



2019

Annual Performance and Expenditure Report

Houston-Galveston Transportation Management Area

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TASK I

PROGRAM MANAGEMENT

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

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.

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.

RELATED TRAINING

Subtask 1.1

- IT Security Awareness, (1 staff)
- Agiloft Training, (4 staff)
- SharePoint Training (4 staff)
- MIP Training (2 staff)
- Non-profit Technology Conference (1 staff), March 2019
- TxDOT Local Government Project Management (2 staff), June 2019
- National Highway Institute DBE Training (2 staff)
- FHWA Planning Grant Management Workshop; Course # PLN300 (2 staff), May 2019

Subtask 1.2

- Did not attend training in 2019

Subtask 2.1

- Staff participated and presented "Interactive Tools for Transportation Planning" at the

2019 MPO Socioeconomic Modeling Conference in San Diego, CA

- Staff participated and presented “Job-to-Job Flows in the Houston Metropolitan Area” at the 2019 US Census Local Employment Dynamics Annual Partnership Workshop in Washington DC
- Staff presented H-GAC Regional Growth Forecast, Commute Patterns Viewer, and Activity-Connectivity Explorer at University of Houston College of Architecture, November 12, 2019
- Staff presented H-GAC Regional Growth Forecast and Tools at the 2019 Houston Appraisal Institute Real Estate Symposium
- Staff participated in 2019 Esri User Conference in San Diego, CA
- Staff participated in 2019 Esri Developer Conference in Palm Springs CA
- Staff participated and presented “Interactive Web Mapping Tools for Planning” at the 2019 Houston Area GIS Expo
- Staff received SAS training for data analysis and modeling.

Subtask 2.2

- Local Government Projects Procedure-TxDOT office- May 2019
- TRP national Transportation Planning Application Conference- June 2019
- Advanced SharePoint Features Training-March 2019
- Gulf Coast Regional Transit Trip Planner
- Arc GIS Pro Training-September 2019
- Oracle SQL and PL/SQL, Python Developer, Java Programmer (online course)- January 2019
- ESRI User’s Conference- July 2019
- EPA International Emissions Inventory Conference- July 2019

Subtask 3.1

- Did not attend training in 2019

Subtask 3.3

- ITS Texas Conference (1 staff)
- TxDOT Short Course (1 staff)

Subtask 3.4

- Lifesavers Conference (1 staff)-March 2019
- Traffic Safety Conference (1 staff)-May 2019
- TTI Bike/PED Laws & Distracted Driving Forum (1 staff)-August 2019
- National Dialogue on Highway Automation (1 staff)-November 2018

Subtask 3.5

- Texas Emergency Management Conference (1 staff)- April 2019

Subtask 4.1

- Did not attend training in 2019

Subtask 4.2

- Texas Energy Summit (1 staff), November 2019

Subtask 4.3

- Building Workplace Trust-Management Training (1 staff)- December 2018

Subtask 4.4

- TexITE Conference (1 staff), April 2019
- TxDOT LGP training (1staff), September 2019

Subtask 4.5

- Did not attend training in 2019

Subtask 5.1

- Did not attend training in 2019

PRODUCTS: Work performed and status

1.1a Program Support & Administration

- Managed contracts and agreements between the MPO and participating agencies or subcontractors. The Transportation Accounting and Finance department and H-GAC Transportation staff has worked closely to ensure the efficient processing of contracts associated with their projects.

Task progress: In FY 2019, continued to grow the use of Agiloft to expedite and streamline contract processes; making contracts easier to track and execute. In 2019, began using Agiloft as a tool to store contract documentation for auditing purposes and continuing to implement improvements to the system.

- Maintained financial records for departmental contracts and ensured the payment of invoices.

Task progress: Staff continued to maintain financial records throughout the contract period and the appropriate retention periods following the completion of work. Staff processed all billings for payment within the appropriate time frame.

- Maintained 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).

Task progress: Staff has worked and is working to complete the FY 2019 APER, assisted staff with e-Grant submissions, and worked closely with H-GAC finance to ensure budgeting and expenditure requirements were and continue to be met.

- Provided technical assistance to the Transportation Policy Council (TPC), the Technical Advisory Committee (TAC), and other committees and subcommittees. Technical assistance included preparing meeting materials, meeting notices, maintaining meeting records, an annual training workshop for the respective members, and other assistance as directed. Provided food and non-alcoholic beverages, pending TxDOT approval, at selected meetings and events when deemed appropriate.

Task progress: During FY 2019, agendas, meeting notices, materials (distributed electronically), and staff assistance was provided for all meetings. Records of all meetings were posted on the H-GAC website for each calendar year. During FY 2019 the following committee or subcommittee meetings were supported including but not limited to, 1) Pedestrian and Bicyclist, 2) Regional Transit Coordination, 3) Transportation Policy Board, 4) Operations Task Force, 5) Technical Advisory Committee, 6) Regional Transportation Plan, 7) Transportation Improvement Plan, 8) Transportation Air Quality, 9) Houston-Galveston Clean Cities Coalition, 10) Regional Air Quality Plan Advisory Committee, 11) AERCO Board, 12) Freight Committee, 13) Regional Safety Council, 14) High Capacity Transit Task Force, and other related committee workshops .

- Greater Houston Freight Committee, 2 meetings
- Houston-Galveston Clean Cities Coalition, 3 meetings
- Transportation Safety Council (Formerly Regional Safety Council), 4 meetings
- Regional Air Quality Planning Advisory Committee, 9 meetings
- Aerco Board, 2 meetings
- Transportation Air Quality, 3 meetings

- Technical Advisory Committee, 11 meetings
 - RTP Public Meetings, 5 meetings
 - Joint RTP/TIP subcommittee meetings, 6 meetings
 - Operations Task Force Committee, 4 meetings
 - High Capacity Transit Task Force and Workgroup, 5 meetings
 - Transportation Policy Committee, 11 meetings
 - Regional Transit Coordination Subcommittee, 3 meetings
 - Pedestrian-Bicyclist Subcommittee, 7 meetings
 - Prioritization Planning Workgroup, 2 meetings
 - TPC/TAC member orientation, 1 workshop
- Provided technical assistance to local governments, public agencies, other qualified grant sponsors, and staff regarding federal grant applications, transportation planning activities, and transportation management issues.

Task progress: 1) continued staff assistance with sub-regional studies, 2) continue staff assistance with Harris County and TxDOT on the development of an incident management program, and 3) H-GAC continues assistance with the development of mobility and thoroughfare plans within the region.

- Maintained historical data, publications, and map warehousing/archive libraries, along with an online-query system for public research and access to historical information.

Task progress: HGAC archivist updates, organizes, and manages historical archives via the HGAC website (SharePoint) systematically for the use of all H-GAC transportation staff. Continued use of SharePoint by the H-GAC archivist to transfer historical files to simplify search processes for staff is still implemented to increase transparency.

- The acquisition of supplies, services, software, and equipment to support MPO operations.

Task progress: In FY 2019, administrative staff worked diligently with all transportation HGAC staff to research and find solutions to software issues and updates, the replacement of outdated equipment, installation of new streamlining equipment for meetings, and administrative support to all H-GAC meetings that use technical equipment. (Equipment and software purchases over \$5,000 per unit require prior State and Federal approval.) In 2019, staff computers were updated to 2010 operating system and outdated computers replaced.

- Continued to 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).

Task progress: Staff participated in the events, meetings, and conferences of the above organizations (please refer to the list under subtask related trainings).

- Acquired legal defense/advice with prior State and Federal approval in accordance with 23 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87) for conformity determinations and other issues as determined to be necessary and reasonable to carry out the metropolitan planning process per 23 CFR 420.113.

Task progress: Legal advice was received as needed to conduct MPO activities to meet requirements of the 23 CFR 420.113.

- Engaged in transportation planning related travel, with prior State and Federal Approval for all travel taking place out-of-state. H-GAC continued to use policies and procedures to ensure proper use of State and Federal funds for all travel taking place out-of-state.

Task progress: In FY 2019 new tools were implemented for staff use to ease the travel approval process and streamline travel request.

1.1b Unified Planning Work Program Development

- Maintained 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. H-GAC staff has continued working on the budget and language of the UPWP to keep it as current and as accurate as possible.

Task progress: Amendment processes and tools were executed to ensure the accuracy and reliability of the information being amended into the UPWP. During FY 2019, staff made three amendments to the 2018-2019 UPWP. UPWP and amendments are made available through the HGAC website. During FY 2019 staff worked on the 2020-2021 UPWP following FHWA recommended templates and timelines. Staff completed the 2020-2021 UPWP in a timely manner and met TxDOT submission requirements.

SUBTASK 1.2 Public Involvement and Outreach Program

1.2a Public Involvement

The public outreach program developed public outreach strategies and tactics for transportation planning activities, projects, programs, and plans as outlined in the Public Participation Plan and the Unified Planning Work Program.

