

# Corpus Christi MPO Annual Performance and Expenditure Report (APER) FY 2022

# TASK 1 – ADMINISTRATION AND MANAGEMENT

Task 1 Included an overall description of the Corpus Christi MPO's administration and coordination efforts. Included were all subtasks listed in the FY 2021 - FY 2022 Unified Planning Work Program (UPWP) with a description of each subtask product received or work accomplished and the agency responsible. If work under a subtask was completed by a consultant or subcontractor, this is indicated. If an "amount expended" exceeded or is below the "amount budgeted" by 25% or more, this was noted in the task funding table and an explanation was provided for the variance.

Some of the funding for subtasks were underspent as expected and will be rolled over into the FY 2023 UPWP as multi-year tasks.

#### TASK 1 – OVERALL DESCRIPTION: ADMINISTRATION AND OUTREACH

Task 1.0 is managing and administering the federal transportation planning requirements in and for the Corpus Christi Metropolitan Planning Organization. Included in this task are the direct expenses associated with the planning effort and products to be delivered within the UPWP. An additional \$2.0 million of STBG (CAT 7) funds were allocated to this subtask with the Revised FY 2021 – FY 2022 UPWP with Amendment 1 approved by the Transportation Policy Committee on May 12, 2022. After that approval, TxDOT determined that the \$2.0 million of 100% STBG federal funds would need to be allocated through a Non-Construction Advanced Funding Agreement (NCAFA). Until the NCAFA is executed in FY 2023, the \$2.0 million of funding will roll over into the following fiscal years of the UPWPs.

**OBJECTIVE** – Coordinate the transportation planning activities of the Corpus Christi MPO with TxDOT, FHWA, and interested public agencies as part of the metropolitan transportation planning process. Maintain records of all activities needed for the comprehensive, coordinated, and continuing (3C) transportation planning process. Take actions to enhance the technical capacity of the planning process and insure a proactive public involvement process that provides full public access to key decisions in developing both short- and long-range plans and programs.

**METHODOLOGY** – Work elements in this activity are administrative and management tasks associated with the function, coordination, and day-to-day activities of the Corpus Christi MPO. The development of department goals and policies; committee structures and staffing; interagency coordination and communication; and staffing of various transportation planning related efforts. Required duties included communicating with the public and committee members regarding meetings, preparation of meeting packets, attendance at meetings, coordination of projects/programs, and oversight of planning activities. Additionally, this task will meet the technical objectives of the organization regarding computer equipment and/or software packages. Direct expenses are listed in subtask 1.9. The additional local funds through the Corpus Christi MPO's Strategic Reserve Fund pays for possible special projects and for individual professional membership dues for the Corpus Christi MPO staff members.

# **SUBTASK 1.1 – PROGRAM COORDINATION AND DIRECTION**

This subtask is the administration of the Corpus Christi MPO program. Corpus Christi MPO staff prepared and submitted required reports, certification, and administrative documentation to maintain continuity and credibility of the Corpus Christi MPO. Staff also prepared requests for proposals, as required, and solicit for contractual services. We also were ready to assist participating and collaborating agencies as needed.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following: Facilitation of the metropolitan transportation planning process for FY 2022, including compliance with all federal and state regulations, requirements, and certifications. These key processes involved the advance groundwork for the development of the 2050

Metropolitan Transportation Plan (MTP), FY 2023-2026 Transportation Improvement Program (TIP), and FY 2023 and FY 2024 Unified Planning Work Program (UPWP), also the amendments of FY 2021- FY 2022 UPWP and FY 2021-2024 TIP amendments.

- Maintained current planning agreements and executed annual contracts and amendments for planning funds
- Coordinated and consulted with Federal and State agencies on the development and implementation of all plans and programs
- Participated in local transportation-related planning studies, activities, meetings, and workgroups
- Monitored best practices for transportation planning by attending workshops, conferences, seminars, and webinars held by FHWA, TxDOT, Texas Transportation Institute (TTI), etc.
- Participated in industry associations such as Association of Metropolitan Planning Organizations (AMPO),
  Texas Association of MPOs (TEMPO), American Planning Association (APA), National Academies of Science
  Transportation Research Board (TRB), Institute of Transportation Engineers (ITE), American Society of Civil
  Engineers
- Conducted personnel evaluations, job description reviews, and a salary survey
- Administered monthly technical and policy meetings, Regional Traffic Safety Task Force meetings
- Monitored laws and ordinances (Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law) and addressed new requirements and emphasis areas

# SUBTASK 1.2 - UNIFIED PLANNING WORK PROGRAM (UPWP) DEVELOPMENT

In this subtask, Corpus Christi MPO staff revised the FY 2022 UPWP to reflect the changes to subtasks based on the regional priorities and funding levels. Corpus Christi MPO staff developed FY 2023 and FY 2024 UPWP based on the FY 2021- FY 2022 UPWP activities and its status as well as new requirements under IIJA/BIL, Executive Orders, and FHWA/FTA guidance on the Planning Emphasis Area. Reviewed and verified the Annual Project Listing (APL) in FY 2022 for the transportation projects that used federal funds in the fiscal year 2022. Prepared and submitted FY 2021 Annual Performance and Expenditure Report (APER) and prepared the draft sections of the FY 2022 APER for future submission to TxDOT.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Amended the FY 2022 UPWP to reflect changes in funding and planning priorities within the Corpus Christi
  MPO area. These were based on financial data availability for the Corpus Christi MPO's planning tasks as
  well as part of the analysis of monthly expenditures above or below expenditure estimates, but within the
  25% limits for UPWP Tasks, except for Task 4.0.
- Developed a compliant FY 2023 and FY 2024 UPWP that delivered transportation planning tasks.
- Coordinated with local agencies to consolidate transportation planning related efforts and activities that will be conducted during FY 2023 and FY 2024.
- Prepared and submitted the Annual Performance and Expenditure Report (APER) for the FY 2021 UPWP.
- Prepared draft sections of the APER for FY 2022.
- Reviewed and verified the FY 2021 Annual Project Listing (APL).

#### SUBTASK 1.3 – MONTHLY BILLING AND FINANCIAL MANAGEMENT

Prepared budgets maintained financial records, equipment inventory, and ensured monies were spent appropriately. Processed timesheets, billings and invoicing, budgeting, and management of transportation planning funds; the cost of operating the Corpus Christi MPO, office lease, furniture, equipment lease/rental. An Annual Performance and Expenditure Report (APER) was prepared at the end of the fiscal year (FY 2021) in accordance with TxDOT policy and procedures for tasks that utilized FHWA and Federal Transportation Administration (FTA) planning funds. The Corpus Christi MPO sought state recommendation/federal approval for any expenditure exceeding \$25,000.

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Prepared and monitored annual operating budgets.
- Submitted monthly billings to TxDOT for reimbursement.
- Performed general administrative functions such as purchasing, account payable, account receivable, filing, etc.
- Monitored UPWP task hours and submit the timesheets.
- Monitored and managed the Strategic Reserve Fund.
- Prepared and submitted the FY 2021 Single Audit Statement to TxDOT.

#### SUBTASK 1.4 – STAFF TRAINING AND EDUCATION

Subtask 1.4 is the Corpus Christi MPO staff professional development and training program. Transportation planning funds allow staff members of the MPO to travel and attend transportation planning and professional development conferences, workshops, and training. The Corpus Christi MPO staff organized training sessions for the Transportation Policy Committee, the Technical Advisory Committee, and any subcommittee members, and for local governments and participating agencies. For out of state travel, the Corpus Christi MPO sought prior TxDOT approval as appropriate. MPO staff attended training provided by, but not limited, to the following associations:

The Corpus Christi MPO staff reviewed agendas and subject matter for possible participation in in-person or virtual events and training of the following groups:

- American Association of State Highway and Transportation Officials (AASHTO)
- American Society of Civil Engineers (ASCE)
- American Planning Association (APA)
- American Public Transportation Association (APTA)
- Association of Metropolitan Planning Organization (AMPO)
- Environmental Systems Research Institute (ESRI)
- Institute of Transportation Engineers (ITE)
- National Aging and Disability Training Center (NADTC)
- National Highway Institute (NHI)
- National Transit Institute (NTI)
- National Transit Institute (NTI)
- Texas Association of MPOs (TEMPO)
- Texas Department of Transportation (TxDOT)
- Texas Transportation Institute (TTI)
- Transportation Research Board (TRB)
- Texas General Land Office (TXGLO)

#### **Work Performed and Status**

Corpus Christi MPO staff performed, participated in, and completed the following:

- Corpus Christi MPO staff participated in-person and virtually for state and national conferences, seminars, training workshops, workgroups, and webinars through:
  - TxDOT (2022 Texas Transportation Forum, TxDOT Transportation Resilience Research webinar, 2022
     ADA Self Evaluation and Transition Plan webinar,
  - AMPO (2022 Planning Tools & Training Symposium)
  - TTI (95th Annual Transportation Short Course, 2022 TxDOT Transportation Planning Conference),
  - FHWA (Freight, Resiliency, Transportation Equity, Assessment of the Effectiveness of PBPP in Transportation Decision-Making for State DOTs and MPOs),
  - EPA (Incorporating Equity in Disaster Mitigation and Climate Adaptation Programs),

- TEMPO (Workshops and Meetings),
- American Planning Association (APA) (Navigating an efficient and equitable recovery),
- TRB (presented at the Annual Meeting, Advancing Transportation Equity, How accurate are Traffic Forecasts?),
- ITE (Prioritizing Safety with Transportation Equity),
- AASHTO (Environmental Justice Peer Exchange, Safe Streets for All),
- Volpe Center (Safety Data Initiative),
- AASHTO Center for Environmental Excellence (Peer exchange on Environmental Justice Analysis Strategies),
- o ENO Center (How Automated Delivery Could Shape the Future of Local Commerce),
- H-GAC Brown Bag Lunch Webinar (Real-time Traffic Data and Tools),
- United States Chamber of Commerce (Infrastructure Investments to Speed the recovery) and
- Software suppliers (ESRI, Caliper, PTV) (Multimodal modeling at Meso and Micro levels, Fundamentals
  of using TREDIS, Forecasting Traffic Impacts of Development, Geospatial Enabled Linear Referencing,
  Enterprise Data Enhancement) and software suppliers.
- American Association of State Highway Traffic Officials CES and Sustainability
- o Association of Metropolitan Planning Organizations
- ADA National Network
- Census Bureau
- Decision Lens
- Eno Center for Transportation (Eno)
- Environmental Protection Agency Environmental Justice Analyses
- Federal Emergency Management Agency Resilience Analysis and Planning
- Florida DOT Regional Planning Model
- INRIX Safer Roads Start with Better Data
- National Cooperative Highway Research Program 23-07 Lessons on Target Setting
- National Hurricane Center HURREVAC webinar training
- National Operations Center of Excellence (NOCoE) Tools to Improve Operational Planning
- Planet Texas 2050
- o PTV Talks Mesoscopic Simulation
- o RITIS User Group
- Smartgrowth.org Integrating Planning and Emergency Management
- Texas A&M University Transportation Resilience series
- Texas General Land Office Coastal Resiliency Planning
- o Texas Innovation Alliance
- Texas State Demography Office
- Texas Technology Task Force
- Thoughtspot
- TranSoft Solutions
- TTI Transportation Resilience part 1 and 2:
- Texas Pedestrian Safety Coalition
- o US Army Corps of Engineers HURREVAC User Group Training
- US Census Bureau
- US Department of Transportation Volpe Center- Preparing a Benefit Cost Analysis
- US Department of Transportation: Info Session on Transportation Equity: Webinar on Equity in Transportation
- University of Florida What Drivers Really Think about Autonomous Vehicles
- US Global Change Research Program
- University of Texas at Arlington
- Virginia Tech
- White House Environmental Justice Advisory Council

#### SUBTASK 1.5 – COMMUNITY PLANNING AND DEVELOPMENT ACTIVITIES

Subtask 1.5 is sponsoring and conducting meetings, including providing support to both the Transportation Policy Committee and the Technical Advisory Committee, attending mission-related meetings, along with bylaw/policy development and implementation. It is also coordinating and working with other agencies in Texas involved in planning and programming transportation projects, especially participation on partner agency committees and in transportation-related community planning efforts.

