

RESTORE Council Proposal Document

General Information

Proposal Sponsor: Texas Commission on Environmental Quality (TCEQ)

Title:

Texas Land Acquisition Program for Coastal Conservation

Project Abstract:

Texas, through the Texas Commission on Environmental Quality, is requesting \$31.8M in Council-Selected Restoration Component funding for the proposed Texas Land Acquisition Program for Coastal Conservation. This would include \$2,067,000 in planning and project management funds as FPL Category 1, as well as a separate \$29,733,000 implementation component as an FPL Category 2 priority for potential funding. The program will support the primary RESTORE Comprehensive Plan goal to restore and conserve habitat through activities to acquire large, high-quality coastal zone properties in Texas. Locations will be selected on the basis of greatest value to the coastal environment now and in the future considering the pressures of environmental change and development. Targeted habitats will include urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. Potential partners for the program may include The Nature Conservancy, Texas Parks and Wildlife Department, Galveston Bay Foundation, Coastal Bend Bays & Estuaries Program, as well as other possible state and local Governments. The program will utilize specified criteria for selecting projects that were identified earlier through public meetings and as part of a stakeholder process.

This program will conserve valuable land as habitat and provide natural buffers to flooding and erosion, decreasing the need for habitat destroying hard engineering projects while providing valuable ecosystem services. Program duration is expected to be 4 years.

FPL Category: Cat1: Planning/ Cat2: Implementation

Activity Type: Program

Program: Texas Land Acquisition Program for Coastal Conservation

Co-sponsoring Agency(ies): N/A

Is this a construction project?:

No

RESTORE Act Priority Criteria:

(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and

coastal wetlands of the Gulf Coast region.

Priority Criteria Justification:

This program will meet three of the RESTORE Act Priority Criteria:

1. Projected to make the greatest contribution to restoring and protecting natural resources. Through large-scale and strategic land acquisitions, this program will not only conserve present habitat, but very importantly, will preserve space for future buffers and habitat as the natural systems evolve and adjacent human pressures continue to increase.

2. Large-scale projects and programs. This is a large-scale program with individual land acquisition projects ranging in size from 100's to 1,000's of acres. The combined benefits of the projects within the program will increase the resiliency and environmental quality of the Texas coast by accommodating natural buffers to erosion, storm surge, flooding, and sea level rise while providing habitat for the future.

3. Contained in existing Gulf Coast State Comprehensive Plans. The prospective projects in this program were evaluated by the Texas FPL3b preproposal selection process and most were sourced from the 2019 Texas Coastal Resiliency Master Plan (TGLO, 2019), the state comprehensive coastal plan for Texas. In general, land acquisition projects were scored highly by the TCRMP Technical Advisory Committee (TAC) for addressing issues of concern along the coast. The TAC was comprised of coastal experts from state and federal agencies, NGOs, local governments, academics, and engineering firms (TGLO, 2019).

Project Duration (in years): 4

Goals

Primary Comprehensive Plan Goal:
Restore and Conserve Habitat

Primary Comprehensive Plan Objective:
Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:
N/A

Secondary Comprehensive Plan Goals:
N/A

PF Restoration Technique(s):
Protect and conserve coastal, estuarine, and riparian habitats: Land acquisition

Location

Location:

Texas Coastal Zone locations selected for quality of habitat, habitat vulnerability, critical location, and potential for acquisition

HUC8 Watershed(s):

Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(Buffalo-San Jacinto)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(East Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(West Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Austin-Oyster)
Texas-Gulf Region(Lower Colorado-San Bernard Coastal) - San Bernard Coastal(San Bernard)
Texas-Gulf Region(Central Texas Coastal) - San Antonio(Lower San Antonio)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(West Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East San Antonio Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Aransas Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Mission)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(South Laguna Madre)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Sabine Lake)

State(s):

Texas

County/Parish(es):

TX - Aransas
TX - Brazoria
TX - Calhoun
TX - Cameron
TX - Chambers
TX - Galveston
TX - Harris
TX - Jefferson
TX - Matagorda
TX - Refugio

Congressional District(s):

TX - 27
TX - 14
TX - 29
TX - 36
TX - 34

Narratives

Introduction and Overview:

This program aims to acquire large coastal zone properties or easement purchases to promote long-term habitat management and high-quality coastal habitat along the Texas coast. Selection will be based on environmental data and expert stakeholder input for areas that will provide valuable long-term environmental benefits for the Texas coast. Ownership of the acquired land may be held by government or a non-governmental organization depending on the greatest advantage for acquisition, leveraging, and conservation. This program conforms to the RESTORE Council's FPL3 Planning Framework by adhering to the priority to restore and conserve habitat, while protecting and conserving coastal, estuarine, and riparian habitats. This program will also advance the commitments set forth in the 2016 Comprehensive Plan Update by using the best available science for land acquisition, developing a monitoring and data management framework, and defining metrics of success of the land acquisition projects. The total cost of this program and the amount of Council Selected Restoration Component funding being requested is \$31.8 million over 4 years. The actual cost of individual acquisitions may vary based on property location, size, and willingness of sellers. Because of this, the program is scalable and allows for reduction in property size based on funding granted. The timeline of this program will also depend on the availability of land and the willingness of sellers. Potential partners for this program include The Nature Conservancy (TNC), Texas Parks and Wildlife Department (TPWD), Galveston Bay Foundation (GBF), Coastal Bend Bays Estuary Program (CBBEP), as well as other federal, state and local governments.

The Texas coast is dynamic and constantly changing via natural processes and human activity. The coast supports a wide variety of critical habitat, such as nurseries for fish, birds, oysters, and other wildlife. It is also responsible for a large proportion of the Texas economy and population and continues to grow at a higher rate than inland areas. This makes the Texas coast vulnerable to many stressors. As development continues to increase, the critical habitats and ecosystems are being diminished which adds to the vulnerability of natural and human environments. Habitat types that are found along the coast (marshes, flats, seagrasses, prairies, etc.) not only provide valuable resources, they also serve as protection from processes such as sea level rise, hurricanes, and flooding (Ruckelshaus et al., 2016). Losing these natural buffers to coastal development increases the exposure of communities to extreme events. Conservation of coastal land will protect key areas from expanding development and allow the environment to adjust to long-term changes. The funds requested in this program are for acquisition of coastal land and not for land modifications. The long-term conservation benefits will also enable the restoration of degraded areas. Acquisition of these lands will have indirect benefits that include protection of adjacent estuaries, improved water quality, and enhanced coastal resiliency.

Types of coastal land acquisitions being considered as part of a larger list of potential properties that have been vetted include Armand Bayou, Lower Laguna Madre, Texas Point National Wildlife Refuge (NWR), and Columbia Bottomlands. These locations along the Texas coast provide valuable habitats and resources of coastal lands, and they support a diverse and abundant array of plants and animals. Acquisition of the undeveloped riparian forest floodplains of Armand Bayou would prevent development in high risk areas and protect riparian habitat and ecosystem functions. The pressures facing this ecosystem include subsidence, changes in wetland vegetation, and drainage, largely due to human disturbances (McFarlane, 1991). These issues have also resulted in degraded water quality in the area as the mostly rural area has transitioned into residential development. Lower Laguna Madre includes tidal wetlands, uplands, resacas, saline coastal prairies, thorn scrub, and barrier islands that add significant value to the conservation landscape. The Lower Laguna Madre system is an especially critical habitat for nesting waterfowl including Snowy and Wilson's plovers, which are threatened by development (Hood and Dinsmore, 2007). The conservation of Texas Point NWR is important to migratory and wintering waterfowl and would continue to provide a storm buffer for

neighboring communities, thereby preserving coastal resiliency. Columbia Bottomlands holds a forest that has been identified as a priority habitat for hundreds of species of migratory birds, as well as marsh and coastal wetland habitat. Once spanning over 283,000 ha, the Columbia Bottomlands has been reduced by more than 25% (Rosen et al., 2008). Acquiring this land would protect the remaining acreage and the habitats they encompass. The scope of this program is not limited to these locations, and other properties along the Texas coast will be considered in the project selection phase. This program aims to acquire the most beneficial land, both in acreage and in resources provided.

Years of ecological degradation from human activity and degradation from events such as the 2010 Deepwater Horizon oil spill have increased the vulnerability of the environment and the resources provided by the region (Samiappan et al., 2019). Development is an added stressor to the coastal zone, and by purchasing these lands that potential degradation can be avoided. Conserving this land will protect the valuable resources within the habitats encompassed. In general, the environmental benefits provided by this program span from protecting habitats and conserving biodiversity to improving water quality and storm buffering. The direct benefits to coastal communities by preserving land include reducing erosion and flooding, as well as providing additional economic benefits and recreation. It is important to be proactive when considering habitat loss, and this program aims to preserve the existing environment rather than attempt to replace the resources once they are lost, both in terms of costs and feasibility.

Proposed Methods :

Funds may be set aside for immediate short-term management and maintenance to protect resources. This program will not alter the landscape or the environment of the land purchased, instead it will protect the land from future negative alterations due to development. In addition, acquisition of the valuable coastal properties may provide areas for possible future restoration or other beneficial activities that can increase the conservation footprint of the project.

This program will develop a process for selecting properties for acquisition that builds on Texas' stakeholder-driven process for developing the Planning Framework and selecting preliminary projects for FPL3 consideration. During this earlier work, county governments, Non-Government Organizations (NGO), and a workgroup made up of Texas Natural Resource Damage Assessment (NRDA) staff and Texas Coastal Resiliency Master Plan (TCRMP) representatives submitted 38 projects for FPL3 consideration. Coastal experts, Harte Research Institute (HRI) staff, and TCEQ staff reviewed the projects and selected 23 for public comment. Among these 23 projects, there are 10 projects that include land acquisition (see map), which this program will consider for implementation. Land acquisitions may be in different types of settings and habitats including urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. The selection process will consider what provides the greatest value to the coastal environment now and in the future as the human and natural landscapes continue to evolve. The program will explore the use of the previously funded RESTORE Council FPL 1 Strategic Conservation Assessment for Gulf Lands (SCA) tool (<https://sca-natureserve.hub.arcgis.com/>) as a valuable resource to augment the process of land selection. Additional natural and human environmental data and analyses will be required and continued input from our stakeholders will be crucial to make the program a success. To ensure success of this program, the Texas Commission on Environmental Quality (TCEQ) as the program sponsor will reach out to the state, federal, and NGO groups who have collaborated on developing Texas' FPL3b program to this point. The combined expertise and experience of this group in coastal land conservation (including experience gained from FPL 1 land acquisitions) will be a significant resource to the program.

Once an area has been targeted for acquisition the following general steps will be required: (1) Complete due diligence including appraisal, environmental assessment, survey and title search to

ensure that the purchase costs are consistent with market values, that the property is not contaminated, property boundaries are known, and that the tracts' titles are free and clear of objectionable encumbrances; (2) Secure the land or easement with a purchase contract; and (3) Convey the property for long-term management. Determining if a property is conveyed to a public or a private non-profit entity will entail consideration of any potential advantages of private land conservation and the objectives of the acquisition (Drescher and Brenner, 2018). Given documented success of previous land acquisition projects in Texas and subsequent transfer of those tracts to the project partners, the project has a high likelihood of success.

Environmental Benefits:

Industry and population growth along the Texas coast continue to place pressures on remaining open spaces and directly impacts ecosystems through channelization, subsidence, saltwater intrusion, and erosion of critical estuarine shore environments. These impacts increase the level of storm surge vulnerability of economically important industries. Conservation of tracts in these areas would not only directly ensure long-term ecological benefits, it would also indirectly protect industries and coastal communities increasing their resiliency (Czech, 2004). A wide array of ecosystem services would be preserved as recognized by Texas coastal stakeholders in an earlier study (Hutchison et al., 2015). The cost to acquire properties for the purpose of habitat conservation is significantly less than what the cost would be to attempt to restore or replace the functions of the environments once they are degraded or lost completely (Calnan, 1995).