PRODUCTS: Work performed and status

- Conducted public outreach activities and provided outreach support for public meetings that corresponded with current and future transportation projects, plans, and studies by publishing legal notices, press releases and advertisements, conducting public meeting arrangements, slideshow presentations and production, and development of meeting educational materials for distribution at the meetings.

Task progress: The public outreach program coordinated five Brown Bag Lunch Series events between October 1, 2018 through September 30, 2019. H-GAC developed the Brown Bag Lunch Series to provide staff and member jurisdictions a forum on education in transportation trends and topics, emerging technologies, and key transportation planning issues facing the industry. Participants were encouraged to bring their lunch during the presentations. The Metropolitan Planning Organization hosted 13 public meeting during this UPWP cycle for the 2045 Regional Transportation Plan, Transportation Conformity, the Unified Planning Work Program, Disadvantaged Business Enterprise.

Plan	Date	Location	Address	Number of Attendees
2045 Regional Transportation Plan	Thursday, January 24, 2019	Friendswood City Hall	"910 South Friendswood Dr., Friendswood, Texas 77546"	32
2045 Regional Transportation Plan	Tuesday, January 29, 2019	Liberty City Hall	"1829 Sam Houston St., Liberty, Texas 77575"	39
2045 Regional Transportation Plan	Tuesday, February 5, 2019	"Kingdom City Houston (formerly Ashford Community Church)"	"2100 Eldridge Parkway Houston, Texas 77077"	15
2045 Regional Transportation Plan	Thursday, February 7, 2019	Tomball City Hall	"401 Market St., Tomball, Texas 77375"	27
2045 Regional Transportation Plan	Tuesday, February 12,	Houston-Galveston Area Council Offices	"3555 Timmons Lane 2nd Fl. Conf. Rm. B	31

	2019		Houston, Texas 77027"	
2045 Regional Transportation Plan	Tuesday, February 12, 2019	Livestream	2045RTP.com	75
2045 Regional Transportation Plan & Transportation Conformity	Wednesday, April 24, 2019	Houston-Galveston Area Council Offices	"3555 Timmons Lane 2nd Fl. Conf. Rm. B Houston, Texas 77027"	41
2045 Regional Transportation Plan	Wednesday, April 24, 2019	Livestream	2045RTP.com	20
UPWP Public Meeting	Wednesday, June 19, 2019	Houston-Galveston Area Council Offices	"3555 Timmons Lane 2nd Fl. Conf. Rm. B Houston, Texas 77027"	10
DBE Public Meeting	Thursday, July 11, 2019	"Houston-Galveston Area Council Offices "	"3555 Timmons Lane 2nd Fl. Conf. Rm. B Houston, Texas 77027"	8

- Provided public information on regional transportation issues through a multitude of outreach activities including public meetings, television, radio, digital and social media, and print.

Task progress: Publicized public meetings and public comment periods for MPO programs, projects, plans, and studies, the public outreach program utilized various communication tactics that included legal notices, social media postings, website postings, community calendar and event postings, social media advertising, digital advertising, news releases, flyers, e-mail marketing, presentations, letters, information kits, and direct mail.

- Solicited public comments on transportation programs, projects, and policies, and responded to public comment in a timely fashion.

Task progress:

The public outreach program coordinated a total of 13 public meetings and received a total of 1,207 public comments during the 2018-2019 UPWP year. The MPO received public comments, in writing, at public meetings through online submittal or via email. The MPO provided the public the opportunity to submit public comments via mail, email, online submittal, in-writing at public meetings, fax, or voicemail.

- Created 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.

Task progress: The public outreach program developed a wide variety of communication pieces including the annual Mobility Report, the Waller County Transportation Plan, the State of Safety Report, the Regional Transportation Plan for example. The public outreach program conducted the annual Zip Zone Map Campaign that educated residents in the zip zone map area codes on which zip zone they live in and how to prepare for an evacuation. The Together Against the Weather campaign also ran March through November and educated residents, stakeholders, community organizations, and local governments on how help special needs populations prepare for hurricane season. The public outreach program regularly posted transportation planning information on social media platforms including Facebook, Twitter, YouTube, Instagram, and LinkedIn along with distributing the monthly transportation newsletter, Region View.

- Developed and maintained listservs and community contact lists to ensure adequate distribution and notices of public meetings and materials to interested parties.

Task progress: The public outreach program maintained a community contact and stakeholder list for distribution of public meeting information and materials.

- Provided live-streaming of Transportation Policy Committee meetings and other meeting events as determined.

Task progress: The public outreach program provided live-streaming of the Transportation Policy Council meetings in compliance with SB 1237 (84th Legislature) each month. Recipients on the contact list received an email notification reminder on how and when to access the link to watch the live-streaming sessions. Archives of the live-streaming sessions may be found on the MPO website.

- Developed partnerships with community organizations to provide public information on regional transportation issues, projects, and studies.

Task progress: The public outreach program developed the annual Mobility Report (2019) that summarizes key economic and transportation performance indicators that reflect the region's progress toward achieving a safe, reliable, and multimodal transportation system. A digital edition of the report may be found on the website. Public outreach staff participated in dozens of community outreach events such as monthly United Way meetings, quarterly AMPO Public Involvement meetings, the monthly PIO Network meeting, and Public Relations Society of America meetings. The public outreach program has partnered with various organizations and groups to provide public information on regional transportation issues, projects, and studies including

chambers of commerce, municipalities, non-profit organizations, and super neighborhoods.

1.2b Policy and Government Affairs

- Provided MPO comments to federal and state agencies regarding proposed rules as part of the rule making process.

Task progress: Continued to provide MPO comments to the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and the Environmental Protection Administration (EPA) to proposed rules from these agencies as part of the federal rule-making process.

- Organized seminars, peer exchanges, and peer reviews as necessary to facilitate communication between MPOs, federal, state, and local agencies.

Task progress: Continued to organize and/or participate in seminars, peer exchanges, and peer reviews as necessary to facilitate communication between MPOs, federal, state, and local agencies, providing food and non-alcoholic beverages, pending TxDOT approval, when deemed appropriate.

- Provided outreach support including briefings and printed materials for policy makers on federal and state issues relevant to the regional transportation planning process.

Task progress: Continued development of briefings and printed materials for policymakers on federal and state issues relevant to the regional transportation planning process. Participated in best practices and public involvement training workshops when resources are available.

TASK I FUNDING SUMMARY

Responsible Agency	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
Task I - Program Management				
FHWA-FTA TPF	\$3,443,172	\$2,894,496	\$548,676	84%
STP - Cat 7	\$0	\$0	\$0	
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
Other Local	\$0	\$0	\$0	
	\$3,443,172	\$2,894,496	\$548,676	84%

TASK II

DATA DEVELOPMENT AND MAINTENANCE

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

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

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

PRODUCTS: Work performed and status

2.1a Socioeconomic Data

- Staff continued 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.
- **Task Progress:** Databases with aggregate socioeconomic data were kept updated with the latest available information.
- Staff continued researching, obtaining, and processing information on the location, timing, and details of planned development projects in the region. Staff continued maintaining and updating databases with such information.

Task Progress: Information on planned development projects and plats were continuously collected and integrated with the forecast model data and the Regional Land Use Information System.

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

Task Progress: Staff processed 2018 County Appraisal data and updated the Model Buildings and Parcels database. Staff processed 2018 InfoGroup data and updated the Business/Employment database. Staff continued validating the Model Parcels and Buildings data using the aerial imagery and other data sources.

2.1b Socioeconomic Models

- Staff continued improving and enhancing the existing operational version of the demographic and economic macro forecasting model.

Task Progress: The model was updated with the latest available information from US Census American Community Survey, US Census LEHD, Bureau of Labor Statistics, Bureau of Economic Analysis, and other public agencies. Staff developed new population, employment and household control totals for the 2018 High Growth Forecast Scenario. Staff analyzed the job-to-job flows of the Houston Metropolitan Statistical Area (MSA), which provide new insights to the changing demographic and socioeconomic characteristics of region's population. and discusses some essential questions of the Houston MSA's workforce and economic structures.

- Staff, in cooperation with the Travel Demand Modeling group, developed scenario-based regional integrated "land use-transportation" small-area population and employment forecasts for transportation planning purposes.

Task Progress: A fully integrated (land use-transportation) forecast version was released in May 2019.

2.1c Information Services and Analytical Support

- Staff continued improving and enhancing the existing web-based mapping and database query applications allowing easy access to socioeconomic data by transportation partners and general public.