The Corpus Christi MPO utilized a regional approach to transportation planning by coordinating planning efforts and cooperating on information gathering and project implementation across multiple agencies – continuing and building upon previous working relationships and coordinating among: Local member government land use and development agencies; economic development agencies, the regional transit agency (CCRTA), environmental resource agencies, community and social agencies, the Texas Department of Transportation (TxDOT); the Federal Highway Administration (FHWA); and the Federal Transit Administration (FTA).

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Provided data, maps, reports, and guidance to the regional planning partners on various topics related to the Corpus Christi MPO activities, specifically the existing and proposed legislation and issues relevant to the regional transportation planning.
- Worked with San Patricio County and participating cities for the scoping of the San Patricio 21<sup>st</sup> Century Industrial Growth Plan as an administrator.
- Participated in Corpus Christi Uptown Corridors Revitalization Strategy Development.
- Worked extensively with the TxDOT- Corpus Christi District on efforts related to roadway projects in various stages of development as well as planning efforts to prioritize projects with various funding categories.
- Participated in member agency planning activities including the Port of Corpus Christi Long-range
   Planning, Harbor Bridge Project CAB, City of Corpus Christi Transportation Advisory Committee, CCRTA budget workshops, and Nueces County CIP plans.
- Joined the discussions with the City of Corpus Christi for their planning efforts for North Beach, Padre Island, Flour Bluff, Southside, and London Area Development Plans.
- Participated in several corridor studies, including Northwest Blvd., Staples Street, and Leopard Street.
- Other local discussions with planners for smaller developments and projects that may impact the regional planning.
- Participated in City of Corpus Christi Parks and Recreation Master Plan Update.
- Participating in 2023 General Land Office (GLO) Coastal Resiliency Master Plan Region 3 Restoration Project Development and Selection.
- Viewed Texas GLO Economic Development Strategy and Diversification Study.
- Supported and participated in the Coastal Bend Air Quality Partnership meetings.
- Participated in the monthly United Corpus Christi Chamber of Commerce Infrastructure Committee meetings.
- Helped develop the 2021-2026 regional Coastal Bend Economic Development Strategy (CEDS).

# SUBTASK 1.6 – COMPUTER MAINTENANCE AND WEBSITE MANAGEMENT

This subtask supports the efficient operation of the Corpus Christi MPO office computer equipment and software and updates the Corpus Christi MPO website. We acquired supplies, services, software, and equipment to support the Corpus Christi MPO operations. Equipment purchases over \$5,000 per unit (including the cost of any modifications, attachments, accessories, or auxiliary apparatus necessary to make it usable for the purpose for which it is acquired) require prior State and Federal approval.

The system administrator assures the working order of the LAN Network, all computers and supporting systems. Funding is allocated and/or service contracts are in operation for the maintenance and upgrade of all automated

information processing equipment and software purchased. Staff will continue updating Corpus Christi MPO equipment; audio/video equipment, server computers, computer hardware, and software, to include license maintenance of state of practice platforms like ESRI and Caliper. Staff also stayed abreast of current trends in technology. A description of computer hardware and software purchases in excess of \$5,000 were submitted to TxDOT for approval prior to acquisition. Maintenance of the LAN Network System required various annual licensing agreements for proprietary software, GIS server support, and web hosting expenses. Website information was updated as information became available. Agendas and committee packets were published to the website monthly.

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Updated the website for the Corpus Christi MPO to comply with HTML5 and CSS3 and conforms to the World Wide Web Consortium (W3C) guidelines: WCAG 2.0 (Website Content Accessibility Guidelines) and ATAG 2.0 (Authoring Tool Accessibility Guidelines). The World Wide Web Consortium is an international community that includes a full-time staff, industry experts, and several member organizations. These groups work together to develop standards for the World Wide Web. The MPO site was tested quarterly for accessibility compliance through online W3C validators. Additionally, the MPO continuously tests performance on various desktop and mobile devices using current popular Web browsers.
- A new network Wi-Fi router replaced an older Wi-Fi router resulted on a stable VoIP 8x8 phone system. Eliminating phantom calls and continuously ringing on staff phones.
- Pertaining to S.B. No. 1237, Section 1. Subchapter D, Chapter 472, Transportation Code, Section 472.036 –
  Internet and Broadcast and Archive of Open Meetings, the Corpus Christi MPO continued to broadcast
  over the internet live video of the Transportation Policy Committee's open meetings and made available
  on the Corpus Christi MPO website links to archive video with audio of each open meeting.
- The Corpus Christi MPO added an advanced Website Security subscription to insure reliability and security to our websites. Our websites reside behind a robust firewall, with 24/7 protection against server or network DDoS (distributed denial-of-service) attacks, malware scanning and removal, back-ups, and SSL (Secure Sockets Layer) Certificate allowing for HTTPS encryption. A "Padlock" icon lets visitors know that our websites are trustworthy and that any data they exchange is encrypted, keeping it safe from snooping or exploitation.
- Performed comprehensive evaluation and enhancements of the Corpus Christi MPO and Coastal Bend in Motion (the website for the Strategic Plan for Active Mobility) websites. The new sites offered individuals with vision impairments assistive technology (which can be obtained from a third-party source) that allows individuals with disabilities to enlarge type or have Web content read aloud for Windows and Mac OS users.
- Reviewed other MPO websites for best practices, developed plan for incorporating these into the website, especially in relation to the early planning for the upcoming 2050 MTP development processes.

We continued to evaluate the accessibility of MPO planning products as well as provide for the timely delivery of information about opportunities to engage in ongoing planning activities. The corpuschristi-mpo.org website sees over 1,500 visits per month and averages more than 800 downloads. The coastalbendinmotion.org website gets an average of over 500 visits per month.

#### **SUBTASK 1.7 – PUBLIC OUTREACH**

In FY 2022 the Corpus Christi MPO continued to address the typical difficulty to engage the public in transportation planning. Many community members are not familiar with technical terms and concepts or our processes. Good communication efforts are very different between the public, planners, and decision-makers.

Within a performance-based planning and programming process, the goal continues to be to provide objective information to decision-makers, the public, and other interested parties on relevant issues so that the target audiences can easily understand issues and trade-offs.

The Corpus Christi MPO used public outreach and communication to increase transparency and enhance the Corpus Christi MPO's credibility in the eyes of policymakers and the general public. This subtask supported the development and implementation of the Public Participation Plan (PPP) including the day-to-day responses to the public (via email and/or phone calls), monitored social media, and participated in community outreach and public meetings/hearings as needed with emphasis on Environmental Justice populations. The Corpus Christi MPO monitored, evaluated, and implemented Title VI Civil Rights/Environmental Justice compliance, guidance, and requirements for plans and programs; continued to collect and analyze data related to minority or low-income populations and the effect of the transportation programs and system on those populations; identified ways to mitigate impacts of the system and programs on the identified populations; expanded the database of citizens and businesses in low income or minority areas to facilitate effective outreach to those populations. General information about Corpus Christi MPO activities and events were posted publicly as part of the Public Participation Process and provided the opportunity for all stakeholders to provide comments.

Transportation Policy Committee and Technical Advisory Committee meetings were held monthly. Dates and agendas were posted to Corpus Christi MPO's website and Corpus Christi Regional Transportation Authority's physical Bulletin Board as one of the official Corpus Christi MPO posting locations and usually sent out via email to an interested parties list one week before the meeting. The Transportation Policy Committee and Technical Advisory Committee meetings were open to the public and had time allotted on the agenda for public comments.

The Public Participation Plan was designed to facilitate participation by a wide range of community members, especially at-risk and traditionally under-served groups including minorities, low-income populations, seniors, and individuals with disabilities. Implementation of the tactics outlined in the plan provided an array of opportunities for meaningful public involvement and ensured compliance with all applicable federal regulations. Outreach efforts were undertaken as necessary in support of transportation planning activities as they occur in FY 2022.

Engage diverse stakeholders by "going to them" and integrating all voices into the decision-making process: The Corpus Christi MPO identified events with other agencies and organizations as possible opportunities for outreach. The intent was to outreach at existing events and meetings, and to engage those audiences during the course of their regularly scheduled meetings and events.

**Engage Local Officials**: In FY 2022, the Corpus Christi MPO held sub-regional meetings for local elected officials and municipal staff with the purpose of informing them about the Corpus Christi MPO's role in the region and their communities' role within the Corpus Christi MPO and soliciting input on the region's transportation needs and long-range plan. Staff had ongoing one-on-one meetings with newly elected officials (Board of Directors of Corpus Christi Regional Transportation Authority) and provided opportunities for all elected officials to engage with Corpus Christi MPO decision-making.

**Engage vulnerable populations**: The public involvement processes used to develop the transportation plan and investment programs were based on "seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low income and minority households, who may face challenges accessing employment and other services." (USC 450.318)

**Understand residents' priorities through public opinion research**: Gathering qualitative and quantitative information on the public's priorities involved ranking different goals or outcomes to help support making tradeoffs and prioritizing investments. The Corpus Christi MPO solicited public opinion via an electronic survey. The Corpus Christi MPO continues to gather data on public opinion using thorough outreach efforts such as the update to the early activities for the next Metropolitan Transportation Plan (2050 MTP), as well as through general outreach such as online surveys.

Inform the public through collateral, e-dashboard, website, media, and social media: As the Corpus Christi MPO gathered increasing amounts of data and expanded our analysis capabilities, we worked to provide this wealth of

information to the public in an interactive way. Having readily accessible information about performance not only helps drive performance-based planning but can also strengthen outreach to stakeholders and other agencies. By enhancing the website, users can efficiently access Corpus Christi MPO materials, including meeting agendas, reports, and studies. Staff continued to engage with the media on the progress of the regional priorities and other transportation issues impacting transportation. The Corpus Christi MPO developed and maintained a data dashboard that provides members with transportation data specific to their municipalities and the region.

**Use Visualizations**: Visualizations helped translate data into more easily understood graphics and images and more effectively communicate information. Visualizations are highly useful in a performance-based planning process to communicate performance information, particularly for complex, spatially relevant transportation data. The intent of visualization in public engagement is to help the public understand the context, to add insight to problem solving and to communicate with the public. It was used to communicate performance measures, trends, and impacts of strategies to the transportation system. Visualization also can help communicate the complex nature of trade-offs between investing in various types of transportation projects and programs.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- Reviewed and amended the Corpus Christi MPO FY 2021-2024 Transportation Improvement Plan (TIP).
- Developed and adopted the Corpus Christi MPO FY 2023-2026 TIP.
- Periodically reviewed and updated when necessary, the Corpus Christi MPO 2021 Public Participation Plan (PPP) with more detailed strategies, methods, and procedures to involve the general public.
- Periodically reviewed and updated when necessary, the 2021 Corpus Christi MPO Program For Addressing
  Discrimination (PAD) including policies related to environmental justice (EJ) and Title VI of the Civil Right
  Act, Limited English Proficiency (LEP), and Achieving Racial Equity (ARE) that complies with federal
  guidance and provisions.
- Researched and analyzed the new requirements on Public Involvement by IIJA/BIL, Executive Orders,
   FHWA/FTA guidance and discuss how to implement these new requirements in transportation planning.
- Maintained and updated the Corpus Christi MPO's contact database to expedite outreach efforts.
- Published Public Notices in publications of regional circulation, as appropriate for public meetings related to the FY 2021 – 2024 TIP and FY 2021-FY 2022 UPWP amendments, Category 9 Call-for-Projects, FY 2023 and FY 2024 UPWP, and FY 2023 – 2026 TIP and project selection for Category 2 and Category 7.
- Delivered public presentations in various community forums about the MPO planning process and specific
  ongoing strategic planning initiatives, specifically the CCRTA Board and Committees, City of Portland, City
  of Corpus Christi, Nueces County, and San Patricio County. Additionally presented the Corpus Christi MPO
  activities to local business groups such as Chambers of Commerce and Economic Development
  Corporations.
- Conducted media interviews for the Corpus Christi MPO's role and responsibility for the regional transportation planning.
- Documentation of all public involvement activities and efforts was conducted in FY 2022.
- Public access—in person and via live broadcast—to meetings of the Corpus Christi MPO's TPC. During the pandemic we were more reliant on email, and written comments for documents and processes being developed by the Corpus Christi MPO through the TAC and TPC. Public access was always available with appropriate safety precautions of the host building owners.
- Webinars / Workgroups / Training
  - Webinar: U.S. Census Bureau Providing Local Communities with the Data They Need

#### **SUBTASK 1.8 – PROGRAM EVALUATION**

The Corpus Christi MPO reviewed and evaluated the work accomplished during the previous fiscal year (FY 2021) under this subtask. This effort provides analysis of lessons learned, best practices, and recommendations for

future planning, training, and process development. As improvement actions are identified and addressed, it is important that any relevant plans, policies, and procedures are updated accordingly.