The 2019 TCRMP Technical Advisory Committee (Texas General Land Office, 2019) consistently scored land acquisition projects highly for addressing a variety of environmental issues of concern including (1) altered degraded or lost habitat, (2) existing and future coastal storm damage, (3) coastal flood damage, (4) impact on water quality and quantity, and (5) impact on coastal resources. The low-lying, gently sloping, subsiding, and hurricane prone Texas coastal plain continues to attract more people and economic activity, which is converting natural environments to built environments and taking the space for natural buffers and future environmental transitions. From 1996 to 2010, NOAA C-CAP satellite data show an increase in the amount of developed land in the Texas coastal zone of 42,334 acres (66 square miles) (National Oceanic and Atmospheric Administration, 1996; National Oceanic and Atmospheric Administration, 2010). Furthermore, projections of future urban expansion show an increase of urban land cover of 256,625 acres (401 square miles) from 2010 to 2050 just in the Galveston Bay region (Sohl et al., 2018). The strategic acquisition of land in the coastal zone of Texas will provide long-term conservation of environments, which impart ecosystem services with market and non-market value (Barbier et al., 2011). Furthermore, secondary benefits may be realized in better water quality and protection of adjacent areas. Some land acquisitions may also serve to provide areas where the transition of coastal environments can occur as sea level rises, thus offsetting the loss of intertidal environments (Texas General Land Office, 2019).

Metrics:

Metric Title: HC001 : Conservation easements - Acres protected under easement

Target: TBD

Narrative: This program will purchase large conservation easements along the Texas coast to preserve the natural environment. Long-term success can be measured by ensuring the acquisition of the most valuable land while also considering the quantity of acres protected under long-term conservation easement. Monitoring of the acquired acres will provide consistent measures of success.

Metric Title: HC003 : Land acquisition - Acres acquired in fee

Target: TBD

Narrative: The goal of this program is to acquire large coastal zone properties to give ownership of the land to federal, state, or local government or a non-government organization. A measure of success for the program would be to maximize the acres acquired with the funds granted. The value of the land in consideration will also be examined to ensure the resources provided by the properties are maximized. More valuable acreage acquired through this program would result in more conservation of the Texas coast

Risk and Uncertainties:

Because no physical alterations will be performed on acquired land under this program, risks associated with construction or alterations are low. A primary risk and uncertainty, however, involves finding willing sellers of land that meets program objectives. Land prices are an uncertainty as well and may cause the program to find other properties if environmental objectives are not achievable with smaller purchases. Some large conservation purchases have been made in recent years, however, and this may help bring other willing sellers to the table.

While changing real estate prices are a risk, Texas will draw on its experience with successful acquisitions from the Matagorda Bay System Priority Landscape Conservation project from the initial FPL to find willing sellers and tracts that are cost effective. Land prices along the Texas coast are impacted by economic growth and nearby development. It is expected that price per acre will vary greatly for the acquisitions in this program depending on the specific conservation goals they are designed to achieve (Czech, 2002). The program will address this uncertainty through a stakeholder and data-enriched selection process to weigh cost and conservation benefits.

Tropical storms and sea level rise present a threat to the acquisition of land, however the proven record of success of similar strategies and techniques with a significant duration shows that these risks can be overcome in the long term (Samiappan et al., 2019). While there are properties being considered for acquisition that have a relatively high risk of erosion and land loss, they do offer critical habitats and areas of environmental significance. These factors will be taken into consideration when finalizing locations, and when acquisition sites are selected, a detailed risk mitigation strategy will be included. Taking steps to prevent future development of the acquired tracts will help mitigate the risks associated with sea level rise, subsidence, and storms (Ferreira et al., 2014). Monitoring will take place and if substantial negative changes occur in the acquired properties, restoration practices may be enacted.

Long-term environmental risks will vary based on individual land acquisition sites, but all Texas coastal lands are vulnerable to coastal flooding, storms, and relative sea level rise. The potential impacts of relative sea level rise on acquired land include increased erosion and inundation, migration and submergence of coastal environments, alterations in freshwater inflows, and increased frequency, duration and elevation of storm surge flooding (Cahoon et al., 2006; Church et al., 2013). Factors that influence how a landscape responds to sea level rise and flooding are regionally variable, including upland slope, local rates of subsidence, sediment supply, tide range, and the density of development in low-lying areas potentially restricting the upland migration of wetland habitats (White et al., 2002; Morton, 2003; White and Tremblay, 1995). Land cover change modeling completed for the Texas Coastal Resiliency Master Plan shows that wetland habitat survival and potential transitions due to relative sea level rise vary along the coast due to regional differences in the above-mentioned factors affecting vulnerability (TGLO, 2019). Storm surge modeling also shows regional variability in the extent and duration of flooding both on the present-day landscape and due to relative sea level rise. These regional variations will be considered when analyzing risks for each acquired property.

This program focuses on “preventative projects” that aim to prevent habitat and ecosystem losses from the above-mentioned risks, limiting the need for compensatory restoration actions. These

types of projects can provide high quality benefits in a cost-effective and timely manner (Chapman and Julius, 2005). Potential long-term risks still may arise due to a variety of factors. For example, a growing economy in areas surrounding the acquired land could lead to fragmentation of the vulnerable habitat, along with indirect pollution from adjacent locations (Czech, 2002). External risks such as those will also be considered when selecting land for acquisition.

Monitoring and Adaptive Management:

Project monitoring for this program will involve observations for providing information on (1) baseline environmental characterization, (2) environmental trends, and (3) to support adaptive management (NAS, 2017). Type of monitoring data will include biophysical and ecological observations of the conserved land and of adjacent areas to serve as reference sites (DWH-NRDA, 2017). Monitoring will occur on semiannual or annual bases for a minimum of two years following acquisition.

The land acquisition program will require long term monitoring to ensure the natural habitats of the acquired properties are being conserved and protected. Monitoring the area over the program duration will help determine if the areas are providing the expected benefits. Once the targeted tracts of land are purchased, ownership will be transferred to a government or non-government organization to help monitor the conservation of the environments. Methods of monitoring may include vegetation sampling, water quality testing, and land cover surveys (Calnan, 1995). Changes in habitat type, vegetation, and biodiversity will be monitored, as this program aims to conserve the current landscape and promote natural healthy changes. Over time, steps may be taken to promote further environmental conservation by removing invasive species or planting more native vegetation, however those actions are not within the scope of this program.

Data Management:

Data management for this program will make data publicly available thereby enhancing outcomes and future restoration efforts.

Planning data: During program planning, a variety of existing and newly acquired data will be gathered. Data in this category includes mostly geospatial data on land ownership, shoreline change rates, land cover, land use, infrastructure, elevation, and ecological data describing past and current environmental conditions and development.

Project implementation data: These data are needed for determining baseline conditions and are similar as planning data for specific properties. Detailed land survey data and photography may be included.

Post-project implementation data: These data are needed for monitoring ecological conditions and informing adaptive management actions. They include time series of biophysical observations similar to the planning and implementation data for understanding trends.

Program activities will identify data used. TCEQ and GRIIDC (Gibeaut, 2016) will work with data users to ensure pertinent data are shared when key activities end. GRIIDC is a well-known data repository designed to receive data from a variety of sources and from various scientific and engineering disciplines. GRIIDC will track, curate, and archive data in the GRIIDC repository and make it publicly discoverable and available. Metadata will follow the ISO 19115-2 standard and datasets will be reviewed for completeness and organization to enable reuse.

Collaboration:

Two Texas workgroups were established to provide input on coastal priorities: State & Federal Representatives and Non-Governmental Organizations. On-line and in-person meetings were held to discuss plans to develop Texas coastal priorities and to ensure the public's involvement. A survey was developed that asked for individual's coastal priorities. These surveys were available to the public and were also completed by members of the two work groups. Public meetings were conducted in three coastal cities for the public to present their issues and concerns. Information received from workgroup meetings, discussions with elected officials, public meetings and the surveys was used to develop a list of priorities to be included in the RESTORE Council's Planning Framework document. These efforts of collaboration will continue throughout the process to develop programs and projects. Work will continue with Texas representatives for NRDA/NFWF to consider leveraging opportunities.

Public Engagement, Outreach, and Education:

The decision to submit this program was based on many months of discussions with work groups and participation by the public. It began with discussions with the Texas representatives for NRDA & NFWF to identify programs/projects for FPL 3b. This identified list was shared with the two workgroups (State & Federal and NGOs) established for Bucket 2 planning purposes, for their review and comment. County judges in the coastal area also were given the opportunity to identify potential programs/projects for their areas. Using the information compiled as part of this process, a list of 23 projects were posted for public comment on the Texas RESTORE website. In addition, two public hearings were held in coastal cities. In reviewing the comments received, the timing to move forward with proposals, and in discussions with the Texas Governor's staff, it was determined that program rather than project specific proposals would be submitted. The development of the program proposals was done to ensure that projects posted for public comment could be considered in at least one of the program submissions. Much of the work has already been done to identify projects that could be funded within this program submission. The process to select FPL 3b grant recipients will include the requirement that projects will have to already been vetted by this process or through other public processes such as the GLO's Coastal Resiliency Master Plan, or NRDA & NFWF related activities. The criteria to select the specific projects would include, but not limited to, the following: addresses issues presented in the program proposal; amounts of funds available for the program; readiness; leveraging opportunities; scalability; risk/benefit ratio; and distribution of funds across the Texas coastline. Notification of the projects selected to receive grant funds will be posted on the Texas RESTORE website. This overall process, parts already completed and others to be completed after the program has been approved for FPL 3b funds, will ensure that the ultimate selection of projects for this program are not only consistent with the RESTORE Planning Framework document, but also reflect the ideas that were discussed by the work groups, the elected officials, the public and the Office of the Governor.

Leveraging:

Funds: TBD

Type:

Status:

Source Type:

Description: The expectation is that programs and/or projects that are ultimately selected for funding in Texas could likely include partnerships leveraging various funds, including RESTORE, NRDA and NFWF monies. In continuing discussions with NRDA, NFWF, county judges and NGOs, all parties have emphasized the need to leverage all DWH Oil spill associated funds, as well as other funds, and it is Texas' intent to consider leveraging as a criteria in selecting projects, including the recognition of previous projects and the potential for a new project to add to the cumulative impact to the area. NRDA, NFWF, NGOs and

RESTORE Texas have a history of acquiring land for conservation purposes and we expect for that trend to continue.

Environmental Compliance:

Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.

Bibliography:

Barbier, E.B., Hacker, S.D., Kennedy, C., Koch, E.W., Stier, A.C. and Silliman, B.R., 2011. The value of estuarine and coastal ecosystem services. *Ecological Monographs*, 81: 169-193. doi:10.1890/10-1510.1

Calnan, T. R., 1995. Coastal Division Texas General Land Office. A Coastal Wetlands Acquisition Plan For Texas. <https://tamug-ir.tdl.org/bitstream/handle/1969.3/25768/8709-Coastal%20Wetlands%20Acquisition%20Plan%20for%20Texas.pdf?sequence=1&isAllowed=y>

Cahoon, D.R., Hensel, P.F., Spencer, T., Reed, D.J., McKee, K.L., Saintilan, N., 2006. Coastal Wetland Vulnerability to Relative Sea-Level Rise: Wetland Elevation Trends and Process Controls, in: Verhoeven, P.D.J.T.A., Beltman, D.B., Bobbink, D.R., Whigham, D.D.F. (Eds.), *Wetlands and Natural Resource Management, Ecological Studies*. Springer Berlin Heidelberg, pp. 271–292.