Task Progress: 1) Staff updated the Regional Land Use Information System with the 2018 Regional Growth Forecast released in May 2019. 2) Staff updated the Demographic Data Explorer, Regional Demographic Snapshot, Regional Employment Snapshot, and the Commuting Patterns Tools with the latest data from US Census American Community Survey and The Longitudinal Employer-Household Dynamics data. 3) Staff released a new interactive report that analyzes job-to-job flows by workers in the Houston Metropolitan Area. 4) Staff developed several new web mapping applications including Regional Crash data, Regional Occupational Snapshot, Eco-Logical, and Current County Data to provide quick and easy access to regional socioeconomic and transportation safety data.

- Staff provided informational services and analytical support to H-GAC Transportation staff, transportation agencies, local governments and their consultants in support of

regional transportation planning activities and studies.

- **Task Progress:** Staff has provided informational and analytical assistance to the agency staff and to local governments and their transportation consultants. Staff developed the Eco-Logical Base map and application to measure the impact of future transportation projects on the regional ecosystem. Staff also developed Crash Data Dashboard and Viewer to provide quick and easy access to regional crash data. Staff served on the TxDOT SMART study Steering Committee and provided technical assistance. Served on Steering Committee and provided data to Greater Houston Community Foundation *Understanding Houston* indicators projects.

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

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

PRODUCTS: Work Performance and Status

2.2a Transportation Data & Modeling Support

- Used Geographic Information Systems (GIS) to develop menus, macros, programs, and user manuals needed to display and evaluate transportation tasks.

Task Progress: The GIS Group of the Transportation Modeling used ARCMAP GIS extensively to develop roadway information and related proposed projects within the H-GAC region for various regional, sub-regional, corridor projects, studies and analysis in support of the Regional Transportation Plan (RTP), Transportation Improvement Programs (TIP) and in support of the regional conformity findings. Program menus and scripts were often written by staff to execute some repetitive functions and tasks towards achieving these goals. Provided programming support for modeling and GIS applications, applied GIS and cartographic modeling techniques to enhance spatial analysis of demographic and travel data, developed and support a region traffic data viewer, developed and continues to enhance the functionalities a website for Hardy Traffic Volumes, and staff attended meetings and participated on committees of the GIS user groups, network users groups and other technical support groups as needed.

Status – Ongoing.

- Maintained, refined, and enhanced the data required to operate the travel demand models,

including the road network, segment nodes, and traffic analysis zones.

Task Progress: Staff worked with both the RTP and TIP groups within H-GAC, and other H-GAC member agencies such as TxDOT, METRO, other H-GAC's regional fixed transit route providers, and stakeholders to develop a much better representative of roadway and transit projects, within the H-GAC MPO region for planning, studies, and analysis. H-GAC, in conjunction with METRO, are sponsoring a regional Origin-Destination Transit Survey with the support of other regional providers.

Status - Ongoing

- Provided programming support for modeling and GIS applications.

Task progress: Staff continued to enhance the advanced capabilities and functionalities of the Modeling Activity Based Model (ABM) and the 4-Step Modeling process through the Cube Voyager modeling software, and the advance programing, macros and menus scripts of ARCMAP.

Status - Ongoing

- Created maps and other GIS-related publications as needed.

Task progress: Staff continued to use the geographic Information System software, the ARCMAP, to code support the various transportation projects and the related social economic data such as population and employment data for both within H-GAC and outside uses in support of the Regional Transportation Plan (RTP), the Transportation Improvement Programs (TIP), Conformity Findings, and other corridors and sub-regional planning studies, and analysis.

Status - Ongoing

- Maintained the GIS-based Project Viewer in TELUS for TIP and RTP projects.

Task progress: Staff continued to use the database and graphic functionalities of GIS-based Project Viewer in TELUS for the TIP and RTP project development, displays and queries. Bicycle layers have also been added as separate layer for queries.

Status - Ongoing

- Applied GIS and cartographic modeling techniques to enhance spatial analysis of demographic and travel data.

Task progress: Staff used the ARCMAP and the Cube Voyager GIS functionalities for displays, mapping and other cartographic tools and techniques to support travel demand

modeling and planning activities within the agency, and to provide technical support and assistance to other member agencies especially during corridor/sub-area studies, travel demand modeling and forecasting, plan reviews and development.

- A consultant was utilized to determine the method, cost and design for collecting household origin and destination data. These data were used for updating the regional travel demand model.

Task progress: Consultant RSG delivered a recommendation plan which identified surveys and passive observed data inventories to be collected in next few years for travel demand model validation and calibration. With the assistance of the TTI and the State TXDOT, several meetings were held to develop a plan that discussed the advantages and disadvantages of the possible common travel surveys and data that can be collected. The plan estimated the cost, the sample size, and frequency of household and other survey data to be collected.

Status - Ongoing

2.2b Travel Demand Forecasting

- A consultant was utilized to assist with technical support for the implementation and improvement of the Cube model set.

Task Progress: Staff continued to provide Travel Demand and Forecasting technical support and assistance in the implementation of the Transportation Planning and Travel Modeling Techniques. Staff continued to use the professional assistance and technical support of TTI and CJ Hensch & Associates to support various advanced Travel Demand Activities and data collections both at the regional and sub-regional levels in the areas such as: Advanced Travel Demand and Forecasting support, and traffic speed and count data collection on the freeway system to validate travel demand model. other support towards our conformity process (e.g. MT Mix data, hourly factor to distribute our 4-time period VMT into 24-hrs data, seasonal factors corrections, HPMS factor correction, evaluating traffic counts locations and technique to validate travel demand model, and TxLED Reduction factors), quantifying delay, emission, safety benefits of various traffic improvement projects for TIP calls for projects and etc.

Staff worked with TTI consultants and completed a selection of more than 2000 traffic count sites from new growth areas and from high traffic volume locations. Our selected contractor, CJ Hensch & Associates, is conducting traffic data collections right now. Staff worked with ms2soft web host to upload 2016-2017 traffic count data files for live public view. Staff has worked and is working with ms2soft web host to upload 2018-2019 traffic count data files for live public view.

Status - Ongoing

- Supported the development of the TIP, RTP, sub-regional planning, and other studies such as the Hardy Tollway Extension, toll revenue studies, member agency mobility plans, and environmental justice assessments.

Task progress: 1) Staff continues refined the highway network input data into the travel demand model to include the re-alignment of the I-45 Downtown/Pierce elevated corridor, and other proposed TIP and RTP projects, and continues to re-route all transit routes to the newly proposed I-45 alignment. Staff continues to provide travel demand and forecasting to support to the Regional Transit Framework Study (RTFS), the Hardy Tollway Extension to downtown study, the Brazoria County, Montgomery County Precinct-2, Southeast Harris County, and the Liberty County Mobility plans. Staff continues to work with H-GAC forecasting Group in updating the social economic data inputs into the travel demand model used for the air quality analysis in the H-GAC's MPO region. Staff continues to provide modeling and forecasting technical support for the production of the transportation air quality conformity calculations to the current SIP, RTP, and TIP as per the federal requirements. Staff obtained Regional Economic Model (REMI) software for RTP project evaluation, user benefit cost analysis, and economic impact analysis, and gathered travel demand and project costs data for High Capacity Transit scenario runs.

Status - Ongoing

- A consultant was utilized to assist with the review and assessment of existing evacuation analysis tools for application in the MPO region.

Task Progress: Staff continues to review and assess traffic data used in base year networks, including AVI, Wavetrnix, Bluetooth, Private Data and ATR data to help rectify the modeling network. Staff continues to periodically review and update various traffic data including: AVI, Wavetrnix, Bluetooth, private data and ATR data, used to rectify the modeling network which serves as a very important input into the travel demand modeling and forecasting model.

Status - Ongoing

- Reviewed and assessed demographic data and other model inputs.

Task Progress: Staff continued to work with the H-GAC forecasting Group in updating the social economic data inputs into the travel demand model used for the air quality analysis both for the H-GAC regional planning and corridor and sub-regional studies.

Status - Ongoing

- Continued VISSIM and Dynasty models Developments for use in corridor and

Mesosopic Analyses.

Task Progress: Staff continued to develop skills in the use of VISSIM and Dynasty Models for the Microscopic and Mesoscopic analysis of some of the corridors in the region (e.g.: I-610 ramp and SH 146). Staffs attended trainings at the Houston TXDOT on Dynasty Model.

Status – Ongoing

- Continued work on air quality conformity determination to ensure the region does not exceed its motor vehicle emissions budgets.

Task Progress: Staff completed conformity determination in conjunction to I-45 North Houston Highway Improvement Project, and the conformity determination was accepted in April 2018. Staff continues to develop the RTP and TIP, and the conformity to support the amendments to the RTP and TIP. Staff continues the development of a set of utilities that utilized the MOVES model to conduct conformity analysis, emission inventories, and air quality status.

Status – Ongoing

- A consultant is continued being utilized to assist with the continued development of a Cube Cargo Truck Tour-Based Model.

Task Progress: Staff continues to work with the Cambridge Systematic Consultants to develop the regional truck tour-based model. Project is currently at the model validation stage, as the collection of the traffic count data needed for the validation is still in progress.