The Corpus Christi MPO staff developed an After-Action Report to identify strengths of planning and programming processes that should be maintained and built upon, as well as identifying potential areas for improvement. This specifically included developing/reviewing processes used to develop the Transportation Improvement Program, Metropolitan Transportation Plan, and the Congestion Management Program. The effort included a focus on participation techniques and activities taken to comply with Title VI/EJ guidance and requirements, collecting and analyzing data related to minority, low income, limited English proficiency, and other populations vulnerable to potential disproportional adverse impacts from the planned transportation system and transportation projects. For each major step in the MTP and TIP processes answers to the following questions were sought:

- What did we want to accomplish?
- How did this change as the process progressed?
- What did the process accomplish?
- Why was there a difference between what we wanted to do and what we did?
- What went well and why?
- What could have gone better?
- What advice would you give yourself if you were to go back to where you were at the start of the project?
- What should we have learned from this project a year from now?
- How do we adapt our processes for a better outcome OR how do we repeat our successes?

Corpus Christi MPO staff performed and completed the following:

- Developed an After-Action Report
- Evaluated the Corpus Christi MPO processes in an effort to fairly distribute the benefits and burdens of transportation investments, eliminate participation barriers, and engage minority and low-income populations in transportation planning decisions.
- Continued implementation and refinement of performance metrics to inform project prioritization and assess the functionality of the regional mobility system overall.
- Webinars/Workgroups/Training
  - o Participated in the TxDOT 2022 Transportation Forum, TxDOT 2022 Transportation Planning Conference, 2022 AMPO Planning Tools & Training Symposium, and TTI 95<sup>th</sup> Annual Transportation Short Course.
  - o Participated in Texas General Land Office Technical Advisory Webinar about Meeting the Challenges of Climate Change
  - o Viewed the FHWA and FTA Assessment on the Effectiveness of Performance-Based Planning and Programming Confirmation

#### **SUBTASK 1.9 – DIRECT EXPENSES**

Direct Expenses were products and services directly related to the operation of the Corpus Christi MPO to deliver the UPWP tasks. Typically, these products and services are paid for directly through purchase orders and contracts, leases, and agreements. These generally included office rent, fiscal agent services, consultant contracts, external demographic and planning datasets and supporting information, communications costs for leases and equipment, office supplies and equipment purchases or leases, conference expenses, travel costs, paper, computer equipment, and IT system components and software and the associated maintenance fees.

Budget items for direct expenses are shown below and detailed in Appendix I.

**TASK 1 – FUNDING SUMMARY** 

Funding Source	Amount Budgeted	Amount Expended	Balance	% Expended
Transportation Planning Funds (PL 112 & FTA 5303)	\$655,000	\$451,942.13	\$203,057.87	69.0%
Local Planning Funds	\$50,000	\$0	\$50,000	0%
FTA (Sec. 5309)	\$0	\$0	\$0	0%
CMAQ	\$0	\$0	\$0	0%
STP MM	\$0	\$0	\$0	0%
TOTAL	\$705,000	\$451,942.13	\$253,057.87	64.11%

The MPO staffing levels were 5 of 6 FTEs from October 1, 2021 through September 30, 2022. We kept 1 FTE vacant so we could evaluate our particular needs for the position related to consultant assistance for the remainder of FY 2022.

In FY 2022, we did not have the need to augment the FHWA PL funds with local funds for special projects.

SUBTASK 1.9 BUDGETED EXPENDITURES						
	FY 2021 – FY 2022 Direct Expense Revenues by Sourc	e	FY 2021	FY 2022		
		Federal Funds	\$408,000	\$403,000		
		Other Funds	\$50,000	\$50,000		
	FY 2021 – FY 2022 Direct Expense Expenditures by Subt	ask	FY 2021	FY 2022		
Subtask		Direct Expense	Amount	Amount		
1.9 a	1.9 a Contract Services: Fiscal Agent, Office Rent, Traffic and Special Studies, Consultant assistance as needed			\$ 408,000		
1.9 b	Printing/Reproduction Services		\$3,500	\$3,500		
1.9 с	Education/Training/Conference		\$4,000	\$4,000		
1.9 d	1.9 d Travel Out-of-State			\$5,500		
1.9 e	Travel In-State		\$2,500	\$2,500		
1.9 f	Supplies		\$6,000	\$6,000		
1.9 g	Support Services		\$5,500	\$5,500		
1.9 h	1.9 h Memberships/Subscriptions/Publications			\$2,500		
1.9 i	1.9 i Maintenance - Software/Equipment			\$5,500		
1.9 j	1.9 j Capital - Furniture/Equipment			\$10,000		
1.9 k	Consultant Services		-	\$0		
		Direct Expenses	\$458,000	\$453,000		

# TASK 2 – DATA DEVELOPMENT AND ANALYSES

Task 2 included a description of the Corpus Christi MPO's data development and maintenance activities provided under this task. All subtasks listed in the UPWP included a description of each subtask product received, or work accomplished and agency responsible. If work under a subtask was completed by a consultant/subcontractor, this is indicated. If an "amount expended" has exceeded or is below the "amount budgeted" by 25% or more, this is noted in the task funding table and an explanation provided for the variance. Expenditures for FY 2022 were within budgetary limits. Funds remaining in a subtask were rolled over to FY 2023 along with their activities.

# **TASK 2 – OVERALL DESCRIPTION**

The Corpus Christi MPO intended to develop a systematic data collection or performance monitoring processes sufficient to meet the multitude of federal performance-based planning and programming requirements. The Corpus Christi MPO team updated information describing existing and forecast transportation conditions and other related social, economic, and ecological conditions to support analyses and compare performance against adopted goals and objectives. The data was needed to support future analyses at a level that allows comparison between individual investments and identification of tradeoffs within investments. There must be sufficient detail on investments to compare their relative effectiveness and identify tradeoffs between investments across the spectrum of goals.

**OBJECTIVE** – The Corpus Christi MPO collected data primarily using collaborative partnerships with member agencies, including local governments, TxDOT, CCRTA, and other partner agencies. When data must be directly acquired, the Corpus Christi MPO uses a 3-tier system to economize collection efforts: Corridors of Concern, Corridors of Note, and Areas of Interest. Gathering socio-economic data, traffic count data, travel speed data, accident surveillance and analysis, infrastructure condition data, and non-motorized and transit usage data provided the information upon which all other planning and programming activities drew. The metropolitan planning process involves extensive use of various forms of data including population, income, household size, employment, car ownership, street configuration, street capacity, traffic counts, bicycle counts, and land use. Collecting data on traffic conditions, roadway conditions, and system users were a vital component of efficient and effective performance-based processes. Data helps leaders make informed investment decisions regarding investments into roadway maintenance and expansion priorities and can even feed into other technologies to provide real-time feedback and help maximize operational performance. Data also kept travelers informed and safe. Examples of data used every day in transportation planning include cellular and Bluetooth data, which can record travel times, travel direction, and provide information about trip origin/destination. Inductive loop detection, video vehicle detection, and Bluetooth detection can provide accurate counts of vehicles and bicycles using a facility. These technologies also assisted with signal timing, alerting signals when users are approaching or at an intersection. More recently, communities have begun investing in fiber-optic networks to help connect the data driven components of the transportation network.

**METHODOLOGY** – The Corpus Christi MPO is committed to monitoring performance of the transportation system at both the regional scale and corridor scale and using our findings to inform and prioritize both capital investments and implementation of policies that impact transportation. This work task was needed to monitor area travel characteristics and factors affecting travel such as socioeconomic, community, and land use data, transportation system data, natural, physical, and human environmental concerns, and issues in the Corpus Christi Metropolitan Area. Task 2.0 maintained and expanded the transportation, socioeconomic, environmental, and land-use data and encompassed the development of models to forecast future conditions. The data supported statistical analyses for a wide variety of performance-based planning activities.

# SUBTASK 2.1 – MPO GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE MANAGEMENT

This subtask allowed staff to manage and update the GIS database as part of the MPO's continuous planning process. Data for state and national performance measures were collected and updated annually. Data for regional performance measures (i.e. measures used to evaluate the performance of the metropolitan transportation system overall) is also collected and updated annually. Project scale performance measures (i.e.

those used to prioritize capital investments on individual corridor segments) are updated at a minimum of every two years to inform project selection in conjunction with updates to the TIP, or as needed to guide regional decision-making. There were efficiencies that were gained by coordinating this data collection. The Corpus Christi MPO needed to use financial resources to acquire data directly. Examples included the hiring of firms to collect data and conduct surveys as occurred in the past. This is especially effective when done in conjunction with the 2020 US Census, unfortunately, the Census information was not available in the time anticipated due to the ongoing pandemic. It could require the future purchase of regionally specific data from one or more of the "Big Data" compiler agencies.

#### A brief list of these sources\* included:

- Crash Record Information System
- Statewide Traffic Analysis Reporting System
- https://tti.tamu.edu/
- https://www.cattlab.umd.edu/
- https://www.streetlightdata.com/
- https://www.airsage.com/
- http://inrix.com/
- https://www.innovarytech.com/turning-movement-counts/
- https://www.here.com/products
- https://mysidewalk.com/
- https://www.waze.com/
- https://www.tomtom.com/en\_gb/traffic-index/
- http://www.ihsglobalinsight.com/ProductsServices/ProductDetail838.htm

The Corpus Christi MPO acquired, aggregated, reviewed, and formatted data in a geospatial format to inform internal planning processes and the activities of the broader planning community. Analysis of the 2020 census demographic (population only available) and land use data were performed for the geographic distribution and aggregation. The Corpus Christi MPO coordinated with local and state agencies to develop trend data on changes in land use through the analysis and review of existing demographic data.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Maintained an up-to-date GIS portal that is publicly accessible through the MPO website.
- Disseminated data to inform regional planning efforts.
- We provided technical support to partners to facilitate effective use of the data generated by the updated Corpus Christi MPO models (Travel Demand Model, CRASH, etc...).
- Maintained the GIS databases that incorporate the most current data available from various sources, including, U.S. Census American Community Survey data, Texas Demographic Center, Crash Records Information System, etc.
- Maintained the Corpus Christi MPO developed web mapping applications and story maps relating to various Corpus Christi MPO planning documents and datasets, including the Strategic Plan for Active Mobility, Traffic Count Portal, etc.
- Continued development of an internal MPO Open Data website. This was not launched to the public yet.
- Coordinated with TxDOT to begin development of the 2021-2050 travel demand model refresh.
- Coordinated with consultants (PTV/UrbanSim) on the development of the 2021 and 2050 travel demand model databases.
- Developed an enhanced GIS database that supported the review of projects within the MTP, TIP, and CMP to assist in prioritizing projects.
- Participated in AMPO Emerging Technologies Working Group

<sup>\*</sup>Listing these companies in no way, shape, or form, suggests that the Corpus Christi MPO advocates or endorses their work. This is for information purposes only.