Chapman, D.J. and Julius, B.E. (2005). The Use of Preventative Projects as Compensatory Restoration. *Journal of Coastal Resources* 40, 120-131.

Church, J.A., Clark, P.U., Cazenave, A., Gregory, J.M., Jevrejeva, S., Levermann, A., Merrifield, M.A., Milne, G.A., Nerem, R.S., Nunn, P.D., Payne, A.J., Pfeffer, W.T., Stammer, D., Unnikrishnan, A.S., 2013. Sea Level Change, in: Stocker, T.F., Qin, D., Plattner, G.-K., Tignor, M., Allen, S.K., Boschung, J., Nauels, A., Xia, Y., Bex, V., Midgley, P.M. (Eds.), *Climate Change, 2013. The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK/ New York, USA.

Czech, Brian., 2002. A Transdisciplinary Approach to Conservation Land Acquisition. *Conservation Biology* 16(6) 1488-1497.

Czech, B., 2004. Urbanization as a Threat to Biodiversity: Trophic Theory, Economic Geography and Implications for Conservation Land Acquisition. *Proceedings, Bengston, David N., tech. ed. 2005. Policies for managing urban growth and landscape change: a key to conservation in the 21st Century. Gen. Tech. Rep. NC-265. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 51 p.* https://www.nrs.fs.fed.us/pubs/gtr/gtr_nc265/gtr_nc265_008.pdf

Drescher, M. and Brenner, J.C., 2018. The practice and promise of private land conservation. *Ecology and Society* 23(2). <https://doi.org/10.5751/ES-10020-230203>

DWH-NRDA, 2017. Deepwater Horizon (DWH) Natural Resource Damage Assessment Trustees. Monitoring and Adaptive Management Procedures and Guidelines Manual Version 1.0. Appendix to the Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the DWH Oil Spill. December. Available: <http://www.gulfspillrestoration.noaa.gov/>.

Ferreira, C.M., Irish, J.L., and Olivera, F., 2014. Quantifying the potential impact of land cover changes due to sea-level rise on storm surge on lower Texas coast bays. *Coastal Engineering* 94: 102-111. <https://www.sciencedirect.com/science/article/pii/S037838391400163X>.

Gibeaut, J., 2016. Enabling data sharing through the Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC). *Oceanography* 29(3):33–37, <https://doi.org/10.5670/oceanog.2016.59>.

Hood, Sharyn L. and Dinsmore, Stephen J. 2007. The Influence of Habitat on Nest Survival of Snowy and Wilson's Plovers in the Lower Laguna Madre Region of Texas. *Studies in Avian Biology*, 34: 124-135.

Hutchison, L., P. Montagna, D.W. Yoskowitz, D. Scholz, and J. Tunnell. 2015. Stakeholder Perceptions of Coastal Habitat Ecosystem Services. *Estuaries and Coasts*. 38 S1: 67-80. DOI: 10.1007/s12237-013-9647-7

McFarlane, R.W., 1991. An Environmental Inventory of the Armand Bayou Coastal Preserve. Galveston Bay National Estuary Program. <file:///C:/Users/lilbr/Downloads/4253-Environmental%20Inventory%20of%20the%20Armand%20Bayou%20Coastal%20Preserve.pdf>

Morton, R.A., 2003. An overview of coastal land loss: with emphasis on the southeastern United States (Open-file Report). U.S. Geological Survey.

National Academies of Sciences, Engineering, and Medicine (NAS), 2017. Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico. Washington, DC: The National Academies Press. doi: 10.17226/23476.

National Oceanic and Atmospheric Administration, Office for Coastal Management. 2010. "2010 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. www.coast.noaa.gov/ccapftp.

National Oceanic and Atmospheric Administration, Office for Coastal Management. 1996. "1996 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. www.coast.noaa.gov/ccapftp.

Rosen, D.J., De Steven, D. and Lange, M.L., 2008. Conservation Strategies and Vegetation Characterization in the Columbia Bottomlands, and Under-recognized Southern Floodplain Forest Formation. *Natural Areas Journal* 28(1), 74-82. [https://doi.org/10.3375/0885-8608\(2008\)28\[74:CSAVCI\]2.0.CO;2](https://doi.org/10.3375/0885-8608(2008)28[74:CSAVCI]2.0.CO;2)

Ruckelshaus, M.H., Guannel, G., Arkema, K. Verutes, G., Griffin, R., Guerry, A., Silver, J., Faries, J., Brenner, J. and Rosenthal, A., 2016. Evaluating the Benefits of Green Infrastructure for Coastal Areas: Location, Location, Location. *Coastal Management*, 445, 504-516. DOI. <https://doi.org/10.1080/08920753.2016.1208882>

Samiappan, S., Shamaskin, A., Liu, J., Roberts, J., Linhoss, A., and Evans, K., 2019. Land Conservation in the Gulf of Mexico Region: A Comprehensive Review of Plans, Priorities, and Efforts. *Land* 8(5) 84. <https://doi.org/10.3390/land8050084>.

Sohl, T.L., Saylor, K.L., Bouchard, M.A., Reker, R.R., Freisz, A.M., Bennett, S.L., Sleeter, B.M., Sleeter, R.R., Wilson, T., Souldard, C., Knuppe, M., and Van Hofwegen, T. 2018. Conterminous United States Land Cover Projections - 1992 to 2100: U.S. Geological Survey data release, <https://doi.org/10.5066/P95AK9HP>.

GLO, 2019. Texas General Land Office (TGLO), 2019. Texas Coastal Resiliency Master Plan. Austin, Texas. <https://coastalstudy.texas.gov/resources/files/2019-coastal-master-plan.pdf>.

White, W.A., Morton, R.A., Holmes, C.W., 2002. A comparison of factors controlling sedimentation rates and wetland loss in fluvial-deltaic systems, Texas Gulf coast. *Geomorphology* 44, 47-66.

White, W.A., Tremblay, T.A., 1995. Submergence of wetlands as a result of human-induced

subsidence and faulting along the upper Texas Gulf coast. J. Coast. Res. 11, 788–807.

Budget

Project Budget Narrative:

The total requested for this program is \$31.8million. Of that amount, approximately \$30 million will be provided to sub-recipients to implement projects selected for this program. TCEQ estimates that it will require approximately \$1.8 million to support the following: administrative expenses (salary, indirect, travel, fringe, supplies, etc...); hosting & maintenance costs for the Texas RESTORE web site; and for a contract to provide technical assistance to TCEQ staff.

Category 1: \$2,067,000

Planning (1%) = \$318,000

Project Management (5.5%) = \$1,749,000

Category 2: \$29,733,000

Implementation (93.5%) = \$29,733,000

Data management and monitoring & adaptive managements costs are included in the implementation costs.

Total FPL 3 Project/Program Budget Request:

\$ 31,800,000.00

Estimated Percent Monitoring and Adaptive Management: 0 %

Estimated Percent Planning: 1 %

Estimated Percent Implementation: 93.5 %

Estimated Percent Project Management: 5.5 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 0 %

Is the Project Scalable?:

Yes

If yes, provide a short description regarding scalability.:

Land acquisition projects in this program may be reduced in number, size, or cost per acre according to available funding.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g.,title and date of document, permit number, weblink etc.)
National Environmental Policy Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Endangered Species Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
National Historic Preservation Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Magnuson-Stevens Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Fish and Wildlife Conservation Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Coastal Zone Management Act	No	Texas is working with the USDA and FWS and other applicable agencies on an

¹ Environmental Compliance documents available by request (restorecouncil@restorethegulf.gov).

		environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Coastal Barrier Resources Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Farmland Protection Policy Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Clean Water Act (Section 404)	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
River and Harbors Act (Section 10)	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Marine Protection, Research and Sanctuaries Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Marine Mammal Protection Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be

		provided prior to the public release of the draft FPL3b.
National Marine Sanctuaries Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Migratory Bird Treaty Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Bald and Golden Eagle Protection Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Clean Air Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Other Applicable Environmental Compliance Laws or Regulations	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.

Maps, Charts, Figures

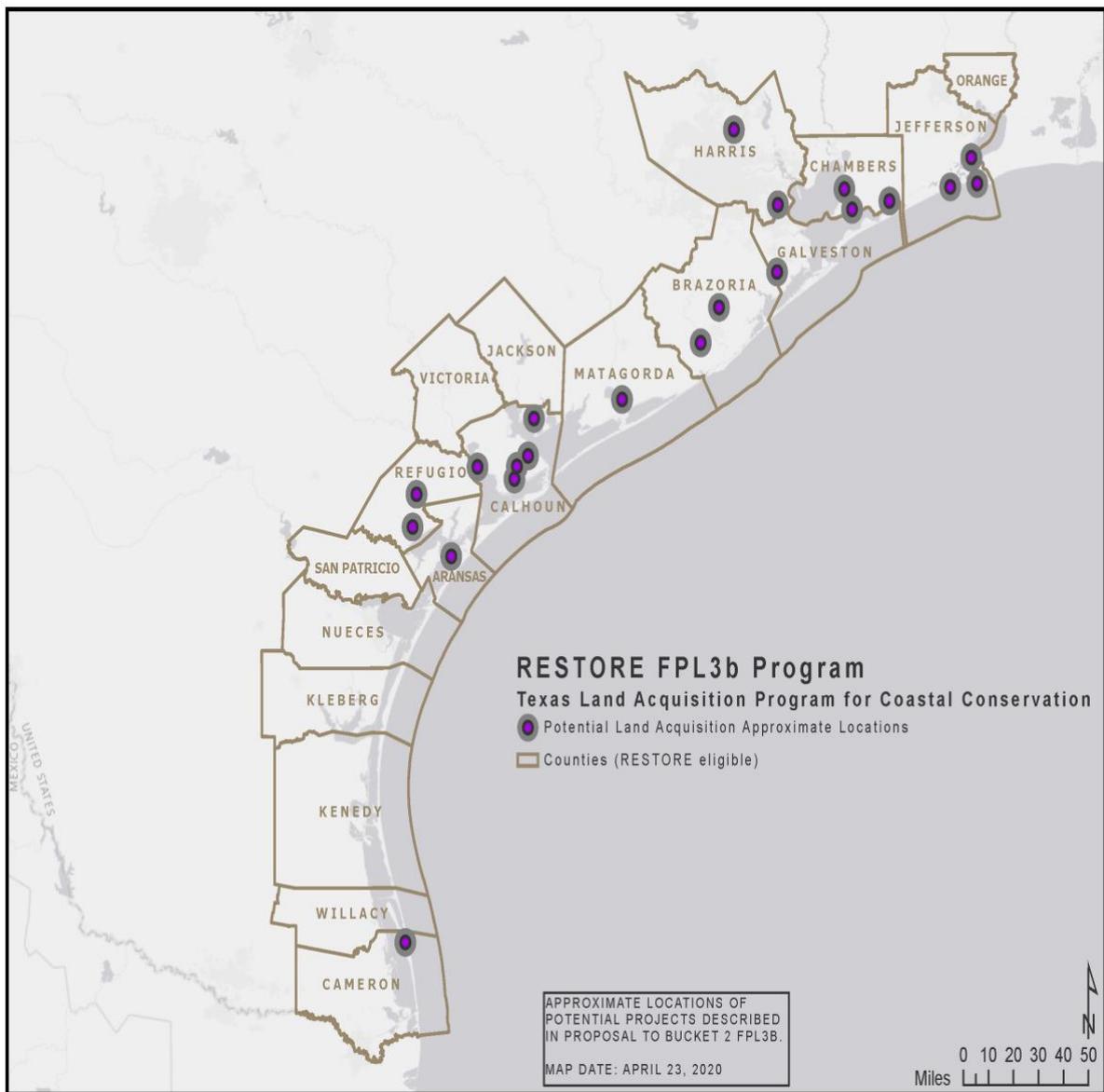


Figure 1: Approximate locations of potential land acquisitions.