Status - Ongoing

- A consultant was utilized to assist with participants 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.

Task progress: Staff modified and updated the utilities to equal the utilities used to develop the SIP. Conducted modeling of proposed design alternatives to Kirkwood Drive in Meadows Place. Staff provided modeling support and assistance in the development of the roadway network and the 4-step modeling for the traffic study of the Kirkwood Drive in Meadow Place. Provided technical support and assistance in the maintenance and upgrade of Activity Based Model and other aspects of advanced travel demand and analysis. Staff worked with Cambridge Systematic to update the Activity

Based Model with multi-threading technology, reducing the running time by half.

Status - Ongoing

- Developed a regional base map for use with the Statewide Traffic Analysis and Reporting System (STARS II) to input data into the federal Highway Performance Monitoring System.

Task progress: Staff provided technical support on FHWA's CMP Performance Measure set, pavement condition, and set reliability and excessive delay. Staff produced slides explaining the concepts and mathematical formula of these performance measures and coordinated with TXDOT and TTI on calculating the base year measure and future year targets.

- Staff meetings, trainings and participation

Task Progress: Staff attended meeting/training and participated in network users groups and other technical support groups as needed as follows:

- Local Government Projects Procedure - TXDOT office - 05/02/2019
- TRP national Transportation Planning Application Conference – 06/02 – 06/05 2019, Portland Oregon
- Advanced SharePoint Features Training – 03/20/2019, HGAC office
- Gul Coast Regional Transit Trip Planner HGAC office
- ArcGIS Pro Training, 09/27 – 09/29 2019, HGAC office

Status – Ongoing

TASK II FUNDING SUMMARY

Task II - Data Development and Maintenance				
Responsible Agency	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
FHWA-FTA TPF	\$3,911,744	\$3,550,349	\$361,395	91%
STP - Cat 7	\$0	\$0	\$0	
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
Other Local	\$0	\$0	\$0	
Subtotal	\$3,911,744	\$3,550,349	\$361,395	91%

TASK III

SHORT-RANGE PLANNING

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

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 (see Subtask 4.1), 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.

PRODUCTS: Work Performed and Status

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

Task Progress: The 2019-2022 Transportation Improvement Program (TIP) was developed by staff in cooperation with the Texas Department of Transportation and member agencies. It included new performance measures addressing safety, infrastructure, system performance, and transit asset management as defined by the Fixing America's Surface Transportation (FAST) Act. It programmed 309 projects which were sponsored by 47 members agencies with \$7.2B of federal, state and local funds. It

was approved by the Transportation Policy Council on May 25, 2018 and by the Federal Highway Administration on October 1, 2018. In conjunction with the Texas Department of Transportation and project sponsors and staff processed 192 amendments to the TIP and the 2045 Regional Transportation Plan.

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).

PRODUCTS: Work Performed and Status

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

Task progress: Additional projects were added to the Ten-Year Transportation plan during the 2018 Call for Projects. The Ten-Year Transportation Plan, and its amendments, are published on the H-GAC Transportation Department webpage.

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.

PRODUCTS: Work Performed and Status

- Projects selected in the 2018 Call for Projects were further evaluated for readiness as they are being placed in the TIP.
- In May 2019, the Transportation Policy Council (TPC) approved the creation of a Project Prioritization and Policies Workgroup. The goal of the Workgroup is to evaluate the previous call for projects and develop recommendations to the TPC on goals and policies to be implemented in the next call for projects. The Workgroup began meeting in September 2019 and will provide recommendations to the TPC in early 2020.

- Coordinated with TxDOT regarding statewide project evaluation and selection processes.
- Provided presentations and conduct workshops to inform potential project sponsors regarding project funding opportunities, evaluation criteria, and project delivery.

Task progress:

Project sponsors of the recent 2018 Call for Projects as well as existing project sponsors were invited to H-GAC to attend a project development workshop. The workshop was held in October 2018 with the goal of informing project sponsors of the project development process and timeline.

Meetings with the Project Prioritization and Policies Workgroup began this year and will be completed in early 2020. Meeting with the Workgroup have yielded a draft report of goals, policies, and prioritization that

Staff continues to work with TxDOT to build on the H-GAC project evaluation criteria to align with the state selection processes.

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.

PRODUCTS: Work Performed and Status

- A consultant was utilized to continue the development and improvement of the online project information database to allow for enhanced project tracking and access by member agencies ((Transportation Planning Funds (TPF))).
- Tracked and reported on the development status of projects using information from available databases and sponsor data requests.

- Provided 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.

Task progress: Over the last year H-GAC staff re-evaluated the MOTION software and determined that it would not meet the needs of our TIP/RTP process. Staff began working on evaluating other software options. Determination of a final software solution will continue into FY 20.

Throughout FY 2019, staff continued to track and report on the development of projects. Staff sent project status requests to project sponsors and local governments and then updated the project tracking system accordingly. To improve project readiness and on-time delivery, staff has increased coordination efforts between TxDOT and local project sponsors. Meetings with TxDOT and the project sponsor have resulted the advancing of several air quality projects. In turn, these meetings have also resulted in project delays to better program the projects in the year that they will be ready.

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 governments 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.

PRODUCTS: Work performance and status

- Provided planning support for the Commuter and Transit Pilot Program, including evaluation and monitoring of program design, performance, and coordination with potential service providers.
- 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.
- 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.

Task progress: 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 2019 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.

SUBTASK 3.3 Regional Operations/Intelligent Transportation Systems Planning

The aim of Regional Operations Planning is to improve efficiency and safety of the transportation system in the area through the 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

PRODUCTS: Work performance and status

- Maintained and revised information on the regional ITS Architecture when needed.
- A consultant was utilized to update the regional ITS Architecture and other ITS-related documents based on Regional transportation Systems Management and Operations (TSMO) Self-Assessment.
- Distributed planning information regarding ITS Architecture to public sector entities in the TMA involved in the implementation of ITS.

Task Progress: Completed Contract with the Texas A&M Transportation Institute to perform the following tasks 1) develop a Regional Capability Maturity Roadmap Tool, updated the Regional Architecture and develop a User Base Regional Architecture System, Risk Based Systems Engineering Evaluation Process, and Development of Standard Templates; Risk Based Systems Engineering Process and Systems Engineering Templates, and create a Regional TSM&O Documentation Database. . Reviewed www.tsmo.h-gac.com with workgroup and uploaded Standard ITS Projects System Engineering Templates to website.

3.3b Incident Management

- Coordinated and partnered with Houston Transtar to provide support for regional incident management activities.
- A consultant was utilized to support training for regional incident management responders based on the FHWA's Strategic Highway Research Program 2 (SHRP2).
- Continued coordination with local governments and agencies to plan for the implementation of expanded incident management activities throughout the region.

Task progress: There were 30,109 "No Cost" Tows from October 1, 2018 to September 30, 2019 with tows averaging at 2,800 tows per month. Tows are funded by 61.1% wreckers, 17.5% law enforcement, 10.4% citizen calls, 11.0% CCTV@ Houston Transtar. Tow failure types are as follows, 67.0% mechanical and 23.0% tire failure. Clearance time is on average 16 minutes and 25 seconds.

SUBTASK 3.4 Safety Planning

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

PRODUCTS: Work performance and status

3.4a Safety Data Analysis, Reporting, and Planning

- Produced 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.

Task progress: Staff produced annual State of Safety Report and presented to the Regional Safety Council and TPC.

- Developed a Regional Transportation Safety Plan to identify areas of concern in transportation safety, appropriate counter measures for addressing safety issues, and funding sources for remediating these issues (to be incorporated into the RTP).

Task progress: Staff developed a Regional Transportation Safety Plan which identifies transportation safety focus area; plan was adopted by the Transportation Safety Committee and TPC.

- Researched and analyzed crash data from TxDOT's Crash Record Information System (CRIS) and assisted agencies in assessing problem locations with CRIS data.

Task progress: Staff assisted local agencies and their consultants with seven different crash data assessments.

- A consultant was utilized to conduct safety analysis at pilot intersection locations that have high crash density (TPF).

Task progress: A scope of work was developed for this project. Consultant selection and project initiation pending receipt of funding.

3.4 Safety Outreach

- Conducted non-lobbying participation in local, state, and national initiatives involved in promoting increased traffic safety. Coordinated trainings and workshops on safety-related issues for agencies and regional implementers, if available or needed.

Task progress: Staff attended CRIS Administration Forum in February 2019 to improve quality of crash data; Staff attended the 2019 Lifesaver Conference in March 2019; Staff attended the 2019 TxDOT Traffic Safety Conference in May 2019; Staff presented on development of the Regional Safety Plan at the ITE State Conference in July 2019; Staff attended Ped-Bike Law Workshop and SHSP Distracted Driving Forum in August 2019.