- Participated in AMPO Data Working Group
- Participated in COMPAT Peer Exchange
- Viewed Census Bureau Briefings
- Participated in AASHTO Urban Areas for the 2020 Census proposed criteria discussion
- Presented at and attended the AMPO Peer Exchange on GIS and Equity

#### SUBTASK 2.2 – TRAVEL DEMAND AND CORRIDOR MODEL DEVELOPMENT AND UPDATE

The Corpus Christi MPO staff coordinated with TxDOT to update the regional Travel Demand Model and planned to develop meso- and micro-scale corridor models as appropriate to assist with Congestion Management Process enhancements and Transportation System Management Operations that improve efficient traffic flows. A consulting firm was hired to acquire travel volumes, travel speeds, origin and destination information, anonymized routing information, and turning movement counts to aid planning and forecasting processes. These counts, and counts from other agencies, are coded into various models to aid analyses of conditions, needs, and solutions. Implementation of the Travel Demand Model enhancements including dynamic traffic assignment, time-of-day, intersection control, tours, land use, and transit information was evaluated for inclusion in the next update.

- Scoped and began creating an enhanced regional Travel Demand Model that includes Time of Day, enhanced assignment, multiple modes of travel, etc.
- Scoped a regional scale meso-level traffic model software for traffic analyses at both the corridor level and at individual signalized/unsignalized intersections under multiple future scenarios
- The 2019 CMP identified turning movement counts as a priority effort. In the past, Corpus Christi MPO
  hired consultants to acquire turning movements at key intersections throughout the region as part of the
  Regional Traffic Signal Coordination Plan. In FY 2022, and continuing at regular intervals as needed, the
  Corpus Christi MPO will acquire peak hour and off-peak turning movement counts.
- Participated in AMPO Emerging Technologies Working Group
- Participated in AMPO Data Working Group
- Participated in COMPAT Peer Exchange
- Viewed Census Bureau Briefings that were released bi-annually.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- Continued from 2021, the Corpus Christi MPO identified intersections and hire consultants to obtain peak
  hour and off-peak turning movement counts. These counts, and counts from other agencies, were coded
  into traffic models to aid analyses of conditions, needs, and solutions.
- The Corpus Christi MPO staff collaborated with TxDOT and consulting staff to update the Travel Demand Model with enhancements including dynamic traffic assignment, more times-of-day, intersection controls, tours in place of trips, and multiple socio-economic scenarios. Stakeholders from around the region reviewed and reconciled the updated model with other forecasting efforts. All assumptions, discussions, factors, and results shall be documented in sufficient detail to enable an outside observer to validate the model development and usage. The model considered emerging technologies and services such as electrification, automation, and sharing, and use these to represent traffic flow on the regionally classified network. The modes included networks for standard vehicles, autonomous vehicles, freight, transit, on demand shuttle services, regional bicycle and pedestrian movements. Large traffic analysis zones were subdivided to "enrich" the number of zones and provide additional detail for land-use scenarios and travel movements. Identified and evaluated impedances, centroids, external points, screen lines, and other factors that may require alternations from the regional model to develop the Updated Model. The value of time was estimated, and calibration to both travel volumes and travel speeds were investigated.
- Mesoscopic / Microscopic Simulation Models for each Corridor of Concern and Corridor of Note were scoped for future development. Emphasis was on showing problematic traffic flows including consideration of different vehicle types, driver behavior, and relationships with roadway characteristics.

- As part of the Regional ITS system, tools designed to develop optimal signal phasing and timing plans for isolated signal intersections, arterial streets, or signal networks were reviewed and acquisition explored.
- Reviewed TxDOT 5-year saturation traffic count locations and proposed additional sites based on growth since 2016.
- Converted the 2016-2045 travel demand model from version 2.4 of TexPACK to version 2.5.
- Coordinated with TxDOT, partner agencies, and consultants to refine the 2021 Urban Saturation count locations.
- Coordinated with TxDOT and consultants to begin the process of developing the new 2021-2050 travel demand model.
- Viewed NCHRP Forum on Technology and Transportation
- Participated in a webinar on ActivitySim in medium and small MPOs
- Viewed a webinar on Vistro and meso-level modeling at the regional level
- Attended Virtual Texas Model User Group meeting

# SUBTASK 2.3 – SOCIO-ECONOMIC ALLOCATION MODEL DATA ACQUISITION AND CALIBRATION

Reviewed local land use files, property information, employment information, and U.S. Census databases and updated databases as needed. Developed population, income, household, and employment data that are used in the Corpus Christi MPO's planning and forecasting processes. Explored and scoped with consultant help, an advanced allocation model of UrbanSim.

The socioeconomic database was compiled and updated using local land use files, property information, employment information, and U.S. Census materials such as American Community Survey (ACS), Woods and Poole forecasts, and other information as required.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Acquired the UrbanSim Socio-Economic Allocation Model for the Metropolitan Statistical Area using 2020
  Census and updated population and jobs forecast to 2050, and scoped work by consultants to develop a
  land use model that helps predict the pattern of growth and development by simulating the dynamic
  interaction of households, jobs, real estate markets and the regional transportation system within the
  constraints of local growth policies. This tool informs policy makers' decisions with relation to long-run
  patterns of growth and development, as well as infrastructure investments.
- Approved the initial scope of work for 2020 socio-economic allocation with consultant Freese and Nichols.
   Opened discussions with UrbanSim corporation for use of their model to allocate households and jobs in the region.
- Collected and compared socio-economic data from various sources including Woods and Poole, the Texas State Demography Center, the Texas Water Board, and other local entity studies.
- Attended Texas State Demography Conference
- Participated in a webinar on the useability of UrbanSim in allocating households and jobs

#### SUBTASK 2.4 – CRASH DATA ACQUISITION AND CRASH MODEL CALIBRATION

Unlike other performance measures applicable only to the National Highway System (NHS), the safety performance measures apply to all public roads. The Traffic Engineering Accident Analysis System (TEAAS) is a tool to analyze accidents that occur on roads throughout the state. This database is maintained by the Traffic Engineering and Safety Systems Branch of TxDOT. The Corpus Christi MPO staff acquired and refined crash data and supporting information such as traffic volumes and turning movement counts. These data were applied into appropriate models with consultant help, to create a locally calibrated crash analysis model that highlights unusual locations. Activities also included participation in multi-disciplinary safety initiatives at the local, regional, or state level and we initiate a regional traffic safety task force.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Identified and scoped a Highway Safety Manual Compliant suite of crash predictive, diagnostic and economic evaluation tools.
- Began calibrating the model and cleaned crash data. This allowed for future diagnostic capabilities of the crash analysis tools, a library of crash modification factors and economic evaluation capabilities to provide effective and defensible risk management platform for safety decisions.
- We scoped the process to conduct observational Before-After Studies to evaluate effectiveness of constructed improvements correcting for Regression to the Mean Bias using the Empirical Bayes method.
- Contracted for Crash Data Analysis with DiExSys Vision Zero Suite software and received initial overview of its capabilities.
- Initiated a Regional Safety Task Force discussion with the Technical Advisory Committee and the Transportation Policy Committee approved the formation of this Task Force.
- Began coordination to participate on the Statewide TxDOT/MPO Safety Task Force.

#### SUBTASK 2.5 – INFRASTRUCTURE CONDITION DATA AGGREGATION AND ANALYSES MODELS

The public wants good roads, but lacking a rigorous forecast of pavement conditions, while there is a forecast of congestion conditions, creates an unbalanced system and impacts public and elected official opinions. The Corpus Christi MPO staff began discussions to acquire infrastructure condition data from local and state sources. This data was planned to be integrated into a calibrated regional HERS-ST model that uses engineering concepts to identify deficiencies and apply economic principles to determine the outcome of different investment strategies.

HERS–ST can estimate future pavement conditions for specific investment levels, it can also evaluate the impacts of alternative types of investment strategies, develop scenarios for the best use of a limited amount of funds, and determine what the total cost is to completely repair and maintain all roads in the region in 5-, 10-, and 25-year increments. This will be done in FY 2023-2024.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Began scoping a consultant use of FHWA's Highway Economic Resource System (HERS) regional pavement management model based on data acquired by local governments.
- Acquired and harmonized available pavement condition data from local and state agencies.
- Investigated a HERS-ST model for regional analysis.
- Worked with TxDOT to acquire bridge condition data and an estimate of maintenance needs.
- Discussed processes to obtain culvert information and a method of estimating maintenance needs.
- Initiated conversations with TxDOT, the City of Corpus Christi and the City of Portland about transferring pavement condition data for use in developing a regional HERS model.

# SUBTASK 2.6 – COMMUNITY IMPACT MODEL DEVELOPMENT AND IMPLEMENTATION

The Corpus Christi MPO developed a scope of work for a consultant to aid development of a process and tool to quantify distributional equity using a census-based zonal system. After reviewing tools provided by federal agencies, the current concept is to utilize the combined capabilities of EPA's Environmental Justice tool, FHWA's HEPGIS, FHWA's STEAP tool, the Volpe Centers <u>TransportSE</u> tool, and other tools that may include a Noise api or Air Quality api available online.

This effort identified if there are disparities toward vulnerable populations using a three-step process:

- 1. Establish the baseline distribution of amenities and exposures to hazards within and among communities and geographies.
- 2. Analyze the forecast outcomes from projects for the different groups and compare the distribution of impacts to the identified needs of the disadvantaged groups.
- 3. Identify how proposed projects may improve or worsen the situation for the disadvantaged or vulnerable people compared to the most benefitted populations.

While it is difficult to specify what exactly the vulnerable populations desire until the outreach with them is complete, the data is developed based on the national goals:

- Crash analyses for representative intersections,
- Congestion analyses of representative intersections,
- Pavement and bridge conditions,
- Walk and Bike accessibility score analyses,
- MOVES3 hotspot analysis,
- Extreme weather vulnerability,
- Spatial distributions of trip-ends into the zones, by time of day.
- The analysis may also include an analysis of noise levels.

#### SUBTASK 2.7 – ENVIRONMENTAL RESOURCE / LINKAGES MODEL DEVELOPMENT AND IMPLEMENTATION

The federal requirement to incorporate mitigation into regional transportation plans requires a continuous, cooperative, and comprehensive process that responds to local, state, federal, and non-profit agency needs and priorities. The Corpus Christi MPO acquired plans and began the process to understand the goals of these agencies and how they impact or are impacted by transportation. The MPO discussed the process to acquire the data, and to create a tool, or develop a process to overlay the locations of critical social, cultural, or ecological attributes such as streams, wetlands, rare plant habitats, and historic sites, along with maps of potential transportation projects. A consulting firm was retained to scope out the development of forecasting tools and/or processes. The exact effort cannot be known until the relationship with each of these agencies is known. This effort increases opportunities for collaboration that did not easily exist in the past. By sharing information with partner agencies and stakeholders early in the planning process, transparency that creates conditions for more efficient and effective approaches to both projects and mitigation can be identified. This subtask results in the data and process necessary to identify both the types of potential environmental mitigation activities that may have the greatest potential to restore and maintain the environmental functions affected by the projects included in the MTP and where the areas to carry out these activities are located.

# SUBTASK 2.8 – HAZUS / RESILIENCY MODEL DEVELOPMENT AND IMPLEMENTATION

The Corpus Christi MPO acquired the HURREVAC model and received initial training on its use. The MPO has created a scope of work with a consultant, who may develop one or more tools or processes to identify critical transportation infrastructure and how and where the transportation system is vulnerable to extreme weather events and climate change impacts.

#### SUBTASK 2.9 – ECONOMIC ANALYSES MODEL DEVELOPMENT AND IMPLEMENTATION

The Corpus Christi MPO has had discussions with consultants and local staff about an econometric tool and process to provide both benefit-cost analysis (BCA) and Net Present Value (NPV) to help ensure that the transportation funding is devoted to projects that are efficient and effective investments for the region.

- BCA is a systematic process for identifying, quantifying, and comparing the expected benefits and costs of
  a potential infrastructure project. The intent of benefit-cost analysis is to examine whether the proposed
  project is justified given its expected benefits; simply comparing one capital investment project to another
  does not indicate whether either project would be cost-beneficial in its own right.
- NPV is perhaps the most straightforward BCA measure. All benefits and costs over an alternative's life cycle are discounted to the present, and the costs are subtracted from the benefits to yield an NPV. If benefits exceed costs, the NPV is positive and the project may be considered to be economically justified.

