

CHAPTER 13 – MITIGATION AND MONITORING

Cover page: Transportation planning and decision making, including project selection, must integrate and coordinate land use, water quality, and natural resource concerns.

CHAPTER 13

The Corpus Christi MPO aspires to being as deliberate in developing coordinated and collaborative mitigation activities as we are in developing transportation projects. With this in mind, the Corpus Christi MPO collaborates 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.

All types of agencies in the Corpus Christi MPO recognize that preserving the high quality of life in the Corpus Christi MPO region requires maintaining or enhancing communities and ecosystems while also accommodating growth and development. The Port of Corpus Christi as an example states on its website:

“The Environmental Policy is one of the strategic imperatives that will be considered and integrated into decisions related to the development of infrastructure or the operations of Port facilities, supporting the Port of Corpus Christi vision To Be the Energy Port of the Americas and its mission of Leveraging Commerce to Drive Prosperity for the Port, its stakeholders, and the Community, Region, State, and Nation.”

In the context of the metropolitan transportation plan, mitigation is broad strategies, policies, programs, and actions to the human and natural environments. The resources identified in the Texas Conservation Action Plan (TCAP); Gulf Coast Prairies and Marshes Handbook summarize general natural environmental issues related to potential direct, indirect, or cumulative impacts of transportation investments within the region. As stated in the TCAP, *“The Texas gulf coast is one of the most ecologically complex and biologically diverse regions of the state.”*

In October 2020, the US Army Corps of Engineers, in partnership with the Texas General Land Office (GLO), began the **Coastal Texas Protection and Restoration Feasibility Study** (Coastal Texas Study) to determine the feasibility of alternatives to enhance, restore, and sustain the environment, economy, and culture of the Texas coast.

In 2021, the Coastal Bend Bays & Estuaries Program, with planning and facilitation support from the Mission-Aransas National Estuarine Research Reserve and funding from the Texas Commission on Environmental Quality, released the **Protecting the Coastal Bend Bays and Estuaries Plan**.

In 2023, the Texas General Land Office completed the **“Beneficial Dredge Use Master Plan”** process. This plan developed a framework for conserving and enhancing the natural and manufactured coastal environment and to adapt to existing and expected vulnerabilities and hazards. The objectives of this plan are to create and restore degrading coastal habitats by establishing sites for placement of dredged material placement areas (DMPAs).

There is only one federal source of funding directed by the Corpus Christi MPO Transportation Policy Committee (TPC) that can fund mitigation activities: Category 7- Metropolitan Mobility and Rehabilitation funds. Local, state, and federal officials have access to other funds, including the Beneficial Use planning.

FEDERAL REQUIREMENT

According 23 CFR Part 450.322, the metropolitan transportation plan shall, at a minimum, include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation. The MPO shall consult, as appropriate, with State and local agencies responsible for land use

management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve a comparison of transportation plans with State conservation plans or maps or comparison of transportation plans to inventories of natural or historic resources.

The federal requirement to incorporate mitigation into regional transportation plans means that this effort is not a one-time event that results in a single discrete output. Instead, it requires a continuous, cooperative and comprehensive process that is responsive to the momentum and cyclical nature of needs and priorities. Therefore, the data gathering, and public sector capacity-building activities should focus on analytical, participatory, and political requirements that capture lessons from effective processes. This requires building inter-agency relationships and building and maintaining a complete database of information.

FEDERAL OBJECTIVES

The IJA/BIL continued the requirement to have consistent consideration of environmental issues at all stages of the transportation project development process, especially during long-range planning. Environmental mitigation strategies and activities are regional in scope and may not address potential project-level impacts. Changes in the IJA/BIL do not alter how the National Environmental Policy Act relates to a long-range transportation plan. The requirements to the precursors of the IJA/BIL: FAST Act, MAP-21 and SAFETEA-LU, have been incorporated into the IJAFast Act. The approach to the environmental principles contained in the IJA/BIL that USDOT will adhere to were followed when developing this MTP.

PLANNING FOR MITIGATION

The Corpus Christi MPO uses an 8-step collaborative mitigation planning process described in the Corpus Christi MPOs document ***Avoid, Minimize, Compensate: Infrastructure Mitigation Policy***, found as Appendix O.