RESTORE Council FPL 3 Proposal Document

General Information

Proposal Sponsor:

Texas Commission on Environmental Quality

Title:

Texas Land Acquisition Program for Coastal Conservation

Project Abstract:

This program will acquire large coastal zone properties in the state of Texas to promote long-term habitat management and high-quality coastal habitats. The program aims to select large coastal zone properties for conservation and make land or conservation easement purchases. Locations will be selected based upon what provides the greatest value to the coastal environment now and in the future considering the pressures of environmental change and development. Targeted habitats will include urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. The cost of the program and the amount of funding requested is \$31.8 million for planning and implementation phases. The current timeline for this program is 4 years, but that is subject to change depending on input from stakeholders and partners. Potential partners for the program may include TNC, TPWD, GBF, CBBEP, as well as other possible state and local governments. This program will conserve valuable land as habitat and provide natural buffers to flooding and erosion, decreasing the need for habitat destroying hard engineering projects while providing valuable ecosystem services.

FPL Category: Cat1: Planning/ Cat1: Implementation

Activity Type: Program

Program: Texas Land Acquisition Program for Coastal Conservation

Co-sponsoring Agency(ies): N/A

Is this a construction project?

No

RESTORE Act Priority Criteria:

(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.

Priority Criteria Justification:

This program will meet three of the RESTORE Act Priority Criteria:

1. Projected to make the greatest contribution to restoring and protecting natural resources. Through large-scale and strategic land acquisitions, this program will not only conserve present habitat, but very importantly, will preserve space for future buffers and habitat as the natural systems evolve and adjacent human pressures continue to increase.
2. Large-scale projects and programs. This is a large-scale program with individual land acquisition projects ranging in size from 100's to 1,000's of acres. The combined benefits of the projects within the program will increase the resiliency and environmental quality of the Texas coast by accommodating natural buffers to erosion, storm surge, flooding, and sea level rise while providing habitat for the future.
3. Contained in existing Gulf Coast State Comprehensive Plans. The prospective projects in this program were evaluated by the Texas FPL3b preproposal selection process and most were sourced from the 2019 Texas Coastal Resiliency Master Plan (TGLO, 2019), the state comprehensive coastal plan for Texas. In general, land acquisition projects were scored highly by the TCRMP Technical Advisory Committee (TAC) for addressing issues of concern along the coast. The TAC was comprised of coastal experts from state and federal agencies, NGOs, local governments, academics, and engineering firms (TGLO, 2019).

Project Duration (in years): 4

Goals

Primary Comprehensive Plan Goal:
Restore and Conserve Habitat

Primary Comprehensive Plan Objective:
Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:
N/A

Secondary Comprehensive Plan Goals:
N/A

PF Restoration Technique(s):
Protect and conserve coastal, estuarine, and riparian habitats: Land acquisition

Location

Location:
Texas Coastal Zone locations selected for quality of habitat, habitat vulnerability, critical location, and potential for acquisition

HUC8 Watershed(s):

Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(Buffalo-San Jacinto)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(East Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(West Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Austin-Oyster)
Texas-Gulf Region(Lower Colorado-San Bernard Coastal) - San Bernard Coastal(San Bernard)
Texas-Gulf Region(Central Texas Coastal) - Guadalupe(Lower Guadalupe)
Texas-Gulf Region(Central Texas Coastal) - San Antonio(Lower San Antonio)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(West Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Aransas Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Mission)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(South Laguna Madre)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Sabine Lake)

State(s):

Texas

County/Parish(es):

TX - Aransas
TX - Brazoria
TX - Calhoun
TX - Cameron
TX - Chambers
TX - Galveston
TX - Harris
TX - Jefferson
TX - Matagorda
TX - Refugio

Congressional District(s):

TX - 27
TX - 14
TX - 29
TX - 36
TX - 34

Narratives

Introduction and Overview:

This program aims to acquire large coastal zone properties or easement purchases to promote long-term habitat management and high-quality coastal habitat along the Texas coast. Selection will be based on environmental data and expert stakeholder input for areas that will provide valuable long-term environmental benefits for the Texas coast. Ownership of the acquired land may be held by government or a non-governmental organization depending on the greatest advantage for acquisition, leveraging, and conservation. This program conforms to the RESTORE Council's FPL3 Planning Framework by adhering to the priority to restore and conserve habitat, while protecting and conserving coastal, estuarine, and riparian habitats. This program will also advance the commitments set forth in the 2016 Comprehensive Plan Update by using the best available science

for land acquisition, developing a monitoring and data management framework, and defining metrics of success of the land acquisition projects. The total cost of this program and the amount of Council Selected Restoration Component funding being requested is \$31.8 million over 4 years. The actual cost of individual acquisitions may vary based on property location, size, and willingness of sellers. Because of this, the program is scalable and allows for reduction in property size based on funding granted. The timeline of this program will also depend on the availability of land and the willingness of sellers. Potential partners for this program include TNC, TPWD, GBF, CBBEP, as well as other possible state and local governments.

The Texas coast is dynamic and constantly changing via natural processes and human activity. The coast supports a wide variety of critical habitat, such as nurseries for fish, birds, oysters, and other wildlife. It is also responsible for a large proportion of the Texas economy and population and continues to grow at a higher rate than inland areas. This makes the Texas coast vulnerable to many stressors. As development continues to increase, the critical habitats and ecosystems are being diminished which adds to the vulnerability of the natural environment. The habitat types that are found along the coast (marshes, flats, seagrasses, prairies, etc.) not only provide valuable resources, they also serve as protection from processes such as sea level rise, hurricanes, and flooding (Ruckelshaus, 2016). Losing these natural buffers due to coastal development increases the exposure of communities to extreme events. Conservation of coastal land will protect key areas from expanding development and allow the environment to adjust to long-term changes. The funds requested in this program are for acquisition of coastal land and not for land modifications. The long-term conservation benefits will also enable the restoration of degraded areas. Acquisition of these lands will have indirect benefits that include protection of adjacent estuaries, improved water quality, and enhanced coastal resiliency.

Types of coastal land acquisitions being considered as part of a larger list of potential properties that have been vetted include Armand Bayou, Lower Laguna Madre, Texas Point National Wildlife Refuge, and Columbia Bottomlands. These locations along the Texas coast provide valuable habitats and resources of coastal lands, and they support a diverse and abundant array of plants and animals. Acquisition of the undeveloped riparian forest floodplains of Armand Bayou would prevent development in high risk areas and protect riparian habitat and ecosystem functions. The pressures facing this ecosystem include subsidence, changes in wetland vegetation, and drainage, largely due to human disturbances (McFarlane, 1991) These issues have also resulted in degraded water quality in the area as the mostly rural area has transitioned into residential development. Lower Laguna Madre includes tidal wetlands, uplands, resacas, saline coastal prairies, thorn scrub, and barrier islands that add significant value to the conservation landscape. The Lower Laguna Madre system is an especially critical habitat for nesting waterfowl including Snowy and Wilson's plovers, which are threatened by development (Hood, 2008). The conservation of Texas Point NWR is important to migratory and wintering waterfowl and would continue to provide a storm buffer for neighboring communities, thereby preserving coastal resiliency. Columbia Bottomlands holds a forest that has been identified as a priority habitat for hundreds of species of migratory birds, as well as marsh and coastal wetland habitat. Once spanning over 283,000 ha, the Columbia Bottomlands has been reduced by more than 25% (Rosen, 2008). Acquiring this land would protect the remaining acreage and the habitats they encompass. The scope of this program is not limited to these locations, and other properties along the Texas coast will be considered in the project selection phase. This program aims to acquire the most beneficial land, both in acreage and in resources provided.

Years of ecological degradation from human activity and degradation from events such as the 2010 Deepwater Horizon oil spill have increased the vulnerability of the environment and the resources provided by the region (Samiappan, 2019). Development is an added stressor to the coastal zone, and by purchasing these lands that potential degradation can be avoided. Conserving this land will

protect the valuable resources within the habitats encompassed. In general, the environmental benefits provided by this program span from protecting habitats and conserving biodiversity to improving water quality and storm buffering. The direct benefits to coastal communities by preserving land include reducing erosion and flooding, as well as providing additional economic benefits and recreation. It is important to be proactive when considering habitat loss, and this program aims to preserve the existing environment rather than attempt to replace the resources once they are lost, both in terms of costs and feasibility.

Proposed Methods:

Funds may be set aside for immediate short-term management and maintenance to protect resources. This program will not alter the landscape or the environment of the land purchased, instead it will protect the land from future negative alterations due to development. In addition, acquisition of the valuable coastal properties may provide areas for possible future restoration or other beneficial activities that can increase the conservation footprint of the project.

This program will develop a process for selecting properties for acquisition that builds on Texas' stakeholder-driven process for developing the Planning Framework and selecting preliminary projects for FPL3 consideration. During this earlier work, county governments, NGOs, and a workgroup made up of Texas NRDA and Texas Coastal Resiliency Master Plan (TCRMP) representatives submitted 38 projects for FPL3 consideration. Coastal experts, HRI staff, and TCEQ staff reviewed the projects and selected 23 for public comment. Among these 23 projects, there are 10 projects that include land acquisition (see map), which this program will consider for implementation. Land acquisitions may be in different types of settings and habitats including urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. The selection process will consider what provides the greatest value to the coastal environment now and in the future as the human and natural landscapes continue to evolve. Environmental data and analyses will be required and continued input from our stakeholders will be crucial to make the program a success.

Once an area has been targeted for acquisition the following general steps will be required: (1) Complete due diligence including appraisal, environmental assessment, survey and title search to ensure that the purchase costs are consistent with market values, that the property is not contaminated, property boundaries are known, and that the tracts' titles are free and clear of objectionable encumbrances; (2) Secure the land or easement with a purchase contract; and (3) Convey the property for long-term management. Given documented success of previous land acquisition projects in Texas and subsequent transfer of those tracts to the project partners, the project has a high likelihood of success.

Environmental Benefits:

Industry and population growth along the Texas coast continue to place pressures on the remaining open spaces and directly impacts its ecosystems through channelization, subsidence, saltwater intrusion, and erosion of critical estuarine shore environments. These impacts increase the level of storm surge vulnerability of economically important industries. Conservation of tracts in these areas would not only directly ensure long-term ecological benefits, it would also indirectly protect industries and coastal communities increasing their resiliency (Czech, 2004). A wide array of ecosystem services would be preserved as recognized by Texas coastal stakeholders in an earlier study (Hutchison et al., 2015). The cost to acquire properties for the purpose of habitat conservation is significantly less than what the cost would be to attempt to restore or replace the functions of the environments once they are degraded or lost completely (Calnan, 1995).

The 2019 TCRMP Technical Advisory Committee (Texas General Land Office, 2019) consistently scored land acquisition projects highly for addressing a variety of environmental issues of concern

including (1) altered degraded or lost habitat, (2) existing and future coastal storm damage, (3) coastal flood damage, (4) impact on water quality and quantity, and (5) impact on coastal resources. The low-lying, gently sloping, subsiding, and hurricane prone Texas coastal plain continues to attract more people and economic activity, which is converting natural environments to built environments and taking the space for natural buffers and future environmental transitions. From 1996 To 2010, NOAA C-CAP satellite data show an increase in the amount of developed land in the Texas coastal zone of 42,334 acres (66 square miles) (National Oceanic and Atmospheric Administration, 1996; National Oceanic and Atmospheric Administration, 2010). Furthermore, projections of future urban expansion show an increase of urban land cover of 256,625 acres (401 square miles) from 2010 to 2050 just in the Galveston Bay region (Sohl et al., 2018). The strategic acquisition of land in the coastal zone of Texas will provide long-term conservation of environments, which impart ecosystem services with market and non-market value (Barbier et al., 2011). Furthermore, secondary benefits may be realized in better water quality and protection of adjacent areas. Some land acquisitions may also serve to provide areas where the transition of coastal environments can occur as sea level rises, thus offsetting the loss of intertidal environments (Texas General Land Office, 2019).