# **TASK 2 – FUNDING SUMMARY**

Funding Source	Amount Budgeted	Amount Expended	Balance	% Expended
Transportation Planning Funds (PL 112 & FTA 5303)	\$143,000	\$174,964.80	\$(31,964.80)	122.35%
Local Planning Funds	\$0	\$0	\$0	0
FTA (Sec. 5309)	\$0	\$0	\$0	0
CMAQ	\$0	\$0	\$0	0
STP MM	\$0	\$0	\$0	0
TOTAL	\$143,000	\$174,964.80	\$(31,964.80)	122.35%

# TASK 3 – SHORT RANGE PLANNING

Task 3 included an overall description of the Corpus Christi MPO's short range planning activities. This task included all subtasks listed in the UPWP with a description of each subtask product received or work accomplished and agency responsible. If work under a subtask was completed by a consultant/subcontractor, this is specified. If an "amount expended" exceeded or is below the "amount budgeted" by 25% or more, this is noted in the task funding table and an explanation must be provided for the variance. Expenditures were within budgeted limits. Any funding in a task that was underspent, it was rolled over into the FY 2023 UPWP along with the tasks to be performed.

#### **TASK 3 – OVERALL DESCRIPTION**

The process of building, operating, maintaining, and reconstructing the region's surface transportation system is complex and demands ongoing metropolitan planning efforts. The activities described in this task depend upon collaborative and coordinated information and decision-making processes among state and local government agencies, transportation providers, and the users of the regional system. The cooperation among all these stakeholders simplifies and harmonizes metropolitan transportation planning efforts and leads to greater mobility and accessibility benefits.

**OBJECTIVE** – In addition to maintaining a TIP that outlines a four-year schedule of transportation improvements for the study area and reflects the planning priorities of federal legislation, the Corpus Christi MPO carried out various planning studies to assess the need for other projects that have not yet been identified in the MTP or TIP. Such studies functioned to guide capital investments and project prioritization by municipalities and other entities in the MPO area.

#### **METHODOLOGY**

- Maintained an up-to-date FY 2021-2024 TIP
- Created the FY 2023-2026 TIP
- Identified EJ/Title VI funding and project list in the FY 2023 2026 TIP and 2050 MTP
- Implemented new requirements under IIJA/BIL, Executive Orders, and FHWA/FTA's Planning Emphasis Areas in the FY 2023-2026 TIP
- Acquisition and compilation (annually) of myriad Performance Metric data—including seven congestion-specific metrics—relating to eight Performance Measurement topics and four regional Goal Areas, per the MPO's performance-based planning framework, as defined in the CMP. These data, which are acquired from multiple sources, are used to prioritize capital projects and assess the functionality of the regional transportation network, including evaluating the severity of congestion
- Collaboration with local partners to collect freight origin/destination data to augment the existing hazardous materials commodity flows dataset
- Participation in the update to the Coastal Bend Regional Coordination Plan
- Pursued becoming the coordinating agency for the Coastal Bend Regional Coordination Plan
- Compiled traffic count data from various multiple sources to inform the evaluation of the degree of congestion on various segments
- Participated in the identification of a process for the TSMO/ITS Architecture Plan
- Planned for a new Active and Micro-mobility Transportation Plan
- Participated in the Statewide/Regional Freight Planning efforts
- Connected to transit coordination efforts with the CCRTA
- Discussed the potential for a Regional and Project Economic Analyses Whitepaper
- Discussed development ideas for an Infrastructure Lifecycle Analysis Report
- Performed with consultant assistance a Crash Analysis and Incident Management Planning

**SUBTASKS** - The subtasks are listed in detail on the following pages.

Subtask 3.1 Transportation Improvement Program (TIP) Update & Development

- Subtask 3.2 CMP/TSMO/ITS Architecture Plan
- Subtask 3.3 Active and Micro-mobility Transportation Planning
- Subtask 3.4 Regional Freight Planning
- Subtask 3.5 Transit Coordination
- Subtask 3.6 Economic Analyses of Projects and Portfolios
- Subtask 3.7 Infrastructure Lifecycle Analysis and Reporting
- Subtask 3.8 Crash Analyses and Traffic Incident Management Planning
- Subtask 3.9 Coordinated Public Transit Human Services Transportation Plan Update
- Subtask 3.10 Regional Resiliency Improvement Plan
- Subtask 3.11 Planning and Environmental Linkages

# SUBTASK 3.1 – TRANSPORTATION IMPROVEMENT PROGRAM (TIP) UPDATE

One of the primary responsibilities of the Corpus Christi MPO is developing a Transportation Improvement Program (TIP). The TIP includes all transportation projects within the Corpus Christi Metropolitan Planning Area for which federal and/or state funds is used, as well as all projects that have regional significance and are funded using local or private funds. The Corpus Christi MPO staff developed the FY 2023 – 2026 TIP, and also maintained and amended the FY 2021-2024 TIP to reflect changes in area priorities, scope, accessibility, and funding for roadways and transit projects. A cooperative interagency input process was part of the public involvement component of this task.

Category 9 project application was created and provided, in an easily understood manner and with sufficient detail, the design concept and scope descriptions of all existing and proposed transportation facilities to permit the development of cost estimates for major transportation investments for which analyses are not complete. An application form for other Funding Categories was discussed, and in the process of development with the help of a consultant. The application shall identify study corridors and subareas and may stipulate either a set of assumptions (assumed alternatives) concerning the proposed improvements or a no-build condition pending the completion of a corridor or subarea level analysis under Sec. 450.318, sufficient descriptive material (i.e., type of work, termini, length, etc.) to identify the project or phase.

An important and challenging effort is refining the decision support system to reflect adopted regional priorities and aid in allocating funds to those projects and programs. The Corpus Christi MPO also monitored the delivery of capital projects to support on-time and on-budget construction. Another focus was on developing priority projects to the level that allows the Corpus Christi Metropolitan area to compete nationally for discretionary funds.

This task also produced the required system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the adopted performance targets including progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports; and an analysis of how the preferred investment scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- Developed the FY 2023 2026 TIP
- Developed (Hired a consultant to develop) TIP project selection tool for Performance-Based Planning & Programming
- Refined the Corpus Christi MPO approach to projects that are grouped in the TIP.
- Maintained an up-to-date FY 2021-2024 TIP by processing technical changes as necessary as well as administrative amendments and Transit amendments based on project status and additional FHWA/FTA funding.
- Developed Amendments to the FY 2021-2024 TIP as articulated on the website pages illustrating the process and public meetings and TAC and TPC recommendations and approvals.

- Coordinated with TxDOT-CRP and Corpus Christi Regional Transportation Authority to make the amendments to FY 2021-2024 TIP and submitted required documentation through TxDOT's eSTIP portal.
- Identified and documented roadway projects being accomplished by local governments and agencies to gain an understanding of the projects and determine if the nonfederal project should be amended into the existing current TIP or wait for inclusion in the next TIP.
- Awarded a contract to a consultant for developing a systematic, performance-based planning and programming project selection system.
- Developed the FY 2023 2026 TIP as articulated on the website pages illustrating the process and public meetings, TAC, and TPC recommendation and approval.
- Attended hands-on web training on how to use Decision Lens to prioritize projects.
- Attended hands-on web training on how to use Decision Lens with Performance Metrics.
- Viewed presentation on Multiple Objective Decision Analysis

# **SUBTASK 3.2 – CMP/TSMO/ITS ARCHITECTURE PLAN**

The Corpus Christi MPO continued to work toward convening a CMP Committee and enhancing the ITS Architecture Plan and ITS Strategic Implementation Plan to include current technologies, along with connected and autonomous vehicle systems. Initiated several conversations multiple times with TxDOT Corpus District about ITS Architecture and TSMO plans for the region. We discussed the internal process for efforts to occur after completion of the updated travel models in that each Corridor of Concern from the adopted CMP shall be evaluated for short, medium, and long-range planning horizons based on capacity and operations as compared to expected demand. Corridors of Note were discussed to be included in the plan as appropriate.

This effort was discussed internally as we await the development of the regional draft ITS plan by the TxDOT CRP District office. The Corpus Christi MPO staff reviewed the initial scope for the Regional ITS plan drafted by the TxDOT CRP District. The development of the draft Regional ITS plan is ongoing and some of the staff funds for this task were rolled over to FY 2023. We discussed the process for when the draft is finalized and reviewed by the Corpus Christi MPO, performance shall be measured using adopted goals and performance metrics. The process will result in a list of roadway segments that have deficiencies when evaluated using adopted metrics for both existing conditions and forecast future conditions, using updated models and information. The relatedness of individual facilities to a corridor should be tested by changing network features and reviewing impacts to other facilities. The effort will include evaluating recurring and non-recurring congestion as part of the overall evaluation of the regional transportation network. The Corpus Christi MPO staff began review of cost-effective interventions, based on the adopted Congestion Management Program, to address these "identified deficiencies."

The 2020 CMP established a systematic process that provides information on transportation system performance and alternative strategies to alleviate congestion and enhance the safety and mobility of people and goods in the Corpus Christi Metropolitan Area. Modern roadway operations are driven primarily through advancements in technology, though proper planning and physical projects may play a role as well.

The Intelligent Transportation System (ITS) Architecture plan, once finalized refined will identify technologies to improve mobility, increase safety, and reduce delays. We continued to discuss the aspects of the ITS that improves the existing roadway system's operations in a cost-effective manner.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Received training on using INRIX and RITIS tools.
- Had initial discussions with TxDOT on updating the Regional Transportation System Management and Operations (TSMO) Plan
- Reviewed the initial draft scope of services for the Regional ITS Architecture Plan developed by TxDOT-CRP
- Participated in internal meetings to review other MPO's TSMO efforts and their participation groups. We anticipate that our local efforts will include the TxDOT-CRP, the City of Corpus Christi, Nueces County, and

- the CCRTA. Our salary expenditures were used to review/discuss the possible draft TSMO Plan and the Capability Maturity Framework model. Funds for this task were part of the roll-over funds for FY 2023.
- Identified possible access management improvement opportunities to address congestion by reviewing local government corridor studies and project development processes. Also met with the City of Corpus Christi Traffic Engineering staff to review their traffic operation center and pavement management system implementation
- Identified transportation and traffic improvements that are effective and efficient while enhancing safety and minimizing social and environmental impacts as part of updating the Corpus Christi Area Development Plans (ADPs), CIP plans, Master Plans, and implementation of transportation projects.
- Viewed Exploring Speed Management in the United States and Abroad webinar
- Viewed Webinar Complete Trip ITS4US Deployment Program ConOps: ARC
- Viewed Webinar Complete Trip ITS4US Deployment Program ConOps: Buffalo
- Viewed TxDOT Corpus Region TSMO Program Plan Capability Maturity Framework (CMF) Preview
- Received notice of a TSMO Group that is comprised of TxDOT-CRP, the City of Corpus Christi, Nueces County, CCRTA and discussed the forthcoming Capability Maturity Framework model.

#### SUBTASK 3.3 – ACTIVE AND MICRO-MOBILITY TRANSPORTATION PLANNING

The Corpus Christi MPO strives to reflect non-vehicular and micro-mobility modes of transportation in its transportation planning. This subtask continued to build on the work previously conducted and ensures that the MTP and TIP for the Corpus Christi MPO shall provide for "...the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that functions as an intermodal transportation system in the metropolitan planning area and as an integral part of an intermodal transportation system for the State and the United States." USC 49 Section 5303c(2).

