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

Transportation Air Quality (TAQ) Subcommittee - The TAQ Subcommittee is responsible for assisting MPO staff in expanding existing air quality programs and projects and developing new programs for TIP consideration as well as the analysis and development of on-road transportation emission reduction measures.

TAC OFFICERS

Representing	Primary	Alternate
City of Pearland	Chairman Trent Epperson Assistant City Manager	Robert Upton, P.E. Director of Engineering
Harris County	1st Vice Chair Lloyd Smith Manager	Brannan Hicks, P.E. Traffic Design Team Leader
Environmental & Planning	2nd Vice Chair Maureen Crocker Assistant Director Transportation & Planning	Juan Chavira, P.E. Public Works Ass't Director

TAC MEMBERS

Representing	Primary	Alternate
Smaller Cities	Sharon Valiante Director of Public Works City of Fulshear	Morad Kabiri, P.E. City Engineer City of Friendswood
Rural Transit	VACANT	Perri D'Armond Assistant Director Fort Bend County
Urban Transit	Ken Fickes Director Harris County Office of Transit Services	Vernon Chambers Assistant Director Harris County Office of Transit Services
Environmental/Planning	Andrea French Executive Director Transportation Advocacy Group (TAG)	Theresa Rodriguez President BayTran
Environmental/Planning	Ruthanne Haut Deputy Director Community Services	John Powers Assistant General Manager The Woodlands Township
Environmental/Planning	Dr. Carol Lewis Director of Transportation Policy Texas Southern University	VACANT
Environmental/Planning	Jennifer Ostlind Deputy Assistant City of Houston Planning	Sharon Moses-Burnside Manager, Transportation Planning City of Houston
Citizen & Business Interests	Auggie Campbell President West Houston Association	Larry Buehler Director of Economic Development City of Alvin
Citizen & Business Interests	Bob Eury President Central Houston, Inc.	Irma Sanchez Vice President Westchase District

Intermodal Interests	Bruce Mann Director of Freight Mobility Port Houston	Mark Griffin Director of Facility Planning Port Houston
Intermodal Interests	Mike Wilson Director of Economic Development Port Freeport	Amar Mohite Director of Planning & Infrastructure Harris County
Intermodal Interests	John Tyler Deputy Director Harris County Toll Road Authority	Dale Hillard Senior Staff Engineer Harris County Toll Road Authority
Intermodal Interests	Clark Martinson Executive Director Bike Houston	Veronica Chapa-Gorczyński President East End District
Intermodal Interests	Bill Zrioka Senior Planner Houston Airport System	Megan Campbell, AICP Principal Planner City of Houston
Intermodal Interests	Oni Blair Executive Director LINK Houston	Jonathan Brooks Director of Policy & Planning LINK Houston
Regional Planning	Jeff Taebel, AICP H-GAC Director of Community & Environmental	Chuck Wemple H-GAC Executive Director
METRO	Clint Harbert Vice President System & Capital Planning	Roberto Trevino Executive Vice President
TxDOT Beaumont District	Adam Jack, P.E. Director Transportation Planning & Development	Scott Ayres, P.E. Supervisor Transportation Engineering
TxDOT Houston District	VACANT	Andrew C. Mao, P.E. Director Advanced Transportation Planning
Brazoria County	Matt Hanks, P.E. County Engineer	Karen McKinnon Assistant County Engineer
Chambers County	Cory Taylor, P.E. County Engineer	Billy Combs, P.E. Commissioner, Pct. 4
Fort Bend County	Stacy Slawinski, P.E. County Engineer	Rick J. Staigle, P.E. Assistant County Engineer
Galveston County	Michael Shannon, P.E. County Engineer	Nancy Baher, P.E. Assistant County Engineer