Transportation planning examines the complex interactions among social, economic, environmental, and political factors and identifies tradeoffs, especially when different stakeholder groups have conflicting interests. This Policy, when used in conjunction with the Corpus Christi MPOs document *Protecting Tomorrow: The Roles of Private For-Profit and Nonprofit Organizations in Mitigating Resource Impacts of Infrastructure Projects*, found as Appendix M identifies and adapts to conditions based on modeling, monitoring, and other research and analysis efforts. The Corpus Christi MPO Mitigation Planning Protocol is presented in Appendix Q. A consistent desire of these is to add value to other agencies' planning and mitigation efforts and reinforce their effectiveness. One such planning and mitigation effort is described by the Texas Parks and Wildlife Department (TPWD) in their Texas Conservation Action Plan (TCAP) Gulf Coast Prairies and Marshes Ecoregion Handbook. It includes a list of concerns from previous dealings with transportation agencies, including MPOs, along with a list of potential actions that could yield mutual benefit. The concerns listed in the TCAP include:

- Texas Department of Transportation coordinates with TPWD regarding potential natural resources impacts to listed species. However, during construction and mitigation there is little accommodation for sensitive habitats unless those features are federally protected. State-listed species habitats, SGCN, rare communities and the habitats on which they rely are for the most part unprotected. The transportation improvements proposed under regional upgrades of existing facilities and new construction may create barriers to fish and wildlife resources' daily and seasonal movements through armored culverts and concrete drainage ways, vectors and opportunities for non-native species invasions, water quality impacts through stormwater runoff, loss of non-jurisdictional wetlands, and import riparian, bottomland, prairie and savanna habitats that are not protected under regulation. In addition to these larger facilities, local connection transportation projects may also contribute to
- The same kinds of losses may require even less coordination regarding environmental impacts from planning to implementation if no federal money is used.
- Mitigation for these large primary and smaller connector projects typically does not replace ecological function where it is lost. Non-native invasive grasses are used in reclamation, non-native trees are planted in sites where prairie is the desired ecological condition, and riparian areas are allowed to recolonize without direct restoration to prevent invasive species.

The TCAP also lists a possible collaborative path for agencies in the region, which is harmonious with the Corpus Christi MPO Avoid, Minimize, Compensate: Infrastructure Mitigation Policy:

- Focus outreach to core urban Metropolitan Planning Organizations, Councils of Government, Regional Transportation authorities, International Boundary Water Commission and planning entities which include urban and emerging / outlying communities so they consider SGCN, rare communities and habitats, such as native coastal prairies, riparian areas to floodplain extents, and all wetland features, as part of their first-round constraint process in development zoning and permitting.
- Large-scale conservation benefits could be realized by mapping existing conservation lands and practices, reviewing opportunities to share resources and improve land management through shared guidance, and identifying landowners and sites which could benefit landscape and conservation management connectivity in the long-term through landowner incentive programs.
- Identify key areas for the restoration and protection of coastal prairie, riparian buffers, and streamside management zones, thorn scrub corridors, freshwater wetlands and marsh restoration, and connectivity in a network of managed lands (public and private) throughout the region.
- Establish a regional public lands management cooperative to evaluate conservation effectiveness on sites and the connectivity of the landscape, identify restoration needs and sites, invasive species removal priorities, trail development and recreation planning improvement, and management practice improvement opportunities.
- It would be helpful to have large areas identified where mitigation dollars would best be spent to offset particular types of impacts in the region: wetlands, water diversions, prairie loss, riparian loss. A network of potential areas in a north-south trajectory in the region may be most helpful to create “stepping stone” prairie and riparian area connectivity, but sites should be large enough to function sustainably. Mitigation banking could be another type of landowner incentive.

The Corpus Christi MPO also reviewed Texas' Statewide Historic Preservation Plan. The Corpus Christi MPO will participate in the update to this plan and coordinate with the Nueces and San Patricio County Historical Commissions.

MONITORING REGIONAL INDICATORS

Using a common set of performance measures, or indicators, among agencies makes those indicators much more meaningful and useful. These measures should focus on the current status and on-going trends of resources. It is imperative that these indicators are developed cooperatively with partner agencies. Monitoring changes in key indicators not only provides information on whether a strategy or plan is delivering desired outcomes, but also assists in the early identification of unintended impacts.