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- Developed Sidewalk Inventory within the MPO planning area.
- Developed the Surface Transportation Block Grant Set-Aside (STBG-SA) Program Guidance and Procedure that laid out the eligible entities, projects, responsibilities of the sponsor agency, project selection process, and so forth.
- Held internal discussions to review the Category (CAT) 9 Transportation Alternative Set-aside projects for FY 2021 through FY 2024 as part of the new FY 2023-2026 TIP that was completed.
- Revoked the City of Corpus Christi FY 2018 Region-wide Bike Blvd Wayfinding Initiative and returned the funds for the 2022 Corpus Christi MPO, STBG-SA (CAT 9) project selection process.
- Issued a Call-for-Projects for STBG-SA (CAT 9) and selected projects according to the 2022 STBG-SA/CAT 9
   Project Selection Guidance and Criteria
- Researched the status of TASA funds and prior awards to coordinate information with TxDOT for possibly lapsing federal funds. No lapsing funds were identified for FY 2022.
- Participated on AMPO Active Transportation Working Group
- Attended TxDOT's virtual Bicycle and Pedestrian Advisory Committee (BPAC)
- Hired a consultant to scope out Walkability and Bikeability scores at a sub-neighborhood level throughout the region
- Hired a consultant for the development of Community Impact Assessment Model

#### **SUBTASK 3.4 – REGIONAL FREIGHT PLANNING**

Safe and efficient multi-modal freight mobility is a cornerstone of the regional economy. Expanding rail capacity, enhancing trucking safety, and bolstering the nexus between modes are Corpus Christi MPO priorities. The Corpus Christi MPO staff worked with TxDOT, the Port of Corpus Christi and other significant freight stakeholders to update the designation of national freight network routes in the region. The Corpus Christi MPO also continued

to collaborate with regional emergency management partners to explore strategies for mitigating risk associated with freight operations in the face of industrial growth.

# Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- Updated designated National Freight Network routes in the Corpus Christi MPO area
- Considered strategies for enhancing freight efficiency and minimizing risk on the Harbor Bridge Replacement Project.
- Informed TAC of FHWA and Center for Transportation Excellence (CTE) teleconference workshops and
  webinars related to freight issues, transportation technology, and safety for member agencies and the
  interested public. Provided the TAC with updates to Texas Port CIP projects related to our local Port of
  Corpus Christi system as well as statewide activities at other Ports as examples of freight planning.
  Additionally, we provided updates on freight activity in the MPO area and the broader Texas area in
  general as well as part of the global pandemic that severely impacted freight operation in our region, the
  state, country, and internationally.
- Continued collaboration with regional partners to collect freight origin/destination data to augment the existing Hazardous Material Commodity Flow data set to inform whether to voluntarily undertake a routing process for non-radioactive hazardous materials (NRHM).
- Continued collaboration with the Port of Corpus Christi to promote the PCCA's truck queuing project on the Joe Fulton International Trade Corridor as a regional case study. Additionally, reviewed citizen comments and city planning process comments related to truck parking in the areas surrounding the Port of Corpus Christi and especially the North Beach area.
- Viewed Panama Canal/Panamax Webinar

#### **SUBTASK 3.5 – TRANSIT COORDINATION**

The Corpus Christi MPO strived to support transit services that enhance regional economic growth and universal access to goods and services. The Corpus Christi MPO continued to participate and provide technical support to Corpus Christi Regional Transportation Authority (CCRTA) in an attempt to ensure that plan recommendations are consistent with the current needs and resources of public providers, private providers, and the health and human services community. This is an ongoing task with Corpus Christi MPO staff serving as an engaged stakeholders in the process.

The Corpus Christi MPO maintained active engagement with CCRTA Operations and Planning departments. The MPO remains committed to supporting the Regional Public Transportation Coordination Plan, from the Transportation Coordination Network of the Coastal Bend (TCN).

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Updated Transit Route and Transit Service Coverage Maps
- Participated in the CCRTA's Long-Range System Plan discussions
- Provided technical assistance to regional partners in the interest of sustaining initiatives outlined in the Regional Public Transportation Coordination Plan.
- Reviewed proposed updates to the Regional Transportation Coordination Plan, initiated coordination with the new responsible agency, the Coastal Bend Council of Governments.
- Assisted CCRTA staff in the development and public processes for the FY 2021-2024 TIP Amendments through TxDOT and FHWA/FTA.
- Tracked ridership and regional impacts to services related to the pandemic to discuss with CCRTA staff any strategies or marketing ideas that could assist the system operations.
- Viewed the Texas Innovation Alliance webinar on Rapidly Advancing Automated Transit
- Viewed TxDOT's virtual Public Transportation Advisory Committee (PTAC).

#### SUBTASK 3.6 – ECONOMIC ANALYSIS OF PROJECTS AND PORTFOLIOS

The Corpus Christi MPO staff worked with consultants to develop scopes of services for future econometric model(s) to complete analyses of potential economic impacts/benefits of both individual projects and portfolios of projects in the region. Planning and promoting economic development is important in developing and sustaining a strong and vibrant community. It is important for the Corpus Christi MPO to collaborate with agencies throughout the region to encourage economic growth, be responsive to the needs of the business community, and work to strengthen the region's position in attracting and retaining businesses. However, those efforts must be undertaken within the context of sustaining what the region already enjoys — a tight-knit community with a rich history and vibrant culture.

Investment decisions are typically based on analyses of benefit-cost analysis (BCA), and/or cost-effectiveness analysis (CEA), to appraise economic viability. Increasingly BCA or CEA are complemented by multicriteria analysis (MCA) to capture the multiple dimensions that affect decision-making – social, economic, environmental, and financial. We discussed that for projects to be evaluated and financed by federal agencies, TxDOT, or the Corpus Christi MPO, guidelines are to be made available for economic analysis of investment projects.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- As part of the 2050 MTP development process, we discussed a myriad of Performance Metric data—
  including seven congestion-specific metrics per the MPO's performance-based planning framework, as
  defined in the CMP. These datasets, which are available from multiple sources, will be used to assess
  capital projects and the functionality of the regional transportation network, including evaluating the
  severity of congestion.
- Assessed possible revisions to the current CMP with enhancements added throughout FY 2022 as new information and exhibits were updated as part of the continuous CMP efforts.
- Completion of this effort is part of the rollover of funding.

#### SUBTASK 3.7 – INFRASTRUCTURE LIFECYCLE ANALYSIS AND REPORTING

The need to maximize the benefits of limited funding and stabilize budgets is particularly acute for the preservation of infrastructure. TxDOT and local agencies are grappling with the fact that many critical bridges, roadways, and drainage networks need substantial repair or replacement. Maintenance, upgrades, and replacements are a growing need, and with limited resources, it is even more important that decision-makers prudently plan and spend current and future budgets. When the cost of a project is estimated only for design and construction, the long-term costs associated with maintenance, operation, and reconstruction of a project are often overlooked. Similarly, comparing project design alternatives by their initial costs can lead to shortsighted decisions. Without careful examination of the full life cycle costs, investment decisions today could cost an agency even more in the years ahead. Something as simple as a bridge replacement provides the opportunity to construct an asset, sometimes with higher upfront costs, in a way that reduces the needs for future revenues dedicated to that asset, often referred to as "sustaining capital." A poor choice today can be amplified in future decades as the inflexible and long-life nature of infrastructure can create unaffordable requirements in the future.

This subtask proposed to utilize the HERS-ST model contemplated in Task 2.5 and other studies to begin approximating the lifecycle burden of the transportation infrastructure in the region, with a focus on the NHS. Development of the HERS-ST model was delayed from FY 2022 UPWP subtasks and rolled over into the FY 2023 UPWP subtasks. Eventually, the HERS-ST model will produce a description of the condition of the assets and the costs of operations and maintenance activities. Performance deficiencies are identified, and lifecycle cost analysis can suggest potential investment strategies for local entities to undertake. In combination with financial planning, this can encourage conversations about long-term goals, issues, opportunities, and revenue needs. Initiated discussions with contracted consultants on developing HERS-ST for the Corpus Christi region and with the City of Corpus Christi for pavement condition data.

#### Work Performed and Status

This task was delayed in the FY 2022 UPWP and rolled over to the FY 2023 UPWP subtasks.

Corpus Christi MPO staff performed and completed the following:

- Hired a consultant to scope a customized FHWA's Highway Economic Resource System (HERS) regional pavement management model.
- Coordinated with the City of Corpus Christi on gathering pavement condition data.
- Reviewed the applicability and timing of the HERS-ST model development within the FY 2022 time period given the impact of data availability and timing associated with the development of the 2050 MTP.
- Met internally and spoke with consultants to confirm that this subtask is not ready to proceed at this time. The subtask was deferred to the FY 2023 UPWP.

#### SUBTASK 3.8 – CRASH ANALYSIS AND TRAFFIC INCIDENT MANAGEMENT PLANNING

This subtask comprised the rigorous analysis of crashes on all public roads in the region. The activities include participation in multi-disciplinary safety initiatives at the local, state, or national levels to address traffic safety in a holistic manner; research and analysis of crash data from TxDOT's Crash Record Information System (CRIS), and coordination of training and workshops on safety related issues for agencies and regional implementers, if available or needed.

A complete regional study of fatal and serious injury crashes was undertaken, documenting regional trends and influencing factors. Emphasis begins with implementing systemic operations and engineering improvements but may include assisting enforcement activities. It identified different categories of factors from the regional TDM: accident exposure factors, socio-economic factors, and network factors.

The Corpus Christi MPO created a regional safety committee to investigate strategies to address identified issues. This ad hoc committee helps inform local planning and programming efforts to improve transportation safety and achieve/exceed the region's roadway safety targets.

A site-specific phase was to explore various strategies to address locations with unusual characteristics. This effort was intended to help inform local planning and programming efforts to improve transportation safety and achieve/exceed the region's roadway safety targets. This effort was delayed to FY 2023.

FHWA encourages the MPOs to consider Traffic Incident Management (TIM) activities as part of their UPWPs. TIM directly supports multiple planning factors related to safety, mobility freight movement, air quality, and transportation system reliability. TIM addresses the non-recurring congestion which causes a delay that impacts all travelers, including just-in-time freight haulers. TIM also improves safety by reducing the likelihood of a secondary crash and responders being struck. Furthermore, TIM impacts the economy by reducing delay that impacts consumers and results in wasted fuel. The Corpus Christi MPO discussed that we may in the future:

- Propose TIM to elected officials
- Facilitate TIM Responder Training
- Facilitate working groups and activities
- Foster relationships with private haulers and Law Enforcement Agencies
- Facilitate After Action Reviews
- Fund ITS Projects
- Compile data for Performance Measures

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Calibrated the Vision Zero Suite Crash Model
- Developed Safety Performance Functions
- Formed the Regional Traffic Safety Task Force
- Participated the Statewide Traffic Safety Task Force discussions

- Began the process with a consultant team to conduct traffic crash data analysis by using DiExSys Vision Zero Suite software to identify the safety issues in the region.
- Created a Regional Traffic Safety Task Force that is comprised of multi-agencies for collaborative efforts to address the safety issues in the region and Safety Performance Measures (PM1).
- Viewed TIA TMC Operations & Preparedness
- Viewed webinar 3 Technologies That Are Helping Agencies Hit Their Vision Zero Goals

#### SUBTASK 3.9 – COORDINATE PUBLIC TRANSIT – HUMAN SERVICES TRANSPORTATION PLAN UPDATE

This plan serves two primary purposes: guide the programming process for FTA Section 5310 funding and provide guidance to enhanced mobility providers on how to best advance the mobility independence of older adults, individuals with disabilities, low-income populations, and veterans in the Corpus Christi Urbanized Area. This effort emphasized coordination among all the key players including public transit providers, private operators, and volunteer driver programs. It also includes the customers, staff, and stakeholders from human services and health care agencies.

The Corpus Christi region worked to more fully incorporate mobility management into planning processes to help ensure that decisions on funding transportation projects can result in more equitable distribution of services, facilities, and resources. The Corpus Christi MPO staff fulfilled requirements related to the 5310 Program: Enhanced Mobility of Seniors and Individuals with Disabilities, including participating in a regional rating and ranking committee for the program. The performance measures included in the updated Coordinated Public Transit – Human Services Transportation Plan required the collection of quantitative and qualitative information, as available, concerning modifications to the geographic coverage of transportation service, the quality of transportation service, or service times that increase the availability of transportation services for seniors and individuals with disabilities; ridership; and accessibility improvements.