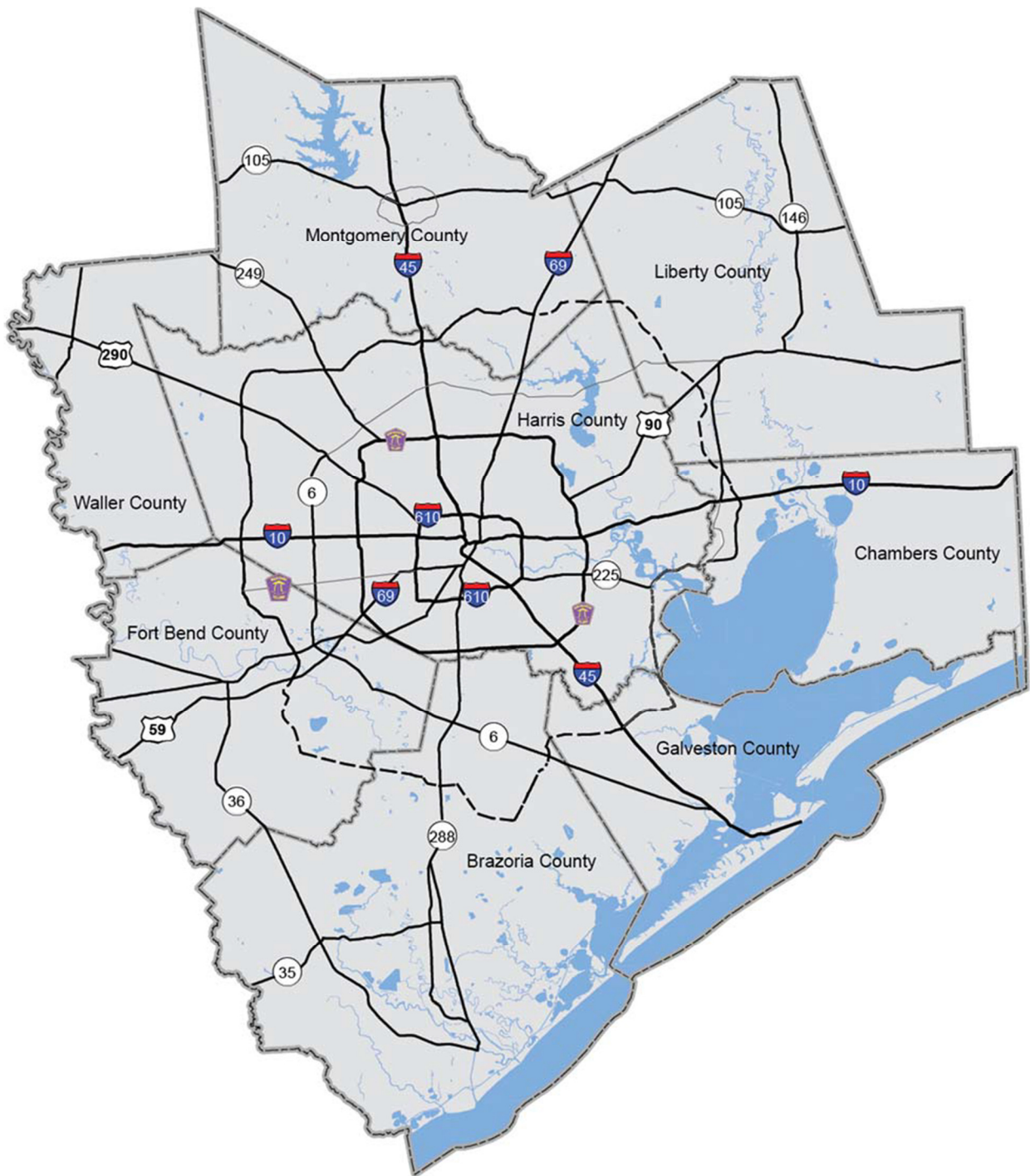
Liberty County	David Douglas Engineering Dept. Director	Hon. Jay Knight County Judge
Montgomery County	Jeff Johnson, P.E. Transportation Manager	Brian Clark, P.E. Engineer III
Waller County	Yancy Scott, P.E. County Engineer	DeWayne Davis Assistant County Engineer
City of Baytown	Ajay Shakyaver Assistant Director	Frank Simoneaux Director of Public Works
City of Conroe	Adam France City Planner	Chris Bogert, P.E. City Engineer
City of Galveston	Kyle Hockersmith Director of Public Works	Daniel Christodoss, P.E. City Engineer
City of Houston	Jeffrey Weatherford, P.E. Deputy Director, Public Works	David Wurdlow Deputy Assistant Director, Public Works
City of League City	Susan Oyler Project Manager	Hon. Nick Long Council Member
City of Missouri City	Shashi Kumar Director of Public Works	Clifford Brouhard Assistant Director of Public Works
City of Pasadena	Sarah Benavides, P.E. Sr. Assistant Director of Public Works	Robin Green Director of Public Works
City of Sugar Land	Lisa Kocich-Meyer Director of Planning	Rick Ramirez Intergovernmental Relations Manager
City of Texas City	Doug Kneupper, P.E. City Engineer	George Schonert Building Official