Metrics:

Metric Title: HC001: Conservation easements - Acres protected under easement: Habitat Conservation

Target: TBD

Narrative: This program will purchase large conservation easements along the Texas coast to preserve the natural environment. Long-term success can be measured by ensuring the acquisition of the most valuable land while also considering the quantity of acres protected under long-term conservation easement. Monitoring of the acquired acres will provide consistent measures of success.

Metric Title: HC003: Land acquisition - Acres acquired in fee: Habitat Conservation

Target: TBD

Narrative: The goal of this program is to acquire large coastal zone properties to give ownership of the land to federal, state, or local government or a non-government organization. A measure of success for the program would be to maximize the acres acquired with the funds granted. The value of the land in consideration will also be examined to ensure the resources provided by the properties are maximized. More valuable acreage acquired through this program would result in more conservation of the Texas coast.

Risk and Uncertainties:

Because no physical alterations will be done to the acquired land, the risks are relatively low. The primary risks and uncertainties for these land acquisition projects involve finding willing sellers of land that meets program objectives. Land prices are an uncertainty as well and may cause the program to find other properties if environmental objectives are not achievable with smaller purchases. Some large conservation purchases have been made in recent years, however, and this may help bring other willing sellers to the table. Tropical storms and sea level rise present a threat to the acquisition of land, however the proven record of success of similar strategies and techniques with a significant duration shows that these risks can be overcome in the long term (Samiappan 2019). There is slight risk that the acquired land will be affected by natural processes, however preservation of the natural habitats and vegetation is a step towards mitigating that risk. Taking steps to prevent future development of the acquired tracts will mitigate the risks associated with sea level rise, subsidence, and storms (Ferreira 2014). Long-term monitoring will take place and if substantial negative changes occur in the acquired properties, restoration practices may be enacted.

Monitoring and Adaptive Management:

Project monitoring for this program will involve observations for providing information on (1) baseline environmental characterization, (2) environmental trends, and (3) to support adaptive management (NAS, 2017). Type of monitoring data will include biophysical and ecological observations of the conserved land and of adjacent areas to serve as reference sites (DWH-NRDA, 2017). Monitoring will occur on semiannual or annual bases for a minimum of two years following acquisition.

The land acquisition program will require long term monitoring to ensure the natural habitats of the acquired properties are being conserved and protected. Monitoring the area over the program duration will help determine if the areas are providing the expected benefits. Once the targeted tracts of land are purchased, ownership will be transferred to a government or non-government organization to help monitor the conservation of the environments. Methods of monitoring may include vegetation sampling, water quality testing, and land cover surveys (Calnan 1995). Changes in habitat type, vegetation, and biodiversity will be monitored, as this program aims to conserve the current landscape and promote natural healthy changes. Over time, steps may be taken to promote further environmental conservation by removing invasive species or planting more native vegetation, however those actions are not within the scope of this program.

Data Management:

Data management for this program will make data publicly available thereby enhancing outcomes and future restoration efforts.

Planning data: During program planning, a variety of existing and newly acquired data will be gathered. Data in this category includes mostly geospatial data on land ownership, shoreline change rates, land cover, land use, infrastructure, elevation, and ecological data describing past and current environmental conditions and development.

Project implementation data: These data are needed for determining baseline conditions and are similar as planning data for specific properties. Detailed land survey data and photography may be included.

Post-project implementation data: These data are needed for monitoring ecological conditions, and informing adaptive management actions. They include time series of biophysical observations similar to the planning and implementation data for understanding trends.

Program activities will identify data used. TCEQ and GRIIDC (Gibeaut, 2016) will work with data users to ensure pertinent data are shared when key activities end. GRIIDC is a well-known data repository designed to receive data from a variety of sources and from various scientific and engineering disciplines. GRIIDC will track, curate, and archive data in the GRIIDC repository and make it publicly discoverable and available. Metadata will follow the ISO 19115-2 standard and datasets will be reviewed for completeness and organization to enable reuse.

Collaboration:

Two Texas workgroups were established to provide input on coastal priorities: State & Federal Representatives and Non-Governmental Organizations. On-line and in-person meetings were held to discuss plans to develop Texas coastal priorities and to ensure the public's involvement. A survey was developed that asked for individual's coastal priorities. These surveys were available to the public and were also completed by members of the two work groups. Public meetings were conducted in three coastal cities for the public to present their issues and concerns. Information received from workgroup meetings, discussions with elected officials, public meetings and the surveys was used to develop a list of priorities to be included in the RESTORE Council's Planning

Framework document. These efforts of collaboration will continue throughout the process to develop programs and projects. Work will continue with Texas representatives for NRDA/NFWF to consider leveraging opportunities.

Public Engagement, Outreach, and Education:

The decision to submit this program was based on many months of discussions with work groups and participation by the public. It began with discussions with the Texas representatives for NRDA & NFWF to identify programs/projects for FPL 3b. This identified list was shared with the two workgroups (State & Federal and NGOs) established for Bucket 2 planning purposes, for their review and comment. County judges in the coastal area also were given the opportunity to identify potential programs/projects for their areas. Using the information compiled as part of this process, a list of 23 projects were posted for public comment on the Texas RESTORE website. In addition, two public hearings were held in coastal cities. In reviewing the comments received, the timing to move forward with proposals, and in discussions with the Texas Governor's staff, it was determined that program rather than project specific proposals would be submitted. The development of the program proposals was done to ensure that projects posted for public comment could be considered in at least one of the program submissions. Much of the work has already been done to identify projects that could be funded within this program submission. The process to select FPL 3b grant recipients will include the requirement that projects will have to already been vetted by this process or through other public processes such as the GLO's Coastal Resiliency Master Plan, or NRDA & NFWF related activities. The criteria to select the specific projects would include, but not limited to, the following: addresses issues presented in the program proposal; amounts of funds available for the program; readiness; leveraging opportunities; scalability; risk/benefit ratio; and distribution of funds across the Texas coastline. Notification of the projects selected to receive grant funds will be posted on the Texas RESTORE website. This overall process, parts already completed and others to be completed after the program has been approved for FPL 3b funds, will ensure that the ultimate selection of projects for this program are not only consistent with the RESTORE Planning Framework document, but also reflect the ideas that were discussed by the work groups, the elected officials, the public and the Office of the Governor.

Leveraging:

Funds: TBD

Type: TBD

Status: TBD

Source Type: TBD

Description: The expectation is that programs and/or projects that are ultimately selected for funding in Texas could likely include partnerships leveraging various funds, including RESTORE, NRDA and NFWF monies. In continuing discussions with NRDA, NFWF, county judges and NGOs, all parties have emphasized the need to leverage all DWH Oil spill associated funds, as well as other funds, and it is Texas' intent to consider leveraging as a criteria in selecting projects. This selection/determination process would be similar to the decision-making associated with the Texas pre-proposals. NRDA, NFWF, NGOs and RESTORE Texas have a history of acquiring land for conservation purposes and we expect for that trend to continue.

Environmental Compliance:

Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.

Bibliography:

Barbier, E.B., Hacker, S.D., Kennedy, C., Koch, E.W., Stier, A.C. and Silliman, B.R. (2011), The value of estuarine and coastal ecosystem services. *Ecological Monographs*, 81: 169-193. doi:10.1890/10-1510.1

Calnan, Thomas R. September 1995. Coastal Division Texas General Land Office. "A Coastal Wetlands Acquisition Plan For Texas" <https://tamug-ir.tdl.org/bitstream/handle/1969.3/25768/8709-Coastal%20Wetlands%20Acquisition%20Plan%20for%20Texas.pdf?sequence=1&isAllowed=y>

Czech, Brian. 2004. "Urbanization As a Threat to Biodiversity: Trophic Theory, Economic Geography and Implications for Conservation Land Acquisition" *Policies for Managing Urban Growth and Landscape Change: A Key to Conservation in the 21st Century.*
https://www.nrs.fs.fed.us/pubs/gtr/gtr_nc265/gtr_nc265_008.pdf

DWH-NRDA. 2017. Deepwater Horizon (DWH) Natural Resource Damage Assessment Trustees. Monitoring and Adaptive Management Procedures and Guidelines Manual Version 1.0. Appendix to the Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the DWH Oil Spill. December. Available: <http://www.gulfspillrestoration.noaa.gov/>.

Ferreira, C.M., Irish, J.L., and Olivera, F. December 2014. "Quantifying the potential impact of land cover changes due to sea-level rise on storm surge on lower Texas coast bays." *Coastal Engineering* 94: 102-111. <https://www.sciencedirect.com/science/article/pii/S037838391400163X>.

Gibeaut, J., 2016, Enabling data sharing through the Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC). *Oceanography* 29(3):33–37,
<https://doi.org/10.5670/oceanog.2016.59>.

Hood, Sharyn L. and Dinsmore, Stephen J. 2007. "The Influence of Habitat on Nest Survival of Snowy and Wilson's Plovers in the Lower Laguna Madre Region of Texas" *Natural Resource Ecology and Management Publications*. 87.

Hutchison, L., P. Montagna, D.W. Yoskowitz, D. Scholz, and J. Tunnell. 2015. Stakeholder Perceptions of Coastal Habitat Ecosystem Services. *Estuaries and Coasts*. 38 S1: 67-80. DOI: 10.1007/s12237-013-9647-7

McFarlane, R.W. March 1991. "An Environmental Inventory of the Armand Bayou Coastal Preserve." Galveston Bay National Estuary Program. file:///C:/Users/lilbr/Downloads/4253-Environmental%20Inventory%20of%20the%20Armand%20Bayou%20Coastal%20Preserve.pdf

National Academies of Sciences, Engineering, and Medicine (NAS). 2017. *Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico*. Washington, DC: The National Academies Press. doi: 10.17226/23476.

National Oceanic and Atmospheric Administration, Office for Coastal Management. 2010. "2010 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. www.coast.noaa.gov/ccapftp.

National Oceanic and Atmospheric Administration, Office for Coastal Management. 1996. "1996 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. www.coast.noaa.gov/ccapftp.

Rosen, D.J., De Steven, D. and Lange, M.L. 1 January 2008. "Conservation Strategies and Vegetation

Characterization in the Columbia Bottomlands, and Under-recognized Southern Floodplain Forest Formation." *Natural Areas Journal* 28(1), 74-82. [https://doi.org/10.3375/0885-8608\(2008\)28\[74:CSAVCI\]2.0.CO;2](https://doi.org/10.3375/0885-8608(2008)28[74:CSAVCI]2.0.CO;2)

Ruckelshaus, M.H., Guannel, G., Arkema, K. Verutes, G., Griffin, R., Guerry, A., Silver, J., Faries, J., Brenner, J. and Rosenthal, A. 2016. "Evaluating the Benefits of Green Infrastructure for Coastal Areas: Location, Location, Location." *Coastal Management*, 445, 504-516. DOI. <https://doi.org/10.1080/08920753.2016.1208882>

Samiappan, S., Shamaskin, A., Liu, J., Roberts, J., Linhoss, A., and Evans, K. 2019. "Land Conservation in the Gulf of Mexico Region: A Comprehensive Review of Plans, Priorities, and Efforts." *Land* 8(5) 84. <https://doi.org/10.3390/land8050084>.