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Discussed with TxDOT the possibility of becoming the Region 20 lead agency for the Coordinated Plan
- Participated in the TxDOT-led, consultant (TTI) developed plan process to create the Coordinated Plan focusing on the impacts within the Corpus Christi MPO boundaries.
- Viewed Webinar: Improving Access for All: Bringing On-Demand Technology to Paratransit
- Viewed the National Aging and Disability Transportation Center webinar on Meeting the Transportation Needs of Diverse Older Adults and People with Disabilities
- Viewed webinar on Rural Transportation & Medical Access

#### **SUBTASK 3.10 – REGIONAL RESILIENCY IMPROVEMENT PLAN**

The Corpus Christi MPO Resiliency Improvement Plan complements State and local plans to reduce the magnitude and duration of impacts from weather events and disasters. The Corpus Christi MPO included a risk-based assessment of the vulnerabilities of surface transportation assets and systems to current and future weather events and natural disasters, such as severe storms, flooding, drought, high winds, levee failures, wildfire, extreme weather, including extreme temperature, and sea level rise. This information helps local decision-makers anticipate, prepare for, and respond to disruptions in ways that allow for the continued operation or rapid recovery of the surface transportation system.

The Resiliency Plan was discussed to identify projects, and planning and programming to identify critical infrastructure prioritize, the resurfacing, restoration, rehabilitation, reconstruction, replacement, improvement, or realignment projects that provide absorptive and adaptive capacity to ensure that the surface transportation system can quickly recover and continue to serve critical local, regional, and national needs. This includes designating evacuation routes and strategies to access hospitals and other medical or emergency service facilities, major employers, critical manufacturing centers, ports, intermodal facilities, utilities, and Federal facilities. Identified projects should include the incorporation of manmade mitigation measures that strengthen systems

and natural infrastructure that protects and enhances transportation assets while improving ecosystem conditions, including culverts that ensure adequate flows in rivers and estuarine systems.

#### **SUBTASK 3.11 – PLANNING AND ENVIRONMENTAL LINKAGES**

The Corpus Christi MPO aspires to being as deliberate in identifying environmental impacts and developing coordinated and collaborative mitigation activities as we are in identifying transportation needs and developing transportation projects. With this in mind, the Corpus Christi MPO collaborated with local governments, non-profit organizations, and state and federal resource and regulatory agencies to mitigate adverse impacts of transportation policies and projects. Collaboration among transportation planning, economic development, land development, and wildlife conservation efforts is critical because the impacts of transportation will cut across all these individual efforts. A desired outcome of the Corpus Christi MPO collaboration process is that transportation planning and decision making, including project selection (transportation and mitigation), integrates and coordinates land use, water quality, and natural resource planning and management. Identifying as many environmental concerns as possible will occur early in the transportation planning and project development process to help efficiently and effectively Avoid, Minimize, Mitigate, Enhance and Remediate impacts.

**TASK 3 – FUNDING SUMMARY** 

Funding Source	Amount Budgeted	Amount Expended	Balance	% Expended
Transportation Planning Funds (PL 112 & FTA 5303)	\$181,000	\$192,030.25	\$11,030.25	106.09%
Local Planning Funds	\$0	\$0	\$0	0
FTA (Sec. 5309)	\$0	\$0	\$0	0
CMAQ	\$0	\$0	\$0	0
STP MM	\$0	\$0	\$0	0
TOTAL	\$181,000	\$192,030.25	\$11,030.25	106.09%

# TASK 4 – METROPOLITAN TRANSPORTATION PLAN (MTP) UPDATE

Task 4 included an overall description of the Corpus Christi MPO's metropolitan transportation plan development activity. Included are all subtasks listed in the UPWP with a description of each subtask product received or work accomplished and agency responsible. If work under a subtask was completed by a consultant/subcontractor, this is indicated. If an "amount expended" has exceeded or is below the "amount budgeted" by 25% or more, this is noted in the task funding table and an explanation provided for the variance. Activities not completed in FY 2022, were rolled over into the FY 2023 UPWP.

#### **TASK 4 – OVERALL DESCRIPTION**

Task 4.0 reflects efforts in support of developing and maintaining the 25-year Metropolitan Transportation Plan (MTP). Key activities for FY 2022 were reviewing and anticipating possible plan amendments; evaluating the process used in the future MTP development and proposing improved methodologies; and anticipating potential impacts from new federal legislation. Initial activities for the 2050 MTP began during this FY 2022 UPWP time-period. Development of the 2050 MTP has several subcomponents inherent in an update, including:

- Demographic Forecasts/Small Area Forecast
- Congestion Management Process
- Regional ITS Plan
- Regional Freight Plan
- Transit Plan (in coordination with CCRTA)
- Specialized Transit Plan (in coordination with Coastal Bend COG and CCRTA)
- Regional Nonmotorized Plan
- Regionally Significant Corridor Studies
- Transportation System Reporting and Needs Identification Studies

**OBJECTIVE** – The Corpus Christi MPO performed preparatory and early long-range and regional transportation planning activities to support developing, maintaining, and implementing the metropolitan transportation plan; and participate in local and statewide transportation planning and coordination efforts

**METHODOLOGY** – Corpus Christi MPO staff supported the implementation of the preferred strategies within the developing 2050 MTP activities. These included:

- Non-motorized (bicycle and pedestrian) planning;
- Participated on transportation Task Forces;
- Provided technical support and coordinating transportation plan development with ongoing local transportation planning activities;
- Pursued innovative funding strategies to accelerate needed improvements;
- Participated in statewide and Corpus Christi MPO regional long-range transportation planning activities;
- Provided transit planning assistance to member entities;
- Continued coordination for implementation of the recommendations from the Specialized Transportation and Transit Plans;
- Continuing coordination with TxDOT-CRP for TSMO/ITS Subtasks;
- Discussed possible amendments to the 2045 MTP; and
- Prepared the Metropolitan Systems Performance Report update

#### **SUBTASK 4.1 – REFINE VISION AND GOALS**

While most transportation plans involve the public and stakeholders in defining a vision, a performance-based plan requires clear agreed-upon goals and objectives, since the strategic direction of goals and objectives are used to define performance measures. Consequently, it is critical for public involvement and stakeholder engagement

to have a forum for rationally discussing priorities and trade-offs. These discussions lead to developing and selecting achievable targets and in defining desired outcomes. In a performance-based plan, the public and stakeholders are involved in not just providing general concepts, but clearly defining or prioritizing goals and specific objectives, which leads to performance measures and achievable targets that are used in assessing plan options and/or selecting investments.

The Corpus Christi MPO staff planned to bring together stakeholders with in-depth knowledge of transportation and community related goal areas to refine the goals and objectives in the 2050 MTP. The goals and objectives of other agency plans inform the development of the goals and objectives of the transportation plan. The process of developing the transportation plan encourages decision-makers and the public to explore goals and objectives from different plans, identify potential conflicts and commonalities, and create a prioritization system.

#### Work Performed and Status

Corpus Christi MPO staff performed and completed the following:

- On-going research and discussion on the Regional Complete Streets Policy and Plan
- Technical support to partners that facilitated effective use of the data generated by the updated model
- Provided technical support to consultant for the development and completion of the MPO's updated Travel Demand Model with a 2016 base year and 2045 forecast year.
- The MPO staff reviewed the enhancements of the City of Corpus Christi's consultant developed enhanced travel demand model as a possible core update request for future model enhancements for the next 2050 MTP
- Viewed Transportation Equity at USDOT Information Session Webinar
- Viewed TRB Webinar: Addressing Justice in Transportation
- Viewed Volpe webinar: Strategies to Overcome Transportation Barriers for Rent Burdened Residents

#### SUBTASK 4.2 – REFINE PERFORMANCE MEASURES AND EVALUATION CRITERIA

Selecting performance measures in a performance-based plan is often thought of as a "data-driven" process. The public and stakeholders play a critical role in defining performance measures. It is important to work with the public and stakeholders to clearly define what is important and meaningful to them. Engaging participants helps define what is meant by different objectives and what metric is most appropriate. Goals associated with mobility, accessibility, and quality of life manifest themselves in different ways, and stakeholders have different views of what different terms mean. Working with stakeholders to define how to measure performance helps to clarify what is most critical to the public and guides the analysis of strategies in the plan. The materials produced actively and continuously strive to use plain language and to ensure that measures used in the plan are understood by the stakeholder community.

The Corpus Christi MPO staff reported the specific criteria and analysis procedures that compare portfolios and scenarios comprised of distinct projects and policies for progress toward achieving the regional, state, and national performance goals.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Updated the Financial Plan of the 2020-2045 MTP to serve as the starting point for the 2050 MTP
  Financial Plan. New fiscal forecasts from the TxDOT UTP process in 2022 was the initial update to the
  previous 2020 UTP funding estimates.
- Corpus Christi MPO staff reviewed the current status of the regional ITS efforts and discussed the feasibility of integrating ITS resources into the incident management strategies.
- The Corpus Christi MPO staff discussed the possible opportunities to partner or leverage public resources into operations and maintenance projects in the region.
- The Corpus Christi MPO identified possible locally relevant performance measures amidst state and federal performance measures as they became available to be integrated into the project selection

process for the 2050 MTP and FY 2021-2024 TIP updates/amendments and FY 2023 – 2026 TIP development. The state performance measures were adopted by the Corpus Christi MPO for these purposes.

#### SUBTASK 4.3 – IDENTIFY NEEDS AND DEFICIENCY LOCATIONS

Used the performance goals and measured conditions to identify specific corridors, roads, and areas which are deficient in one or more ways. This dataset is the basis for problems and opportunities that can be addressed by "projects or policies". Using the adopted goals, metrics, and baseline conditions; the Corpus Christi MPO TPC established a list of needs for at least: pavement condition, bridge condition, crashes, and congestion.

Corpus Christi MPO staff continued the process to identify the location of transportation deficiencies where both the current and future systems experience safety issues, unacceptable roadway conditions, operational problems, lack of interconnectivity, congestion, or other issues.

#### **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- Maintained an up-to-date fiscally constrained 10-Year Plan for the periods of FY 2022-2031.
- Identified opportunities to partner and leverage public resources for projects.
- Participated in Extreme Weather and Climate Change Adaptation presentation
- Viewed NCHRP Resiliency for Real Forum
- Viewed webinar The Texas Triangle: An Emerging Power in the Global Economy

#### SUBTASK 4.4 – DEVELOP A FINANCIAL PLAN OF REASONABLE AVAILABLE FUNDING

Transportation systems are challenged to accommodate many competing needs, and fiscal constraint is vital to prioritizing resources to address those needs. Fiscal constraint also helps clarify what is possible with existing funding sources and can inform debate about a need for new funding. Providing realistic funding and revenue forecasts from the outset supports decision-makers, stakeholders, and public trust by providing an understanding of the limits of funding to support the implementation of strategies.

The Corpus Christi MPO staff, in cooperation with CCRTA, local municipalities and counties, and TxDOT, developed this financial plan. This effort required forecasting reasonably foreseeable revenue resources using realistic and collaboratively developed assumptions about existing funding sources, potential funding sources, alternative financing strategies, and inflation rate. It provides forecasts in both future year and current year dollar values.

The financial plan compared the estimated revenue from existing and proposed funding sources that can reasonably be expected to be available for transportation uses, and the estimated costs of constructing, maintaining, and operating the total (existing plus planned) transportation system over the period of the plan. The estimated revenue by existing revenue source (local, State, Federal, and private) available for transportation projects was determined and shortfalls were identified. Proposed new revenues and/or revenue sources to cover shortfalls were investigated, including strategies for ensuring their availability for proposed investments. Existing and proposed revenues cover all forecasted capital, operating, and maintenance costs. All cost and revenue projections were based on the data reflecting the existing situation and historical trends.

The effort included a methodology for identifying costs of individual capital projects and ongoing maintenance and operations programs, along with acknowledging restrictions and requirements associated with each funding source. Revenue forecasts, life-cycle costs, and inflationary assumptions for projects and programs are developed for immediate (existing + committed), short-term (next 2023-2026 TIP) midterm (UTP years 2035), and long-term (2050) investments. Financial information and estimates of the risk of shortfalls are compared against the lifecycle expenses of the transportation system are available in one-year increments through the year 2035 and five-year increments through the year 2050.