- A consultant was 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 included 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 (Surface Transportation Program (STP)).

Task progress: Consultant selection was completed, and initial campaign development occurred in 2019.

- Conducted consultant contract management and oversight activities for traffic safety public outreach project.

Task progress: Staff continued consultant contract management and oversight for the regional safety campaign consultant contract, slated to go public early 2020.

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.

- 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.

Task progress: Staff continued to coordinate with TxDOT to update Web Based Evacuation Map.

- Updated and maintained the Zip Zone and Evacuation Route maps and provide to interested parties as requested.

Task progress: Zip Zone and Evacuation Route maps were updated March 2019 to reflect approved route changes and modifications.

- Provided on-going support and training to local governments and State regarding evacuation planning.

Task progress: Staff participated in hurricane evacuation outreach events, such as Together Against the Weather, and coordination meetings with local governments throughout the FY 2019.

TASK III FUNDING SUMMARY

Task III - Short-Range Planning				
Responsible Agency	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
FHWA-FTA TPF	\$1,314,832	\$706,542	\$608,290	54%
STP - Cat 7	\$1,733,000	\$502,961	\$1,230,039	29%
TxDOT State Funds	\$9,900	\$0	\$9,900	0%
FTA 5304/5307/5309/5339	\$2,231,050	\$50,000	\$2,181,050	2%
Other Local	\$0	\$0	\$0	
Subtotal	\$5,288,782	\$1,259,502	\$4,029,280	24%

TASK IV

LONG-RANGE PLANNING

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.

SUBTASK 4.1 Investment Priorities and Project Planning

This subtask will focus on developing and setting investment priorities for the transportation infrastructure within the eight (8) counties Transportation Management Area. Key areas of focus in this subtask include setting quantifiable performance measures and targets for transportation safety, asset management, congestion mitigation, and air quality. Development of investment priorities will align with the long-term vision, goal, strategies, and performance targets established in the Regional Transportation Plan. The transportation system performance will be evaluated periodically toward the achievement of performance targets.

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.

PRODUCTS: Work performed and status

- Developed 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.
- Monitored changes to planning and project assumptions and amend the RTP as necessary.

- A consultant was 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 (Transportation Planning Funds (TPF)).

Task progress: The 2045 RTP was approved in June 2019 by the Transportation Policy Council. The 2045 RTP met all the requirements of the current surface transportation legislation and was financially constrained based on the financial forecasts produced in the financial planning effort. The 2045 RTP contains over \$130 Billion in surface transportation projects and programs that help meet the established RTP goals.

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.

Work performed and Status:

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

Task progress: Due to time constraints, the Financial Planning work for the development of the 2045 RTP was completed by H-GAC staff. H-GAC staff worked with regional partners to gather financial information and then worked this information into the financial model to produce the forecasts out to 2045.

H-GAC staff awarded over 5 million TDCs to projects in the metropolitan planning area. This includes roadway, transit and other air quality programs and projects. Staff submitted the TDC Annual Report to TxDOT by the December 2019 deadline.

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.

PRODUCTS: Work performed and status

- Provided 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 was utilized to maintain and update the Eco-Logical Environmental Screening tool (Transportation Planning Funds (TPF)).
- Coordinated with the state, resource agencies and local governments to prepare Regional Mitigation Plans and Implementation Strategies.
- Served as a resource for planning partners, counties, subrecipients, etc. in meeting Title VI, Environmental Justice (EJ), and public participation mandates.
- Developed a report on environmental justice planning activities and analysis.

Task progress: H-GAC Transportation staff, in coordination with staff from the Community and Environment Department, worked to finalize the development of the next version of the Eco-Logical tool. Staff also coordinated with state, natural resource agencies, local governments, and conservation groups on the redevelopment of the Eco-Logical tool and the expansion of its functionality. The added functionality will facilitate: 1) pre-environmental screenings, 2) transportation planning, and planning environmental linkages (PEL) studies, and 3) development of regional mitigation plans and natural resource conservation strategies. The new version of the Eco-Logical tool is available on the H-GAC webpage.

- Staff continued to support compliance with Title VI and Environmental Justice mandates within and outside H-GAC. Staff has completed the report on Environmental Justice planning activities and analyses for the MPO region and has also submitted the agency's triennial Title VI Program compliance report to the FTA. The Title VI and Environmental Justice reports are available on the

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.

PRODUCTS: Work performance and status

- Developed, coordinated, and participated in responses to state and federal air quality plans and new regulations affecting the region. Examined legal and sanction ramifications regarding different standards for the region.

Task progress: During FY 2019, the Regional Air Quality Planning Advisory Committee (RAQPAC) reviewed air quality-related activity within the state and the region. As part of this effort, staff worked to keep RAQPAC members aware of activities related to air quality occurring as part of the 86th Texas Legislature. This involved arranging monthly updates to members on the status of bills related to air quality. Additionally, in the run-up to and during the legislative session specific attention was given to the status of legislation related to the TERP program.

- Provide coordination, participation, and expertise to local and statewide air quality planning committees.

Task progress: Staff participated in the local Greater Houston Partnership Sustainability Advisory Committee as well as the statewide Texas Clean Air Working Group, the Texas Technical Working Group for Mobile Source Emissions, Houston Smart City Advisory Council, Houston Climate Action Plan, EVolve Houston stakeholder working groups, and the statewide Advance Task Force. Staff also coordinated the activities of the Regional Air Quality Planning Committee (RAQPAC) and Transportation Air Quality Subcommittee. Staff participated with other MPOs on Statewide policy conference calls, such as the Idling Working Group Conference Calls.

- Provided staff support to H-GAC advisory committees and subcommittees such as the Regional Air Quality Planning Advisory Committee (RAQPAC). Researched air quality

issues and make recommendations regarding air quality issues to committee members and advised on project selection for the State Implementation Plan (SIP) to the H-GAC Board of Directors and the Transportation Policy Council.

Task progress: Staff continued to support the work of RAQPAC. Staff coordinated monthly Executive Committee meetings and facilitated eight (8) monthly meetings of the overall RAQPAC Committee on the last Thursday of each month. Meeting materials are available online on the Committee's web page:

<http://www.hgac.com/agendas/raqpac/default.aspx>. In 2019, staff worked with RAQPAC to develop and submit an updated PM_{2.5} Path Forward Report to support the region's participation in the EPA PM Advance program. Additionally, staff worked to inform RAQPAC members about issues pertinent to local air quality, such as: air quality standard progress and status, information relating to the reclassification the region to Serious under the 2008 ozone standard, the implementation of the 2015 revised ozone standard, and the status of the TCEQ TERP program among others. Staff also supported meetings of the TAQ subcommittee are held at least on a quarterly basis. In FY 2019, the TAQ subcommittee met three (3) times. Committee meetings included briefings on the status of air quality and ozone standards within the region, efforts by H-GAC to promote transit pilot projects and better understand the nature of freight related emissions, air quality conformity, and transportation electrification efforts within the region.

- Revised, printed, and distributed the Annual Air Quality Initiatives Report.

Task progress: Staff completed and published the 2018 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.

Task progress: Staff conducted initial research related to this task. Completion has been postponed until FY 2020.

- Completed annual update of PM_{2.5} Advance Path Forward Plan. Developed potential control strategies for PM 2.5 emissions in response to the needs identified in the revised Plan utilizing potential strategies throughout the region.

Task progress: H-GAC staff, in conjunction with the Regional Air Quality Planning Advisory Committee (RAQPAC) developed a "Path Forward" update as part of the region's participation in the EPA PM Advance Program. This update was approved by

RAQPAC and submitted to EPA. This document listed and quantified voluntary PM reduction measures that are already being implemented by H-GAC and regional stakeholders. Additionally, the report outlined anticipated future projects that are expected to occur within the region.

- Provided staff training, public relations and/or sponsorship support for air quality technical workshops. Staff training included technical training on new EPA emissions models and federal air quality standards. Public outreach activities were conducted to educate stakeholders and the public on regional air quality issues.

Task progress: Multiple staff participated in the following training, webinars, presentations and air quality technical workshops 1) Presentations to the Technical Advisory Committee and Transportation Policy Council regarding air quality in the Houston region and H-GAC's improvement efforts. 2) Presentation to RAQPAC and the Transportation Air Quality Subcommittee regarding Transportation Conformity, transit pilot projects, the current air quality status of the region, the 2015 ozone standard, Volkswagen settlement opportunities as they arose, the PM Advance report, information about the TCEQ TERP Program, and ongoing updates regarding the progress of the 2019 Texas Legislature session, as well as other air quality improvement efforts.

- 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.

Task progress: Staff conducted initial research related to this task. Major completion has been postponed until FY 2020.

- Survey intercity tour, transit, and school buses for fleet and vehicle size, fuel usage, and age distributions to determine inventory share of emissions.