This Page Intentionally Left Blank

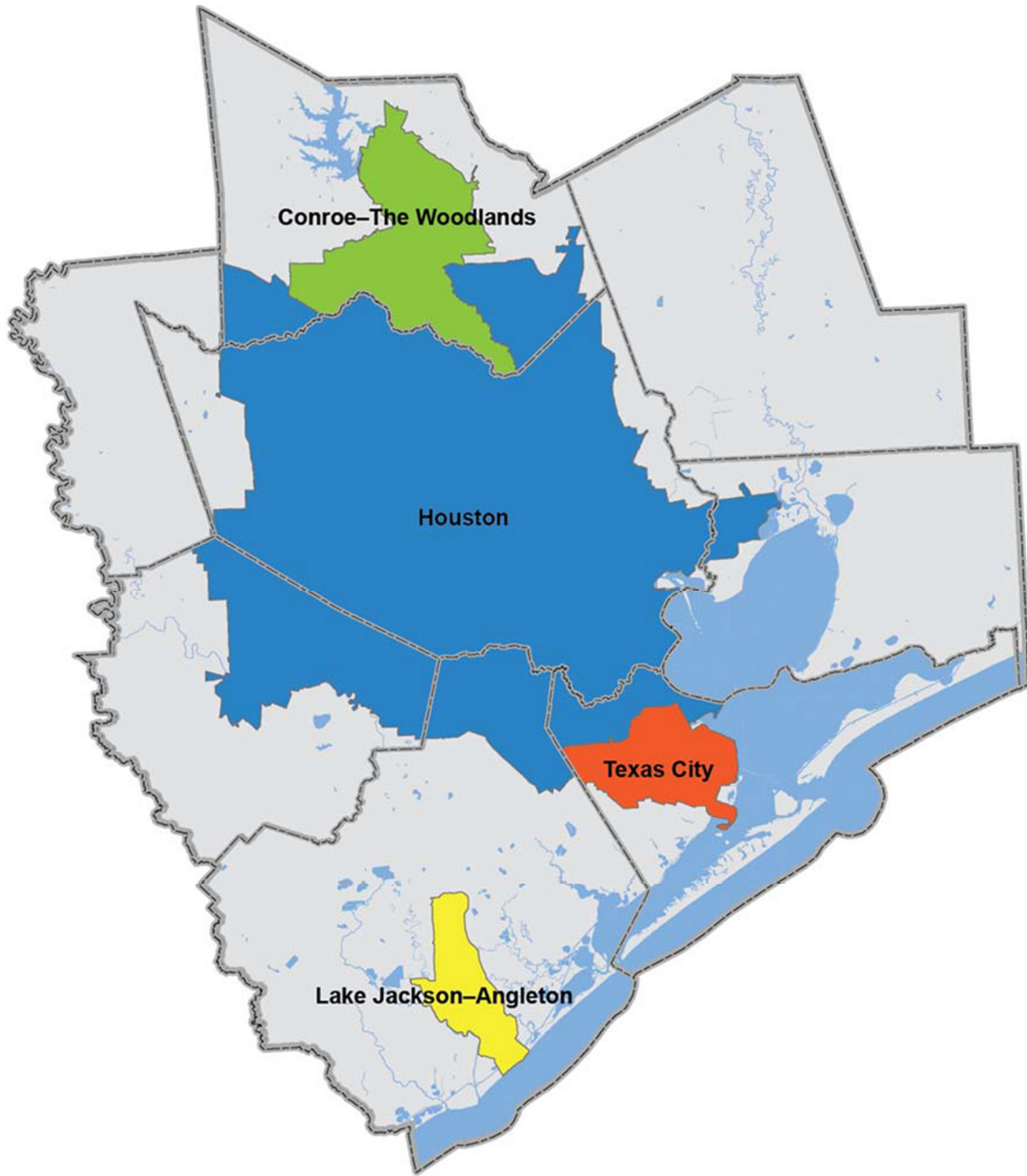
APPENDIX B

MAPS OF THE HOUSTON-GALVESTON TRANSPORTATION MANAGEMENT AREA (TMA) AND URBANIZED AREAS (UZA)

Eight-County Houston-Galveston



**Transportation Management Area
Urbanized Area Boundaries**

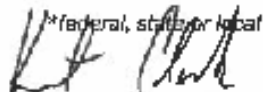


This page intentionally left blank.

APPENDIX C
DEBARMENT CERTIFICATION

DEBARMENT CERTIFICATION
(Negotiated Contracts)

- (1) The _____ H-GAC _____ MPO 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 - Chairman Ken Clark, MPO Policy Committee

Chairman, Transportation Policy Committee

Title

7/26/2019

Date

This Page Intentionally Left Blank

APPENDIX D

LOBBYING CERTIFICATION

LOBBYING CERTIFICATION

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 disclose 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 - Chairman Ken Clark, MPD Policy Committee

Chairman, Transportation Policy Council

Title

Houston-Galveston Area Council MPO

Agency

7/28/2019

Date

This Page Intentionally Left Blank

APPENDIX E
CERTIFICATION OF COMPLIANCE

CERTIFICATION OF COMPLIANCE

I, Ken Clark, Chairman Transportation Policy Council
a duly authorized officer/representative of Houston-Galveston Area Council Transportation
MPO do hereby certify that the contract and procurement procedures that are in effect and
used by the forenamed MPO are in compliance with 2 CFR 200, "Uniform Administrative
Requirements, Cost Principles, and Audit Requirements for Federal Awards," as it may be
revised or superseded.

7/26/2019
Date

Ken Clark
Signature - Chairman Ken Clark, MPO Policy Committee

Attest/
Alan Clark
Alan Clark

MPO Director
Title

This Page Intentionally Left Blank

APPENDIX F

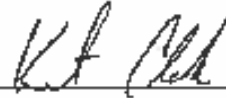
**CERTIFICATION OF INTERNAL ETHICS AND COMPLIANCE
PROGRAM**

CERTIFICATION OF INTERNAL ETHICS AND COMPLIANCE PROGRAM

I, Ken Clark, Chairman Transportation Policy Council,
a duly authorized officer/representative of Houston-Galveston Area Council Transportation
MPO, 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 by 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.

7/26/2019

Date



Signature - Chairman Ken Clark, MPO Policy Committee

Attest:



Alan Clark

H-GAC MPO Director

Title