Sohl, T.L., Sayler, K.L., Bouchard, M.A., Reker, R.R., Freisz, A.M., Bennett, S.L., Sleeter, B.M., Sleeter, R.R., Wilson, T., Soulard, C., Knuppe, M., and Van Hofwegen, T. 2018. Conterminous United States Land Cover Projections - 1992 to 2100: U.S. Geological Survey data release, <https://doi.org/10.5066/P95AK9HP>.

Texas General Land Office. March 2019. "Texas Coastal Resiliency Master Plan." Austin, Texas. <https://coastalstudy.texas.gov/resources/files/2019-coastal-master-plan.pdf>.

Budget

Project Budget Narrative:

The total requested for this program is \$31.8million. Of that amount, approximately \$30 million will be provided to sub-recipients to implement projects selected for this program. TCEQ estimates that it will require approximately \$1.8 million to support the following: administrative expenses (salary, indirect, travel, fringe, supplies, etc...); hosting & maintenance costs for the Texas RESTORE web site; and for a contract to provide technical assistance to TCEQ staff.

Total FPL 3 Project/Program Budget Request:

\$ 31,800,000.00

Estimated Percent Monitoring and Adaptive Management: 0 %

Estimated Percent Planning: 1 %

Estimated Percent Implementation: 93.5 %

Estimated Percent Project Management: 5.5 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 0 %

Is the Project Scalable?

Yes

If yes, provide a short description regarding scalability.:

Land acquisition projects in this program may be reduced in number, size, or cost per acre according to available funding.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g., title and date of document, permit number, weblink etc.)
National Environmental Policy Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Endangered Species Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
National Historic Preservation Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Magnuson-Stevens Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Fish and Wildlife Conservation Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Coastal Zone Management Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Coastal Barrier Resources Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.

¹ ¹¹ Environmental Compliance document uploads available by request (restorecouncil@restorethegulf.gov).

Farmland Protection Policy Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Clean Water Act (Section 404)	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
River and Harbors Act (Section 10)	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Marine Protection, Research and Sanctuaries Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Marine Mammal Protection Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
National Marine Sanctuaries Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Migratory Bird Treaty Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Bald and Golden Eagle Protection Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Clean Air Act	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical

		Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.
Other Applicable Environmental Compliance Laws or Regulations	No	Texas is working with the USDA and FWS and other applicable agencies on an environmental compliance Categorical Exclusion for land acquisition that will be provided prior to the public release of the draft FPL3b.

Maps, Charts, Figures

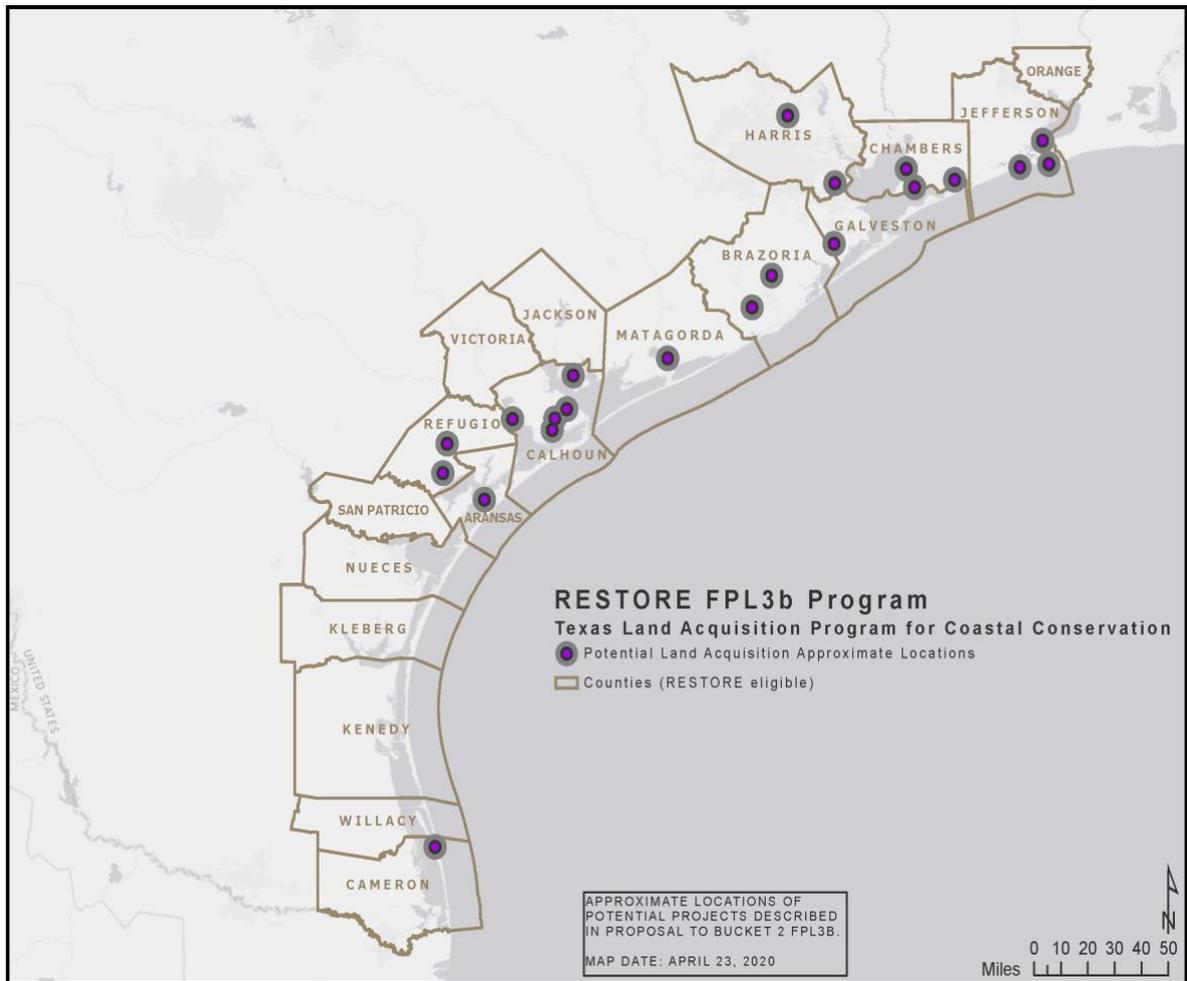


Figure 1: Approximate locations of potential land acquisitions.

FPL 3b Internal Staff Review of Proposal Submitted 4/24/2020

Project/Program	Texas Land Acquisition Program for Coastal Conservation		
Primary Reviewer	Heather Young	Sponsor	Texas
EC Reviewer	Heather Young	Co-Sponsor	
1. Is/Are the selected Priority Criteria supported by information in the proposal?			Yes
Notes			
2. Does the proposal meet the RESTORE Act geographic eligibility requirement?			Yes
Notes			
3. Are the Comprehensive Plan primary goal and primary objective supported by information in the proposal?			Yes
Notes			
4. Planning Framework: If the proposal is designed to align with the Planning Framework, does the proposal support the selected priority approaches, priority techniques, and/or geographic area?			Yes
Notes			
5. Does the proposal align with the applicable RESTORE Council definition of project or program?			Yes
Notes			
6. Does the budget narrative adequately describe the costs associated with the proposed activity?			Yes
Notes	If environmental compliance is not completed to support inclusion of implementation components as Category 1 prior to public release of the draft FPL3b, then the budget narrative will need to be revised to clearly identify the amounts requested for Category 1 and Category 2.		
7. Are there any recommended revisions to the selected leveraged funding categories?			Yes

Notes	The sponsor indicates leveraging is TBD and has not identified a type or source. The proposal states it is Texas' intent to consider leveraging as a criteria in selecting projects. Council staff recommends that TX add a leveraging entry to also capture the significant acquisition investments made in FPL1 in Texas under the leveraging category "Builds on Other Work" by identifying the amount of RESTORE funds, status and source type of this leveraging. Later, as projects are identified, the leveraging information can be updated if appropriate.
8. Have three external BAS reviews been completed?	
Notes	Please see the external BAS review comments, and external reviews summary attached with these review comments.
9. Have appropriate metrics been proposed to support all primary and secondary goals?	
Notes	
10. Environmental compliance: If FPL Category 1 has been selected for the implementation component of the project or program, does the proposal include environmental compliance documentation that fully supports the selection of Category 1?	
Notes	The sponsor is seeking funding approval (FPL Category 1) for the planning and implementation components of this acquisition program. The sponsor has answered "No" for all environmental compliance requirements indicating that while requirements have not yet been addressed, Texas is working with the USDA and FWS on potential use of a Council member CE for land acquisition that will be provided prior to public release of the draft FPL3b. Additional environmental compliance will be necessary.
11. Geospatial Compliance: Have the appropriate geospatial files and associated metadata been submitted along with a map of the proposed project/program area?	
Notes	The submitted GIS project boundary includes the East San Antonio Bay watershed but does not intersect the Lower Guadalupe watershed. Council staff recommends the sponsor remove Lower Guadeloupe watershed and add East San Antonio Bay watershed.

FPL 3b BAS Review Summary – Texas Land Acquisition Program for Coastal Conservation

May 2020

The external Best Available Science reviews for the *Texas Land Acquisition Program for Coastal Conservation* proposal are generally positive. Reviewers agree the project objectives, including proposed methods, have been justified using a strong mix of peer reviewed and publicly available information (all reviewers) that maximizes the quality, objectivity, and integrity of information (Reviewers 1 and 3) and is pertinent to the Gulf Coast region (all reviewers). Reviewer 3 notes that the use of the Calnan 1995 reference is excellent justification for the project. All reviewers agree literature sources used to support the proposal are accurately and completely cited and represented in a fair, unbiased manner.

Reviewers also agree the program has clearly defined goals and objectives, measures of success that align with these primary goals and objectives, and appropriate justification of the selected methods. However, Reviewer 3 requests general clarification around whether the objective of the proposal is land acquisition, or land acquisition and management, noting that management, if included, is not well-described in the method, risks, or monitoring sections. Reviewer 3 also suggests that acronyms should be spelled out in the project abstract and throughout the proposal text.

Generally, reviewers agree that the program has identified the likely environmental benefits of the proposed activity (Reviewers 1 and 3), but that more information is needed to describe a monitoring and data management strategy that will support program measures of success (Reviewers 2 and 3). Reviewer 3 points out that no funds are allocated to monitoring in the budget. The inclusion of additional details on the development of a monitoring plan with environmental parameters and links to a comprehensive adaptive management or decision-making structure will help connect the acquisition into a broader restoration and protection strategy for Texas' Gulf Coast (Reviewer 2). However, it should be noted that a detailed monitoring plan with specific parameters is not required at the proposal stage.

While the proposal includes a good discussion of near-term risks such as land prices and the impact of natural events, more information regarding uncertainties beyond the control of the State of Texas and uncertainty/risk over time (Reviewer 2). To this end, Reviewer 3 suggests additional discussion of risks related to land acquisition- such as inflation of real estate prices and land loss. Reviewer 3 also highlights the relative risk of state land ownership versus private, non-profit entities through transfer, and recommends a science-based discussion around how private transfer suits the public interest of the citizens of Texas.

All reviewers generally agree that the proposal has considered applicable short-term implementation risks and scientific uncertainties, however Reviewer 1 points out that while a number of strategies to mitigate short-term risks are discussed, there is no mitigation plan, per se. It should be noted, however, that detailed mitigation plans are not required at the FPL proposal stage.