Task progress: Through the auspices of the Houston-Galveston Clean Cities Coalition, staff worked to create a regional fleet survey to collect information about fleet and vehicle usage throughout the region. This survey collected information on transit buses and included a special section which focused on collecting detailed information about the regional school bus fleet. This inventory is an ongoing project, as we have yet to establish connections with touring buses and further fleet information.

- A consultant was utilized for a study analyzing travel patterns, idling, and emissions of drayage trucks operating in and around the Port of Houston area.

Task progress: H-GAC completed the contracted study with the Texas A&M Transportation Institute (TTI) to develop an analysis and inventory of regional heavy-duty vehicles in the Houston region. This study of drayage and short haul trucks began in FY 2017 and the final report was submitted to H-GAC and accepted by the Transportation Policy Council in November 2018.

- 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.

Task progress: Staff conducted initial work related to this task. Completion has been postponed until FY 2020.

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.

PRODUCTS: Work performance and status

- Coordinated with the State and local governments to update thoroughfare plans. This includes a review of existing thoroughfare plans and associated policies

Task Progress: Staff were available to update thoroughfare plan through coordination with state and local governments.

- Developed a Regional Thoroughfare Plan that includes existing and future transportation corridors that have been identified in State, county, and city thoroughfare plans.

Task Progress: Staff made progress toward completion of a Regional Thoroughfare Plan that includes existing and future transportation corridors. Updates continue.

- A consultant was utilized to update the Brazoria County Thoroughfare Plan and associated policies.

Task Progress: A consultant was procured to update the Brazoria County Thoroughfare Plan and associated documents. The project kicked off in 2019. Scenario development was conducted after the first round of steering committee meetings.

- Conducted consultant contract management and oversight activities for active thoroughfare studies.

Task Progress: Staff coordinated with State and local governments on thoroughfare plans and information was collected. A Regional Thoroughfare map was prepared.

4.3b Freight

A major objective of the freight program will be to build a 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 public on freight related issues.

PRODUCTS: Work performance and status

- Supported State-level freight planning efforts.

Task progress: 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.

- Conducted research and provided updates to committees on freight legislation, policies, and ordinance, and best practices.

Task progress: This is an on-going process. Staff reserves an agenda item on the Greater Houston Freight Committee meetings for the transmission of updated Freight

legislation and policies. Staff also provided best practices to neighboring MPO's on the development of mobility plans.

- Monitored and Updated the Critical Urban Freight Corridors and worked with partners to identify deficiencies on the network and potential projects.

Task progress: 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.

- Created a freight database and develop a freight data portal to facilitate the exchange of information.

Task progress: 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.

- Developed and conducted a freight educational outreach effort, as recommended by the Regional Goods Movement Study, to engage shippers, intermodal interests, freight stakeholders and the public.

Task progress: Through 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 presentation and/or participation at meeting such as the Port Region Freight Transportation Meeting, the Houston-Beaumont Freight Rail Study meetings, Texas Freight Advisory Meeting, Texas Connected Freight Corridors Meeting, and the Gulf Coast Rail District.

- A consultant was utilized 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 (Surface Transportation Program (STP)).

Task progress: H-GAC staff secured HDR to conduct the Ports Area Mobility Study. The study is currently on-going and is expected to be completed in November 2019.

- Conducted consultant contract management and oversight activities for the Ports Area Mobility Study.

Track progress: H-GAC staff managed the contract for the Ports Area Mobility Study during FY2019.

- A consultant was utilized to update the 2012 Regional Goods Movement Study-a long-range plan for the goods movement system in the Houston-Galveston region (STP).

Task progress: H-GAC staff completed a draft scope of work for the update to the 2012 Regional Goods Movement Study. Project initiation pending receipt of funding.

- Conducted consultant contract management and oversight activities for update to 2012 Regional Goods Movement Study.

Task progress: Project initiation pending receipt of funding.

- 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.

Task progress: Staff submitted a draft scope of work for the Houston Region Freight Rail Study to TxDOT. H-GAC staff is serving on the TxDOT steering committee for the update to the Houston Region Freight Rail Study.

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.

PRODUCTS: Work performance and status

- A consultant was utilized to conduct the SH 146 Subregion Study, including the analysis of current and future transportation infrastructure and land use in Eastern Harris County and Western portions of Chambers County to include the Cities of Baytown and Mont Belvieu.

Task progress: SH 146 Sub regional Plan was completed in March 2018 and all required deliverables were received.

- A consultant was utilized to conduct subregion analysis of current and future transportation infrastructure and land use in Waller County.

Task progress: All project deliverables have been received. The Plan complete is pending approval of the Waller County Commissioners Court.

- A consultant was utilized to conduct sub regional mobility study for Southeast Houston of current and future transportation infrastructure and land use.

Task progress: The Southeast Houston Mobility Plan was completed in May 2019. All project deliverables have been received.

- Conducted consultant contract management and oversight activities for active sub regional studies.

Task progress: Staff supported the contract management activities for the sub-regional studies as needed.

- Conducted mobility and access management studies to assist local governments to mitigate congestion and improve safety.

Task progress: Staff supported the contract management activities for the mobility studies as needed.

4.3d Transit 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.

PRODUCTS: Work performance and status

- Provided 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.
- Coordinated 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).

Task progress: 1) The Statewide RCTP Metrics Report was Submitted to the TxDOT Public Transportation Division in April 2019. Milestone Progress Reports were submitted quarterly that indicated progress towards completion of the Scope of Work as required in the Gulf Coast RCTP Project Grant Agreement (PGA). A new PGA was executed for FY 2020 with funding of \$25,000 and the period of performance to August 31, 2020. 2) Staff participated in collaborative meetings with local stakeholders including but not limited to the following: METRO-Regional Seamless Fare System, United Way Workforce Development, 3) Quarterly Regional Transit Coordination Subcommittee (RTCS) meetings, 4) Continued development of RCTP projects to expand regional transportation options or sustain transit services in underserved areas.

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.

- 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.

Task Progress: Staff and regional stakeholders continued to advance RCTP priorities including but not limited to the following: Regional Transit Trip Planner using the Google Transit Platform, Regional Transit Seamless Fare project, Regional Interactive Database aka One Call/One Click Transportation Resource Center.

- 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).

Task Progress: In response to needs identified in the RCTP, related to improving intercounty travel, Harris County Transit established agreements with neighboring counties to expand the transportation options available in Montgomery County and Galveston County. Staff met with potential private sector partners to discuss the Gulf Coast Community Van Project Proposal which could be designed to mitigate some of the gaps in the transportation

system, in coordination with local nonprofit organizations.

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.

- Developed 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.

Task Progress: The High Capacity Transit Task Force Priority Network, which includes concepts and recommendations put forth in the Regional Transit Framework Study, was adopted by the Transportation Policy Council in June 2019 as the transit component of the 2045 RTP.

- A consultant was utilized for planning support to assist with the coordination of strategies (with local stakeholders) to mitigate regional transit gaps (TPF). Activity may include counties adjacent to MPO region, but not beyond 13-county H-GAC region.

Task Progress: A study to evaluate potential intercity and regional bus services connecting surrounding communities to each other as well as the region's core is included as an item in the current UPWP.

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.

- Continued 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.

Task Progress: In coordination with C&E, staff defined what TOD is for the

region, why TOD is important for the region, collected demographic, transit, and active transportation, and housing data for three TOD station areas on the University corridor, (Edloe/Greenway, Gulfton/Westpark and East End) stations. Staff incorporated finding into a white paper.

- 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 (TPF).

Task Progress: Staff has been working with the C&E Department and compiled a list of Livable Center TOD recommendations, reached out to transit agencies, the City of Houston and the City of Galveston to assess interest in conducting TOD planning for their communities.

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

Task Progress: Request for Proposals (RFP) and Qualification is prepared by staff to develop sustainable TOD strategies for transit developments around high capacity transit corridors identified in the 2045 RTP. The draft RFP is submitted to management for their review.

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

- Continued to work with local governments and other transportation agencies to improve the accuracy of existing pedestrian and bicycle mapping tools.

Task progress: Staff have continued to work with local governments to improve the accuracy of existing pedestrian and bicycle mapping tools, including the development of an online form to submit additions or removals of facilities to H-GAC's regional bikeway layer.

- A consultant was utilized to work with local governments, transportation agencies, research organizations, improvement districts, and non-profits to collect data on the

number of pedestrians and bicyclists using transportation facilities. The information was used to coordinate regular pedestrian and bicycle counts and surveys at locations throughout the TMA. Maintained existing pedestrian/bicycle counters and purchase additional devices as needed. The data from the count efforts was used to determine existing facility usage; calculate travel demand and air quality benefits associated with investments in pedestrian/bicyclist infrastructure; and document trends of facility usage over time (TPF).