This plan recognizes that transportation is not a stand-alone system but must be integrated with other economic, cultural, and ecological systems. Some of the relevant local and regional projects in the Corpus Christi MPO region are identified in the three appendices related to Monitoring and Mitigation:

- Avoid, Minimize, Compensate: Infrastructure Mitigation Policy and Implementation in Texas.
- Protecting Tomorrow: The Roles of Private for Profit and Nonprofit Organizations in Mitigating Resource Impacts of Infrastructure Projects.
- Corpus Christi Metropolitan Planning Organization Mitigation Planning Protocol.

CONTEXT-SENSITIVE SOLUTIONS

Context Sensitive Solutions are a different way to approach the planning and design of transportation projects. It is a process that balances the competing needs of many stakeholders from the earliest stages of project development. It is also flexible in the application of design controls, guidelines, and standards to design and construct a facility that is safe for all users, regardless of the mode of travel they choose. Applying Context Sensitive Solutions to the planning and design of a transportation project can make the difference between a successful project valued by the community and an embattled project that could take years to complete. There are many definitions of Context Sensitive Solutions, but they share a common set of tenets:

- Balance safety, mobility, community, and environmental goals in all projects.

- Involve the public and stakeholders early and continuously throughout the planning and project development process.
- Use an interdisciplinary team tailored to project needs.
- Address all modes of travel.
- Apply flexibility inherent in design standards.
- Incorporate aesthetics as an integral part of good design.

An effective Context Sensitive Solutions approach to transportation planning and project development will typically include:

- Understanding the purpose of and need for the project.
- Stakeholder involvement at critical points.
- Interdisciplinary team approach to planning and design.
- Objective evaluation of a full range of alternatives.
- Attention to community values and qualities, including environment, scenic, aesthetic, historic, and natural resources.

The Corpus Christi MPO will work to implement Context Sensitive Solutions concepts at the long-range plan and transportation improvement program levels in the Corpus Christi MPO region.

SUMMARY

Projects and policies in the 2045 MTP Update could significantly impact on the environment if they are not managed properly. The cumulative impacts to the region are significant and warrant a well-reasoned plan to remediate the social, economic, and ecological impacts. The Corpus Christi Regional Economic Development Corporation states:

“Promoting and recruiting new industry while also promoting and protecting our natural resources is a commitment to the future of the area that we take seriously.”

Impact prevention and mitigation strategies must be fully evaluated to prevent as much harm as possible during the construction and operation of new roads. Some possible mitigation effects for the construction of new roads is to ensure that all construction is done in a way that avoids and minimizes harm. After these efforts have been done, further efforts to mitigate and remediate past harms may also be necessary.

It is also important to ensure that regulations are followed. Some stricter policies should be considered for implementation. Alternative routes for new roads could be considered to minimize the effect on the environment—for example, not building near impaired streams or wetlands. Also, policies could be created, and more funding made available for alternative forms of transportation which would reduce congestion and the need for additional lanes. These ideas have been discussed in previous sections.

A more fundamental issue is the high amount of development occurring in the fringe areas of the region, which may have many significant effects on the environment and the region in the future. More compact development with less sprawl will protect the region's natural environment and create a host of other benefits.

Many of the projects in the transportation plan involve repairing or making improvements on already existing roads, and problems such as habitat fragmentation have already occurred. However, construction itself has an effect, and the increase in roadway area has a significant effect on the regional environment.

The overall intent of this section is to offer recommendations on how to maintain the existing high quality of the natural landscape while accommodating growth and development. Implementation of these recommendations will have social and economic costs and benefits and will attempt to:

- Meet the needs of the present without compromising the quality of life in future generations.
- Maintain economic growth while minimizing air and water pollution, repairing environmental damages of the past, producing less waste, and extending opportunities to live in a pleasant and healthy environment.
- Meet human needs by maintaining a balance between development, social equality, ecology, and economics.

This requires taking a regional perspective by looking at past trends, current activities, and how future activities might affect the region. By maintaining a regional perspective, it is easier to determine the direct, indirect, and cumulative impacts of existing and proposed projects.

Implementation of the recommendations in this plan will be accomplished through the recommended use of policies and strategies that target the unique problems throughout the planning region.

Implementation of the recommendations could require greater enforcement and development and refinement of new and existing regulations.