Corpus Christi MPO staff created an easily understood document that summarizes available revenues and likely costs of construction, operations, and maintenance of projects and programs, taking into account inflation and

year of expenditure. This task established the revenue basis for fiscal constraint of both the MTP as well as the funding sources for the TIP. Using the same revenue projections for the long-range plan and the TIP ensures financial consistency between the plan and program.

#### SUBTASK 4.5 – DEVELOP, ANALYZE, AND REFINE SCENARIOS FOR ANALYSIS AND INVESTMENT

Scenario planning helps decision-makers prepare for an unknowable future by providing a framework for comparing and contrasting various forces. The FHWA Scenario Planning Guidebook provides assistance on using scenario planning. As part of scenario planning, stakeholders shape alternative descriptions or scenarios of what the future could look like. These alternative scenarios are then assessed using transportation models, sketch-planning tools, or other quantitative methods to estimate the differences between the alternative visions of the future on performance measures or indicators of desired outcomes. The Corpus Christi MPO staff worked with regional leaders and local economic groups to adopt unified data and methodologies for existing and future population for households and employment by type.

#### Work Performed and Status

The development of these implementation scenarios was not ready for development for the 2050 MTP in FY 2022 UPWP time period. Portions of the subtask were deferred and rolled over into the FY 2023 UPWP.

Corpus Christi MPO staff performed and completed the following:

- The Corpus Christi MPO staff discussed the general approach to developing scenarios from our newly
  acquired data and tools, using the existing 2045 MTP as a practice for future application in the 2050 MTP
  process.
- As projects are submitted and performance measures applied for the TIP and UTP processes, the Corpus
  Christi MPO staff revisits this scenario planning activity to work through the details of its implementation.
  Using 2045 MTP updates as well as TIP and UTP revised development processes is a way to practice the
  updating procedures and will continue through those processes and allow staff to understand the details
  of the effort leading toward implementation as part of the development of the 2050 MTP.

#### SUBTASK 4.6 – DOCUMENT PLAN AND PROCESSES

Transparency promotes accountability by providing the public with information about what the Corpus Christi MPO is doing. Corpus Christi MPO inventoried information currently available for download and foster the public's use of this information to increase public knowledge and promote public scrutiny of processes. The Corpus Christi MPO increased agency accountability and responsiveness; improved public knowledge of the agency and its operations and responded to needs and demands as identified through public consultation.

#### **Work Performed and Status**

This is an ongoing subtask that is developed as processes and updates occur to the 2045 MTP, FY 2021 – 2024 and FY 2023 – 2026 TIP documents, and the TxDOT UTP updates. As we developed our internal processes and meet with technical and citizen groups on these processes, we continued to document the activities and development of the portions of the documents to be used on the 2050 MTP and companion documents.

#### SUBTASK 4.7 – EVALUATE IMPACTS AND DEVELOP MITIGATION

Transportation planning requires examining the complex interactions among social, economic, environmental, and political factors and identifying tradeoffs, especially when different stakeholder groups have conflicting interests. The Corpus Christi MPO MTP is required to be consistent with local land-use development, historic preservation, and environmental protection plans in the region. The Corpus Christi MPO uses an 8-step collaborative mitigation planning. A consistent desire of the Corpus Christi MPO is to add value to other agencies' planning and mitigation efforts and reinforce their individual effectiveness. One crucial example is the Texas Parks and Wildlife Department's (TPWD) Texas Conservation Action Plan (TCAP) Gulf Coast Prairies and Marshes Ecoregion Handbook. This document includes a list of concerns and potential actions that could yield mutual benefit.

The Corpus Christi MPO staff supported regional planning to address mitigation of environmental, historic preservation, stormwater, and air quality impacts of transportation in the alignment of environmentally related performance measures.

#### Work Performed and Status

This activity is ongoing. The Corpus Christi MPO staff reviewed documents that were being developed by the partner agencies and participated in webinars and online public meetings of those groups. We saved updates to the plans in our draft 2050 MTP document library for future updates to our MTP and their documents over the next few years.

Corpus Christi MPO staff performed and completed the following:

- Interacted with local experts and agencies for Resiliency and Mitigation Planning assistance, HAZUS Model development
- Coordinated the regional effort for the development of the Regional Resiliency Plan
- Calibrated NOAAs' opeNSPECT to investigate potential water quality and runoff impacts from climate change
- Participated in the Coastal Bend Air Quality Partnership activities.
- Coordinated with the Pollution Prevention Partnership on federal reporting and regional outreach.
- Developed a narrative and data contributions to the annual Ozone Advance Report and other regional reporting documents as part of our MPO documents, specifically the DRAFT 2050 MTP sections and the FY 2021-2024 TIP Amendments and FY 2022 proposed Amendment and organization of the future FY 2023 and FY 2024 UPWP

# SUBTASK 4.8 – PLANNING AND PROGRAMMING PROCESS EVALUATION AND DEBRIEF

This effort provided analysis for lessons learned, best practices, and recommendations for future planning, training, and process development. As improvement actions are identified and addressed, it is important that any relevant plans, policies, and procedures are updated accordingly.

#### **Work Performed and Status**

Based on the After-Action Report, we identified strengths of planning and programming processes that should be maintained and built upon, as well as identifying potential areas of improvement. For each step in the MTP, UTP and TIP processes the following questions are answered by stakeholders and documented by MPO staff:

- What did we want to accomplish?
- How did this change as you progressed?
- What did we accomplish?
- Why was there a difference between what we wanted and what we did?
- What went well and why?
- What could have gone better?
- What advice would you give yourself if you were to go back to where you were at the start of the project?
- What should we have learned from this project a year from now?
- How do we adapt our processes for a better outcome OR how do we repeat our successes?

# **SUBTASK 4.9 – PROCESS DOCUMENTATION AND ENHANCEMENT**

Corpus Christi MPO staff reviewed efforts in support of regional transportation planning to address mitigation of stormwater impacts and air quality impacts of transportation in the alignment of environmentally related performance measures.

# **Work Performed and Status**

Corpus Christi MPO staff performed and completed the following:

- We participated in the various meetings of the Coastal Bend Air Quality Partnership (CBAQP) for air quality issues and reporting
- We reviewed local government agendas for transportation projects that had stormwater aspects of the projects and compared these to projects in our TIP and MTP that may be related to or in proximity to those projects.

TASK 4 - FUNDING SUMMARY (Through September 2022 – latest available from MPO's Fiscal Agent)

Funding Source	Amount Budgeted	dgeted Amount Expended Balance		% Expended
Transportation Planning Funds (PL 112 & FTA 5303)	\$114,000	\$34,822.75	\$79,177.25	30.55%
Local Planning Funds	\$0	\$0	\$0	0
FTA (Sec. 5309)	\$0	\$0	\$0	0
CMAQ	\$0	\$0	\$0	0
STP MM	\$0	\$0	\$0	0
TOTAL	\$114,000	\$34,822.75	\$79,177.25	30.55%

The Corpus Christi MPO staffing levels were 5 of 6 FTEs from in FY 2022.

# **TASK 5 - SPECIAL STUDIES**

Task 5 included an overall description of the Corpus Christi MPO's special studies activities. These included all subtasks listed in the UPWP with a description of each subtask product received or work accomplished and agency responsible. If work under a subtask was completed by a consultant/subcontractor, this is indicated. If an "amount expended" has exceeded or is below the "amount budgeted" by 25% or more, this must be noted in the task funding table and an explanation must be provided for the variance. For FY 2022 all tasks were completed within the budgetary limitations with no variance. Additional funds were rolled over to the FY 2023 UPWP tasks.

#### **TASK 5 – OVERALL DESCRIPTION**

Task 5.0 encompasses the special projects undertaken by the Corpus Christi MPO.

# **SUBTASK 5.1 – REGIONAL SAFETY PLANNING**

**OBJECTIVE** – A significant part of the Corpus Christi MPO responsibility is working with our State and local government partners to convert data into information that is useful for decision-making. From these efforts, the Corpus Christi MPO identified opportunity areas as they relate to collaborating with our State and local government partners. This subtask builds upon and enhances current transportation planning efforts, especially safety planning efforts, related to data, analysis, and project selection, with a focus on:

- Data visualization: Made data analysis and insights accessible to policy-makers and project implementers through clear, compelling data visualizations.
- Data integration: Integrated existing databases and new data sources to answer safety questions.
- Predictive insights: Used advanced analytic techniques to identify risk patterns and develop insights that anticipate and mitigate safety risks to reduce injuries and fatalities.

#### Work Performed and Status

Corpus Christi MPO staff cancelled this project previously and carried over the funds for the FY 2021 - FY 2022 UPWP. For FY 2022, the MPO reviewed and worked with partners to acquire the TxDOT-purchased INRIX data for Texas MPOs' to use. Aspects of this proposed effort were combined into the Corpus Christi MPO's efforts with the future updates to the 2045 MTP and the CMP.

#### SUBTASK 5.2 – RESILIENCE AND DURABILITY TO EXTREME WEATHER PILOT PROJECT

The separate FHWA grant funds continued to support design work by a consultant for a nature-based solution to enhance the resiliency to extreme weather of Laguna Shores Road along the western shore of the Laguna Madre.

#### Work Performed and Status

The City of Corpus Christi decided to remove the resiliency project from their Laguna Shores Road project. No further activities will be conducted by the Corpus Christi MPO for this project.

**TASK 5.0 – FUNDING SUMMARY** 

Funding Source	Amount Budgeted	Amount Expended	Balance	% Expended
Transportation Planning Funds (PL 112 & FTA 5303)	\$40,000	\$23,783.82	\$16,216.18	59.46%
FHWA Resiliency Pilot Grant*	\$0	\$0	\$0	0
Local Planning Funds	\$0	\$0	\$0	0
FTA (Sec. 5309)	\$0	\$0	\$0	0
CMAQ	\$0	\$0	\$0	0
STP MM	\$0	\$0	\$0	0
TOTAL	\$40,000	\$23,783.82	\$16,216.18	59.46%

# **BUDGET SUMMARY**

The following table shows a recap of the FY 2022 funding amounts budgeted, expended, the remaining balance and the total percent (%) expended. A "budget summary" table is provided for each funding source identified in the UPWP and repeated in the APER.

# TOTAL TRANSPORTATION PLANNING FUNDS (TPF) BUDGETED AND EXPENDED FOR FY 2022

UPWP Task	Amount Budgeted	Amount Expended	Balance	% Expended
1.0	\$655,000 <sup>(2)</sup>	\$451,942.13	\$203,057.87	69%
2.0	\$143,000	\$174,964.80	\$(31,964.80)	122.35%
3.0	\$181,000	\$192,030.25	\$(11,030.25)	106.09%
4.0	\$114,000	\$34,822.75	\$79,177.25	30.55%
5.0	\$40,000	\$23,783.82	\$16,216.18	59.46%
TOTAL	\$1,133,000	\$877,543.75	\$255,456.25	77.45%

FTA (Sec. 5307) Funds Budgeted and Expended for FY 2022

UPWP Task	Amount Budgeted	Amount Expended	Balance	% Expended
1.0	0	0	0	0
2.0	0	0	0	0
3.0	0	0	0	0
4.0	0	0	0	0
5.0	0	0	0	0
TOTAL	\$0	\$0	\$0	0 %

CMAQ Funds
Budgeted and Expended for FY 2022

UPWP Task	Amount Budgeted	Amount Expended	Balance	% Expended
1.0	0	0	0	0
2.0	0	0	0	0
3.0	0	0	0	0
4.0	0	0	0	0
5.0	0	0	0	0
TOTAL	\$ 0	\$ 0	\$0	0 %

# STP – MM Funds Budgeted and Expended for FY 2022

UPWP Task	Amount Budgeted	Amount Expended	Balance	% Expended
1.0	0	0	0	0
2.0	0	0	0	0
3.0	0	0	0	0
4.0	0	0	0	0
5.0	\$ 0	\$ 0	\$ 0	0 %