Task Progress: Staff collected bicycle and pedestrian counts at the following locations: Alvin, Westchase Management District, Spring Branch Management District (Emnora Trail), International Management District, and Willow Fork Drainage District. Staff also developed a counter program proposal to expand the program, which includes several counter purchase options, example agreement forms for equipment usage, and online counter request form.

4.3e.2. Bicycle/Pedestrian Planning

- Maintained an up-to-date Regional Bikeway Plan that identifies existing and planned bicycle facilities, system gaps, and future facility needs.

Task progress: Staff coordinated with local municipalities and stakeholders to request updates on local bicycle facilities. An online form was developed for agencies to submit additions or removals from the regional bikeway GIS layer.

- A consultant will be utilized to collect GIS data on existing pedestrian facilities for utilization in a GIS layer on existing regional transportation maps (TPF).

Task progress: A regional sidewalk layer was developed and finalized in FY2019.

- Conduct consultant contract management and oversight activities for pedestrian facility GIS layer project.

Task progress: Staff conducted contract management and oversight activities for pedestrian facility GIS layer project. The project is complete, and the contract is now closed.

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

Task progress: Staff continued to provide technical assistance to local governments and other transportation agencies.

- Conduct Special Districts studies to plan for bicycle/pedestrian improvements

- A consultant was utilized to conduct Special Districts study in Spring Branch area of Houston to identify specific infrastructure improvements that can improve pedestrian and bicyclist mobility within the Spring Branch district (TPF/Local).

Task Progress: A consultant was utilized to conduct the Spring Branch Management District Special Districts Study. Significant progress has been made toward completion of this task with anticipated finalization by December 2019.

- A consultant was utilized to conduct two Special Districts studies to identify specific infrastructure improvements that can improve pedestrian and bicyclist mobility (TPF/Local).

Task progress: Anticipated to be complete in 2020-2021. Conducted consultant contract management and oversight activities for active Special District Studies

Task Progress: Staff conducted contract management and oversight activities for the Special District Studies.

- Conducted a bicycle and pedestrian multimodal performance measure pilot program in partnership with partnering local governments to test new tools assessing the connectivity of bicycle and pedestrian infrastructure within communities.

Task Progress: Staff has developed a project budget and scope and has coordinated and interlocal agreement with local match partner. Project initiation pending receipt of signed interlocal agreement from local match partner to receive in-kind match.

- Supplemental funding was utilized for Testing Bicycle and Pedestrian multimodal network connectivity pilot project.

Task Progress: Local Match will be provided by project partner as in-kind contribution.

- Developed and shared resources local governments and other transportation agencies can utilize to learn about “best practices” based on implementation case studies. Resources included innovative bicycle/pedestrian policies, programs, and practices related to design and maintenance for pedestrian and bicyclist facilities; improving connectivity; project management; cost estimation; and/or pedestrian-bicyclist safety.

Task Progress: Staff provided resources for best practices in innovative bicycle/pedestrian policies and programs related to design and maintenance for

pedestrian and bicyclist facilities to regional stakeholders and interested parties through direct data and information requests and presentations at various meetings, such as the Pedestrian-Bicyclist Subcommittee meetings.

4.3e.3. Bicycle/Pedestrian Outreach

- Conduct or host topical pedestrian/bicycle training workshops for local government agencies, organizations, and interested groups.

Task Progress: Staff are implementing a Bicycle Safety Trainer program to host pedestrian and bicycle training workshops in all eight MPO counties, including ten bicycle safety and skills trainings and five motorist and bicycle safety mini trainings. These trainings include personal safety, bicyclist law review, techniques for safe biking, proper navigation in rights-of-way with other users, and routine bicycle maintenance.

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 H-GAC Transportation Management Area (TMA).

PRODUCTS: Work performance and status

- Assisted 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.

Task progress: Staff provided potential project sponsors with email updates regarding the TIP process. Staff assisted in TxDOT separate call for TxDOT TASA and Safe Routes projects assisting with promotion of call through H-GAC Goldmine database, distribution of notification through local partners and Livable Center presentation of on-line tools for application use as developed by the program.

- Refined criteria and conducted livable center project evaluation for next TIP funding round and other potential funding programs.

Task progress: Limited activity to date as the TIP selection criteria is under development during the fiscal year. Completed the Livable Centers form for the Regional Planning summit. Served on Pedestrian-Bicycle Policy Workgroup and draft recommendations developed for the TAC Project Prioritization and Development Workgroup. Meeting dates July 6, 2019, July 16, 2019, August 21, 2019. Final recommendations were presented to the larger committee on September 4, 2019.

- Provided technical assistance with land use/transportation related RTP elements, preparation of 2045 RTP, Sub regional Planning program and public outreach efforts.

Task progress: Staff presented on Livable Centers to the Ped/Bike Subcommittee. Assisted Commute Solutions at public outreach event at Metro on August 13, 2018. Assisted with Bike Month kick off in 2018 and 2019. Reviewed and consulted on Las Vegas livable center program, scored pilot program proposals. Provided Building Better Block non-profit organization with feedback on new tools that promote livable centers concepts. Staff active representative of Transportation Safety Committee. As the H-GAC representative on the Technical Advisory Committee and Pedestrian-Bicyclist Subcommittee provided input on planning 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.

Task progress: Staff presented to City of Houston City-wide Super Neighborhood Forum, City of Houston East End Super Neighborhood and North Houston Association.

Staff served on the City of Houston Southeast Houston Mobility Plan Steering Committee – provided technical assistance on Livable Centers principles.

Provided technical assistance and facilitation for 1093 Rails-to-Trails collaboration: found resources and collaborated to convert the abandoned 1093 rail ROW into a regional trail connector (potentially from Fulshear to Eagle Lake).

Presented on Livable Center principles to Belfort Station meeting with Hobby Management District.

Future of Retail: Your Community Destination Workshop was held on September 29, 2018 with 55 participants.

Live, Work and Play: Facilitating Housing for Livable Centers Workshop was held September 20, 2019 with 58 participants.

Presented at TexITE Houston Chapter Luncheon January 9, 2019 in promotion of 10 Year Report and preliminary report findings. Presented findings at TexITE Texas Spring Meeting April 17, 2019 in San Antonio, Texas.

Presented to Long Point Pilot Project Mobility Workshop Presented Livable Center principles to University of Houston UH design review class. Gave presentation on International Management District Livable Centers study at University of Houston College of Architecture.

- 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. Developed criteria defining what constitutes transit-oriented development in the Greater Houston region and track transit-oriented development (existing and proposed).

Task progress: Staff updated the map of Livable Centers study areas throughout FY 2019. Webpage developed for the trail-oriented development work. <http://www.h-gac.com/trail-oriented-development/default.aspx>. Working definition of trail-oriented development defined in partnership with Transportation Department, City of Houston Planning Department, City of Houston Housing Department and METRO. Criteria in development with Transportation.

- 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. Developed mechanism to receive on- going updates from project sponsors as projects are implemented.

Task progress: The Livable Centers Implementation Report, was originally completed in May 2016 and updated in 2017. Livable Centers 10 Year Evaluation Report and Report Cards is complete and 28 completed Livable Centers studies. Findings including economic impacts were presented to the Transportation Advisory County, Transportation Policy Council and Board of Directors in the Spring of 2019. Report gained national recognition and Program was presented in the Fall of 2019. , <http://www.h-gac.com/livable-centers/implementation.aspx>

- 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.

Task progress: During FY 2018-19, staff began the process of documenting the challenges faced by project sponsors by conducting interviews. 28 interviews were conducted. Staff also developed a survey to assist in project implementation and data capture. For future project updates, staff developed a Program Tracker as part of all

future study project deliverables to better identify project recommendations and track project implementation.

- 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.

Task progress: Staff has completed the *Trail-Oriented Development Implementation Case Study* workbook. A report highlighting the best practices for trail-oriented development in the Gulf Coast Region was completed. The report includes strategies, tools, case studies, and hypothetical renderings for local governments, developers and private property owners. Strategies discussed include low, moderate, and high-investment techniques. A webpage has been developed for the trail-oriented development work. <http://www.h-gac.com/trail-oriented-development/default.aspx>.

- Identified new sources of funding to help support Livable Centers planning in diverse communities throughout the TMA.

Task progress: Staff reviewed new funding opportunities relating to placemaking, way finding, and related livable center planning activities to provide information to potential interested entities regarding these funding programs. Sent AARP Community Challenge grant notice to Livable Center studies alumni. Sent Texas Target Communities grant to 20 eligible rural communities. Applied for NSF grant funding in partnership with University of Houston and HARC. Developed plan for Multimodal Connectivity grant with Transportation Department. Sent National Endowment for the Arts (NEA) Our Town Grant. Sent Department of Agriculture Rural Housing Preservation Grant. Sent and assisted in coordination of TxDOT TASA and Safe Routes to school grant.

- 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.