While the discussion of short-term risks was generally well done (Reviewer 3), more information is needed to describe the program's vulnerability to long-term environmental risks (Reviewers 2 and 3). Specifically, Reviewer 3 recommends rewording a statement on page six that begins "There is a slight risk that the acquired land will be affected....", noting that the risk for these areas is high, particularly the ones on the eastern portion of the coast. Reviewer 1 also suggests providing additional references to support the statement on page 6 that, "risks could be overcome".

Reviewers generally agree that the proposal has evaluated the past successes of similar efforts, however Reviewer 3 suggests clarifying TCEQ's specific role in past land acquisition work. Additionally, Reviewer 1 suggests that the discussion of both past successes or failures should evaluate these elements in a manner where they could be used to guide proposed procedures.

Reviewer 3 provides the following in summary, "Overall this is a worthy proposal that is well-documented scientifically. It does need a few revisions and specification about some of its objectives and according risks [...]."

Texas Land Acquisition Program

RESTORE Act Bucket 2 FPL3b Proposal

Response to Best Available Science External Review

15 June 2020

From summary of BAS reviews provided by RESTORE Council Staff:

“The external Best Available Science reviews for the Texas Land Acquisition Program for Coastal Conservation proposal are generally positive. Reviewers agree the project objectives, including proposed methods, have been justified using a strong mix of peer reviewed and publicly available information (all reviewers) that maximizes the quality, objectivity, and integrity of information (Reviewers 1 and 3) and is pertinent to the Gulf Coast region (all reviewers).”

Following are replies to specific comments.

(1) Reviewers 2 and 3: More information is needed to describe a monitoring and data management strategy that will support program measures of success. Reviewer 3 also ask for clarification if the objective is land acquisition or land acquisition and management.

Reply: A detailed monitoring plan is not required at this proposal stage. Once individual projects are selected, more information regarding specific parameters and data management will be included in the applications phase. The objective of the program is land acquisition only.

(2) Reviewer 3: Points out that no funds are allocated to monitoring in the budget.

Reply: The following text will be added to the budget section of the proposal: “Data management and monitoring & adaptive management costs are included in the implementation costs.”

(3) Reviewer 2: Suggests the inclusion of additional details on the development of a monitoring plan with environmental parameters and links to a comprehensive adaptive management or decision-making structure will help connect the acquisition into a broader restoration and protection strategy for Texas’ Gulf Coast.

Reply: A detailed monitoring plan with specific parameters is not required at the proposal stage as the program or individual projects have not been selected. Once in the program’s application phase, environmental parameters and links to a comprehensive adaptive management/decision-making structure acceptable to the RESTORE Council will be considered, as well as information from similar projects.

(4) Reviewer 2: While the proposal includes a good discussion of near-term risks such as land prices and the impact of natural events, more information regarding uncertainties beyond the control of the State of Texas and uncertainty/risk over time is needed.

Reply: Risks and uncertainties beyond the control of the State of Texas and over time will vary based on each individual land acquisition project. Therefore, extensive discussion on this topic would be too hypothetical and not useful at this time.

(5) Reviewer 3: Suggests additional discussion of risks related to land acquisition- such as inflation of real estate prices and land loss.

Reply: We will include additional discussion based on past similar land acquisition projects and literature regarding real estate prices and land loss. These risks will vary based on each individual land acquisition project, but Texas' experience with the Matagorda Bay System Priority Landscape Conservation Project from the initial FPL will be added to the proposal. Land loss risk will be further discussed based on past trends and future projections based on sea level rise modeling performed for the Texas Coastal Resiliency Master Plan. These issues are presented in the Environmental Benefits but will be expanded and added to the Risk and Uncertainties section. Following are additional references we will use.

Armsworth, P.R., Daily, G.C., Kareiva, P. and Sanchirico, J.N. (2006). Land Market Feedbacks Can Undermine Biodiversity Conservation. *Proceedings of the National Academy of Sciences of the United States of America* 103(14) 5403-5408. <http://www.jstor.com/stable/30048813>

Morton, R.A., Miller, T.L., and Moore, L.J., 2004, National assessment of shoreline change: Part 1: Historical shoreline changes and associated coastal land loss along the U.S. Gulf of Mexico: U.S. Geological Survey Open-file Report 2004-1043, 45p

(6) Reviewer 3: Highlights the relative risk of state land ownership versus private, non-profit entities through transfer, and recommends a science-based discussion around how private transfer suits the public interest of the citizens of Texas.

Reply: We will add a discussion on the benefits of privately owned or publicly owned land regarding conservation. Following are some references we will consider:

Drescher, M. and Brenner, J.C. (2018). The practice and promise of private land conservation. *Ecology and Society* 23(2). <http://www.jstor.com/stable/26799076>

Pasquini, L., Fitzsimons, J., Cowell, S., Brandon, K., and Wescott, G. (2011). The establishment of large private nature reserves by conservation NGOs: Key factors for successful implementation. *Oryx*, 45(3), 373-380. doi:10.1017/S0030605310000876

Newburn, D., Reed, S., Berck, P., and Merelender, A. (October 2005). Economics and land-use change in prioritizing private land conservation. *Conservation Biology* 19(5), 1411-1420.

(7) Reviewer 1: Points out that while a number of strategies to mitigate short-term risks are discussed, there is no mitigation plan, per se.

Reply: At this FPL proposal stage, detailed mitigation plans are not required as the program or individual projects have not been selected. In the program application and project selection phase, we will include additional information on potential mitigation plans.

(8) Reviewers 2 and 3: Suggests more information is needed to describe the program's vulnerability to long-term environmental risks.

Reply: Long-term environmental risks will vary based on individual land acquisition sites, however we will include discussion based on scientific literature to provide more information regarding potential long-term environmental risks and risk mitigation. We will add a more in-depth discussion on sea-level

rise, flooding, subsidence, and changes in land cover that were completed for the Texas Coastal Resiliency Master Plan. In addition, we will consider the following references:

Brommer, M.B. and Bochev-van der Burgh, L. (2009). Sustainable Coastal Zone Management: A Concept for Forecasting Long-Term and Large-Scale Coastal Evolution. *Journal of Coastal Research* 25(1), 181-188. <http://www.jstor.com/stable/40065110>

Groves, D.G., Fischbach, J.R., Knopman, D., Johnson, D.R., and Giglio, K. Reducing Coastal Risk Through Integrated Planning. *Strengthening Coastal Planning*.
<http://www.jstor.com/stable/10.7249/j.ctt6wq8n9.11>

Horstman, E.M., Wijnberg, K.M., Smale, A.J., and Hulscher, S.J.M.H. (2009). Long-term Coastal Management Strategies: Useful or Useless? *Journal of Coastal Research* 1, 233-237.
<http://www.jstor.com/stable/25737572>

(9) Reviewer 3: Recommends rewording a statement on page six that begins “There is a slight risk that the acquired land will be affected...”, noting that the risk for these areas is high, particularly the ones on the eastern portion of the coast.

Reply: The referenced sentence will be replaced with the following: “While there are properties being considered for acquisition that have a relatively high risk of erosion and land loss, they do offer critical habitats and areas of environmental significance. These factors will be taken into consideration when finalizing locations, and when acquisition sites are selected, a detailed risk mitigation strategy will be included.”

(10) Reviewer 1: Suggests providing additional references to support the statement on page 6 that, “risks could be overcome”.

Reply: We will consider the following references to support risk mitigation:

Chapman, D.J. and Julius, B.E. (2005). The Use of Preventative Projects as Compensatory Restoration. *Journal of Coastal Resources* 40, 120-131. <http://www.jstor.com/stable/25736620>

Tyler, Jenna. (2016). Sustainable Hazard Mitigation: Exploring the Importance of Green Infrastructure in Building Disaster Resilient Communities. *Consilience* 15, 134-145.
<http://www.jstor.com/stable/26188762>

(11) Reviewer 3: Suggests clarifying TCEQ’s specific role in past land acquisition work.

Reply: The following text will be added: “To ensure success of this program, TCEQ will reach out to the state, federal, and NGO groups who have collaborated on developing Texas’ FPL3b program to this point. The combined expertise and experience of this group in coastal land conservation will be a significant resource to the program.”

(12) Reviewer 1: Suggests that the discussion of both past successes or failures should evaluate these elements in a manner where they could be used to guide proposed procedures.

Reply: We will incorporate references to well documented similar land acquisition projects, drawing from past successes and failures. Discussion of past failures or shortcomings will add more information to the risks section as well.

Czech, Brian. (2002). A Transdisciplinary Approach to Conservation Land Acquisition. *Conservation Biology* 16(6) 1488-1497. <https://www.jstor.org/stable/3095405>

Korngold, Gerald. (2011). A Policy Calculus of Conservation Easements and Alternatives. *Conservation Easements Outside of the United States*. <https://www.jstor.org/stable/resrep18364.5>

[<https://dwhprojecttracker.org/project/754/>]

Gulf Coast Ecosystem Restoration Council

FPL 3b Internal Best Available Science Review Panel Summary

July 2020

Introduction

On Tuesday, June 30, and Wednesday July 1, 2020 the RESTORE Council convened the Funded Priorities List (FPL) 3b Internal Best Available Science (BAS) Review Panel. The purpose of this internal panel was to use Council member-agency expertise to address external BAS review comments provided for FPL 3b submitted project/program proposals, and potentially identify project/program synergies not identified prior to proposal submission. The ultimate goal of the panel was to provide Council members with substantive best available science content to inform their decision-making.

The internal panel was convened via webinar with representatives from each of the Council's eleven member agencies present. Each BAS Panel member was provided the following:

- 1) Full FPL 3b proposals
- 2) 3 external BAS reviews for each proposal
- 3) Summary of external BAS reviews for each proposal
- 4) Proposal Sponsor's response to the BAS reviews summary
- 5) Any proposed revisions to the proposal

Proposal sponsors provided a brief synopsis of their proposal to the panel, a summary of comments made in external reviews, and discussed their proposed response to the external reviews. Council staff then solicited feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns. Council staff also solicited feedback on any existing or future synergies with other Gulf restoration activities. The proceedings of the meeting for this proposal are summarized below.

Texas

Texas Land Acquisition Program

Feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns:

Monitoring and data management: More information is needed about monitoring and data management strategies.

- The BAS panel agrees that Texas has appropriately addressed this comment.

Monitoring budget: No funds are allocated to monitoring in the budget.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Monitoring and adaptive management: Additional details are requested on the monitoring plan, with environmental parameters and links to a comprehensive adaptive management or decision-making structure.

- The BAS panel agrees that Texas has appropriately addressed this comment.

Uncertainties: More information is requested regarding uncertainties beyond the control of the State of Texas and uncertainty/risk over time is needed.

- The BAS panel agrees that Texas has appropriately addressed this comment.

Land acquisition risks: Additional discussion is suggested for risks related to land acquisition- such as inflation of real estate prices and land loss.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Public ownership risks: It is suggested that given the relative risk of state land ownership versus private, non-profit entities through transfer, there should be a science-based discussion around how private transfer suits the public interest of the citizens of Texas.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Risk mitigation: While a number of strategies to mitigate short-term risks are discussed, there is no mitigation plan.

- The BAS panel agrees that Texas has appropriately addressed this comment.

Long-term risks: It is suggested more information is needed to describe the program's vulnerability to long-term environmental risks.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Risk characterization: It is recommended to reword the statement on page six that begins "There is a slight risk that the acquired land will be affected....", based on the fact that the risk for these areas is high, particularly the ones on the eastern portion of the coast.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

References: Additional references are requested to support the statement on page 6 that, "risks could be overcome".

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Past experience: Clarification is requested on TCEQ's specific role in past land acquisition work.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Lessons learned: It is suggested that the discussion of both past successes or failures should evaluate these elements in a manner where they could be used to guide proposed procedures.