Task progress: H-GAC held a workshop on November 9, 2018 with approximately 70 attendees with the purpose to hold a discussion with local cities and counties, especially unincorporated areas, experiencing growth and development. This workshop focused on common issues, challenges, and potential land use management solutions.

Staff held a *Live, Work and Play: Facilitating Housing for Livable Centers Workshop*. Housing recommendations from past Livable Centers studies were evaluated and summarized into the **Facilitating Housing Toolbox** for ease of review and cross collaboration between past study partners and the region. Provided tools are being deployed daily, and this toolbox serves as a template to be matured as additional

scenarios are identified through the Livable Centers Program. Housing tools identified through associated studies include: Enhance Local Policies, Increased Capacity, and Incentivize Housing Investment. <http://www.h-gac.com/livable-centers/facilitating-housing-toolbox/default.aspx>

- 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 (STP/Local).

Task progress: Completed 5 livable center studies for the City of Houston (Spring Branch Management District and Westchase Management District, City of Fulshear, City of Mont Belvieu and the International Management District). Two studies are underway (North Houston and City of Pasadena). One is in final phases of procurement (Eastwood).

- 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.

Task progress: A call for Study Partners was issued in October 2019. Application will be managed in two phases with a Notice of Intent due in December of 2019 and all final applications due January 2020.

4.5a Performance Measures and Targets

PRODUCTS: Work performance and status

At the end of the previous fiscal year, H-GAC collaborated with TxDOT, TTI and TEMPO on the establishment of federal Pavement and Bridge (PM2) and System Reliability (PM3) performance targets for continuity and consistency. In October 2018, H-GAC staff finalized and presented the Pavement and Bridge (PM2) and the Reliability and Congestion (PM3) 2020 and 2022 regional targets to the Technical Advisory Committee and Transportation Policy Council. The regional targets in these performance areas were approved by the Transportation Policy Council on October 26, 2018.

For the 2045 Regional Transportation Plan update, adopted in May 2019, staff made significant revisions to Appendix P: FAST Act Compliance and the Performance Measures System Evaluation Report. H-GAC staff incorporated the performance-based planning process, the regional targets and a discussion of the effects of the programmed investments toward achieving

the performance targets. Also documented in the 2045 RTP is an illustration (crosswalk) of the linkage between the RTP Investment Type, the RTP Investment Strategies and the RTP Investment Categories. Staff also For FY 2019 Quarterly STIP revisions to the 2019–2022 Transportation Improvement Program, staff updated Appendix B: FAST Act Compliance and the Performance Measures System Evaluation Report which included a description of the anticipated effect of TIP investments toward achieving performance targets.

4.5b 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 targeted levels of performance and mitigation strategies.

- Produced annual report on the state of congestion within the H-GAC planning areas.
- Revised CMP monitoring network to reflect roadway classification changes and new roadway development as needed.
- Continued 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.
- Prepared a regional congestion management plan, including goals to reduce vehicle miles of travel during peak commuting periods and improvements to job accessibility.
- Prepared corridor-based congestion management analysis to evaluate the applicability of regional mitigation strategies and identify key congestion hotspots.
- A consultant was utilized to review congestion management analysis prepared by sponsors for other roadway capacity projects (TPF).

Task Progress: Staff worked on the state of congestion report and it will be completed in the next year. The CMP monitoring network was updated to reflect classification changes and new roadways. Staff coordinated with TTI on the estimation of the effectiveness on TDM Strategies. Staff continued to work on the Congestion Management Plan. As part of the analysis conducted for the High Capacity Transit Taskforce, staff conducted analysis

related to travel demand and high congestion corridors. Staff reviewed CMP applications for the added capacity projects as needed.

TASK IV – FUNDING SUMMARY

Task IV - Long-Range Planning				
Responsible Agency	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
FHWA-FTA TPF	\$2,976,403	\$2,806,087	\$170,316	94%
STP - Cat 7	\$3,962,766	\$1,812,338	\$2,150,428	46%
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$25,000	\$0	\$25,000	0%
HRD	\$100,000	\$0	\$100,000	0%
Other Local	\$803,192	\$0	\$803,192	0%
Subtotal	\$7,867,361	\$4,618,425	\$3,248,936	59%

TASK V

SPECIAL PLANNING STUDIES

The special studies of Task V include special one-time planning activities, major corridor studies/analyses, and support of tourism and transportation resiliency planning and activities.

SUBTASK 5.1 Special Studies

This task includes special corridor studies, planning, and environmental linkages, and other analysis specific to transportation issues of regional significance, beyond the scope of previous tasks.

PRODUCTS: Work performed and status

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

- Staff were available to support TxDOT's study to assess access for commuter and highspeed 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.

Task progress: 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. 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 called the Southeast Harris County Sub-Regional Study. A scope of work was finalized, and consultant selection was completed. Staff started researching resources related to tourism industry from the work conducted by H-GAC on the Comprehensive Economic Development Strategy. On the Resilience and Durability to Extreme Weather study, staff conducted the initial project kick-off meetings with internal and external stakeholder groups, mapped vulnerabilities and resiliency recommendations, and conducted criticality assessments for the region and several counties.

TASK V – FUNDING SUMMARY

Task V - Special Planning Studies				
Responsible Agency	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
FHWA-FTA TPF	\$74,175	\$54,504	\$19,671	73%
STP - Cat 7	\$2,000,000	\$0	\$2,000,000	0%
FHWA-STRDD	\$255,000	\$0	\$255,000	0%
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
STRDD	\$240,000	\$66,018	\$173,982	28%
Other Local	\$0	\$0	\$0	
Subtotal	\$2,569,175	\$120,522	\$2,448,653	5%

TASK SUMMARY TABLE-	Amount Program	Expended (2019)	Balance of Programmed	% Expended of Programmed
Task I - Program Management				
FHWA-FTA TPF	\$3,443,172	\$2,894,496	\$548,676	84%
STP - Cat 7	\$0	\$0	\$0	
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
Other Local	\$0	\$0	\$0	
Subtotal	\$3,443,172	\$2,894,496	\$548,676	84%
Task II - Data Development and Maintenance				
FHWA-FTA TPF	\$3,911,744	\$3,550,349	\$361,395	91%
STP - Cat 7	\$0	\$0	\$0	
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
Other Local	\$0	\$0	\$0	
Subtotal	\$3,911,744	\$3,550,349	\$361,395	91%
Task III - Short-Range Planning				
FHWA-FTA TPF	\$1,314,832	\$706,542	\$608,290	54%
STP - Cat 7	\$1,733,000	\$502,961	\$1,230,039	
TxDOT State Funds	\$9,900	\$0	\$9,900	
FTA 5304/5307/5309/5339	\$2,231,050	\$50,000	\$2,181,050	
Other Local	\$0	\$0	\$0	
Subtotal	\$5,288,782	\$1,259,502	\$4,029,280	24%
Task IV - Long-Range Planning				
FHWA-FTA TPF	\$2,976,403	\$2,806,087	\$170,316	94%
STP - Cat 7	\$3,962,766	\$1,812,338	\$2,150,428	
TxDOT State Funds	\$0	\$0	\$0	
FTA 5304/5307/5309/5339	\$25,000	\$0	\$25,000	
HRD	\$100,000	\$0	\$100,000	
Other Local	\$803,192	\$0	\$803,192	
Subtotal	\$7,867,361	\$4,618,425	\$3,248,936	59%
Task V - Special Planning Studies				
FHWA-FTA TPF	\$74,175	\$54,504	\$19,671	73%
STP - Cat 7	\$2,000,000	\$0	\$2,000,000	
FHWA-STRDD	\$255,000	\$0	\$255,000	
FTA 5304/5307/5309/5339	\$0	\$0	\$0	
STRDD	\$240,000	\$66,018	\$173,982	
Other Local	\$0	\$0	\$0	
Subtotal	\$2,569,175	\$120,522	\$2,448,653	5%
TOTAL	\$23,080,234	\$12,443,294	\$10,636,940	54%

TPF Funding Summary FY2019				
	Amount Programmed	Amount Expended	Balance of Programmed	% Expended of Programmed
Task I - Program Management				
TPF	\$3,443,172	\$2,894,496	\$548,676	84%
Task II - Data Development and Maintenance				
TPF	\$3,911,744	\$3,550,349	\$361,395	91%
Task III - Short-Range Planning				
TPF	\$1,314,832	\$706,542	\$608,290	54%
Task IV - Long-Range Planning				
TPF	\$2,976,403	\$2,806,087	\$170,316	94%
Task V - Special Planning Studies				
TPF	\$74,175	\$54,504	\$19,671	73%
TOTAL	11,720,326	10,011,978	1,708,348	85%

As seen in the tables above, some expenditure percentages are low, this is due to the fact that this is a two-year plan. The intent is to expend all funds with some of those funds being used in FY2021.