- The BAS panel agrees that the response Texas has indicated will appropriately address this comment.

Panel comments on existing or future synergies with proposed activity:

As highlighted by Texas during their discussion of the proposal, the proposed program could make use of the previously-funded RESTORE Council FPL 1 Strategic Conservation Assessment for Gulf Lands (SCA) tool as a valuable resource to augment the process of identifying opportunities for land acquisition.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Texas Land Acquisition Program for Coastal Conservation
Location (If Applicable): Texas
Council Member Bureau or Agency: Texas Commission on Environmental Quality
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 1
Date of Review: 4/29/20

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Click here to enter text.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
Click here to enter text.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
Click here to enter text.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
Click here to enter text.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
Click here to enter text.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
Click here to enter text.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Yes
Comments:	
Click here to enter text.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Need more information
Comments:	
Selection process conducted by multiple stakeholders has been completed and 10 projects involving land acquisition identified (p.5). Although it was stated that there has been “documented success of previous land acquisition projects in Texas”, it was not explicit that the project proponents themselves have experience in land acquisition or were a part of documented past success.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
Click here to enter text.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
Click here to enter text.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
Click here to enter text.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Click here to enter text.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Click here to enter text.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
Various short-term risks associated with adverse environmental conditions were presented. Socio-economic risks associated with variability in land prices was briefly mentioned. There are a number of briefly stated proposed strategies to mitigate short-term risks, but no mitigation plan per se.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Need more information
Comments:	
Only one citation provided supporting that “risks could be overcome” (p.6).	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Need more information
Comments:	
Pertaining to Question A in this section, there is mention of past success. There is no presentation of failures, and neither successes or failures were evaluated in a manner where they could be used to guide proposed procedures.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
Click here to enter text.	



Please summarize any additional information needed below:
Click here to enter text.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Texas Land Acquisition Program for Coastal Conservation
Location (If Applicable): Texas
Council Member Bureau or Agency: Texas Commission on Environmental Quality
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 2
Date of Review: 05/08/2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Strong mix of citations of peer-review information and publicly-available government reports. Provide a strong foundation for the need and direction of the project.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
Good mix of Texas Gulf Coast-specific literature and broader literature that pertains to the Gulf Coast generally, the environmental impacts of coastal protection and restoration, and scale of global climate change. All are integrated well into the basis for the project.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
Click here to enter text.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Need more information
Comments:	
As compared to the Florida Gulf Coast Resiliency Program and associated land acquisition proposal, this proposal is thinner in terms of providing an understanding of associated risks and uncertainties. Good discussion of near-term risks like land prices and the impact of natural events on acquired land but no mention of uncertainties beyond the control of the State of Texas or how to factor in uncertainty and risk over a longer time period.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
Clear evidence in proposal of an integration of Texas Gulf Coast-specific information and broader information that pertains to the Gulf generally and global climat change.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Need more information
Comments:	
Since this proposal is tightly focused on land acquisition over a four-year period, not sure how well this question applies to the project scope of work.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	
As mentioned previously, it would be helpful to see a deeper discussion of near-term and long-term risks and uncertainties and how those will be factored into prioritization for land acquisition.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
Reference to Texas' previous successful experience acquiring and managing land at this scale.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
Proposal is clear on the number of acres to be acquired, priority locations, and metrics for achieving acquisition objectives.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
Land acquisition process is described well, focuses on fair market appraisals and acquisition from willing sellers. Proposal describes a more collaborative acquisition approach as opposed to large-scale eminent domain.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Need more information
Comments:	
Proposal is not clear on metrics beyond number of acres acquired or under easement and monitoring section is short and largely says "we will monitor the land". While there is general narrative on the environmental benefits of coastal management, no specific environmental metrics are included and there is no broader discussion of the "why?" behind the acquisition other than relying on literature that points to the benefits of land acquisition and management on coasts.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Yes in terms of success metrics that pertain to the amount of land acquired and placed under management. This is a direct link to the RESTORE Act and the Comprehensive Plan. But, as discussed above, there is no discussion of environmental metrics or what the expected outcomes will be of this land acquisition.	

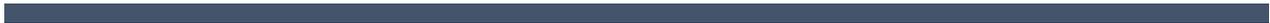
Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
Proposal is short on detail about long-term environmental risks, largely focuses on near-term risks like land price and the potential for land to be impacted by natural events.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Focus of proposal in terms of risks and uncertainties is on the short term, particularly implementation issues like the price of land and the potential impact of climate/weather events on acquired land.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
Click here to enter text.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
Proposal mentions track record of success in Texas with acquiring and managing land tracts like those mentioned.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Need more information
Comments:	
This proposal really focuses on the specific implementation task of acquiring land. No real development of a monitoring plan, no mention of environmental benefits/metrics, and no links to a more comprehensive adaptive management or decision-making structure. This proposal is just for land acquisition so is adequate for that, but would be helpful to know how that acquisition will fit into a broader coast restoration and protection strategy for Texas' Gulf Coast.	



Please summarize any additional information needed below:
Proposal generally works for acquisition of land along Texas' Gulf Coast. The proposal is thin on the purpose of the acquisition and how that purpose will be measured. I am assuming there is a large Gulf Coast Resiliency Program in Texas (as proposed for Florida) that this acquisition work can be tied into.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Texas Land Acquisition Program for Coastal Conservation
Location (If Applicable): Texas
Council Member Bureau or Agency: Texas Commission on Environmental Quality
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 3
Date of Review: May 11, 2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Yes, the justification and documentation is very nicely done. I particularly appreciate the sentence using the Calnan 1995 reference as it is excellent justification for the project.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
The information is specific to the Gulf and Texas in particular.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
The literature sources are used quite nicely, with reference to specific habitat types in Texas.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Need more information
Comments:	
<p>The primary risk discussed is land acquisition-risks. This could be a bit more specific. In particular, although it is somewhat suggested in the text, a related risk is the inflation of real estate prices. Based on statements made in the proposal about specific habitat types and also Fig 1 map of the proposed locations, there is likely a known slate of potential land purchases. If all of a sudden, there is an extra \$31.8 million available, and land owners know this, then there may be price inflation. Please address how this will not happen or what are the ways to remediate it.</p> <p>Another is land loss. Land could be purchased under the State of Texas ownership, but then it converts to water. I assume this would remain State of Texas legally. But, there could be differences in public access rights and usage of the tract. The State can fence in an acquired tract that is land, but when it</p>	

becomes water it will fall under different laws and regulations, for example oyster reef ownership or rights to production. Same with things like oil impacts, etc.

Another is: what is the relative risk of State land ownership versus private, non-profit entities through transfer. The proposal states that land ownership will ultimately be the State or sometimes private, non-profit entities. For example, The Nature Conservancy. Please address how private transfer suits the public interest of the citizens of Texas. What will be the criteria for this choice? This is a bit of a black box of risk, as it currently stands.

Also, state how with sea level rise or other changes likely in the future, the choice of whether land stays State vs. other private entity, will affect legal implementation of things like Submerged Lands laws/regulations.

The proposal was short in general, and likely has sufficient space to address these issues.

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
Yes, the description of ecosystems and habitats, and changes occurring – all were well-justified with the science.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	

Yes, the science is well-done in this proposal.

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	
There could be a bit more scientific literature used in the section on risks, with respect to the choice of public versus transfer to private ownership. I would imagine there is some document somewhere that can address this decision calculus.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
I know the answer to this question is 'yes', but the proposal should better document the applicant TCEQ's experience in this area of land acquisition. I would assume this is Texas General Land Office's (another agency) territory. Why not use GLO to implement the details, is this the plan? Either way, specify and document this experience or connection a little better.	

Question B	
Does the project/program have clearly defined goals objectives?	Need more information
Comments:	
<p>The land acquisition goal is very clear.</p> <p>However, at the very beginning of the proposal, land management is discussed as a goal. However, the remainder of the proposal does not seemed geared towards this potential expenditure of the funds. There is a lot more risk in this potential objective of management. How would this happen, what types of activities are we talking about, what agency is implementing that?</p> <p>My personal suggestion is to cut out the management part – just go all in on land acquisition. Or better specify how what you mean by management is very initial phase of management only. I do not think this proposal needs to get into long-term management of these lands. If long-term management is funded, then describe more what, who, how, etc. Address those risks. If it is not, then tell us how it will be funded or picked up by current State entities or funds or programs.</p>	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
<p>The methods of site selection, bureaucracy involved, were well documented. There could be more on the final paragraph of the “Proposed Methods” on page 5. This is a nice paragraph stating 3 steps on how the land will be acquired, but please give us just a bit more.</p> <p>Also, if land management is funded, describe its methods. They are completely missing if it is part of the project, as stated near the beginning of the proposal. Again, if you mean only very very initial management, describe what that means exactly and again address it here in the Methods section.</p>	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those	Yes

benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	
Comments:	
The ecosystem services and project benefits are well-documented.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
The metrics are outlined.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
As mentioned several times above, if management is a major funded activity, the associated risks would need to be better outlined.	
If the project is land acquisition only, then there still could be a bit more about the effects. As it is stated, the proposal says on page 6 "There is a slight risk that the acquired land will be affected..." – this sentence stands out as needing revision. The risk for these areas is high, particularly the ones on the eastern portion of the coast. The spirit is correct here, ie, this risk is one reason why you want to buy these areas, because they need to be better conserved, managed, or at least purchased to avoid bailing out private interests who make a poor decisions. However, the wording needs to be changed. This part is a bit weak.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
There could be a bit more on this, but it was generally well done. See question 4 above.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
Yes, the project is based on recent science and information.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
This could be a little more clear, TCEQ has not traditionally been in the land acquisition business to my knowledge. Either way, please document better here.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Need more information
Comments:	
<p>The monitoring and adaptive management section is very weak. No funds are allocated to monitoring. I don't see how this really gets done unless there is funding or some other mechanism promised that can achieve this requirement. The statements of monitoring using the Calnan citation are generic. There is little here that is convincing.</p> <p>If the proposal is about land acquisition only, then this becomes much more simple. Just monitor the land acquisition process. Maybe also promise a little of the below as well.</p> <p>If the proposal includes management, this this is more complicated. How are the activities monitored? Maybe do an intial survey of the land, just a simple habitat type accounting by acreage, promise some aerial photos,etc. The State does this all the time anyways.</p>	

Please summarize any additional information needed below:
<p>Overall, this is a worthy proposal that is well-documented scientifically. It does need a few revisions and specification about some of its objectives and according risks, as follows:</p> <ol style="list-style-type: none"> 1. State whether the objective is land acquisition, or land acquisition + management. Management, if included, is not well-described in the Methods, risks sections, nor monitoring sections, and it is not clear how this happens. TCEQ does not seem to have done land management in the past for this type of large scale conservation at least not to my knowledge. If other agencies or private entities are involved, describe how this takes place. I suggest limiting the funded activities to land acquisition. This will make the proposal much more compliant and risk-averse. 2. Either way, describe the short-term land acquisition risks a bit more, as mentioned above. These include real estate inflation risks, risks when transferring properties to private, non-profit interests, etc. Obviously, as stated above, if you include management as an objective, the risks become much larger and that needs to be addressed as well. 3. Long-term risks need a bit of buttoning up, if we are talking land acquisition only. They need a lot more, if management is an objective. 4. The monitoring is cursory as written. There is no funding allocated to it. Either (a) this is insufficient, or (b) this is being outsourced in some unexplained manner. Explain. 5. Spell out the acronyms in the project abstract and throughout the proposal text. This will better enable the public and those from other states on the Council to better understand. Many of the acroynms are only locally-relevant, but either way they need to be spelled out.