

## **MEMO**

To: Aransas County Navigation District

From: G&W Engineers, Inc.

Date: October 01, 2020

RE: Engineering Beneficiary Justification and Engineering Project Justification Memo for Bulkhead Improvement 2020 CDBG-MIT-Harvey Competition Application

The Aransas County Navigation District (ACND) jurisdiction is along the Texas Coast where it meets the Gulf of Mexico in Aransas County. The ACND preserves and protects the coastal features of the county. The infrastructure they maintain serves as the first line of defense for those residing in Aransas County. Cove Harbor and Rockport Harbor are the sites designated as needing bulkhead improvements. The proposed project sites are located on the front lines in areas that severe storms regularly affect. These improvement projects are needed to reduce the effects of future disasters to the area and serve to provide the ACND with resiliency to better protect the residents they serve.

Cove Harbor is a navigational harbor and serves as the only industrial park of Aransas County. The Harbor has many tenants that play a big part of the commercial, industrial and service sectors in the Rockport community. The roles and employment opportunities it provides includes: boat storage, small and large boat repair, restaurants, barge onload/offload/storage in the oil and gas industry, industrial companies and the fishing industry with shrimp boat docks and boat ramps. These are just a few of the roles of the tenants, which directly affect a large part of the coastal county's economy. The harbor's localized economy is a vital employment sector for local economy and many jobs for low to moderate wage earners. Furthermore, a large portion of the Cove Harbor site has a significant impact on low-middle income residents in many different ways. The harbor is located solely in a large area of low-middle income residents. Also, this same area is located within storm surge hazard areas. This combination leads to high protentional for devastation and the reasoning for hardening of the harbor's boundaries. The harbor serves to protect the surrounding vital wetlands of the state and one of the largest nurseries of shrimp, crab and other important species from potential devastation. The dynamic of having an industrial and commercial harbor located near these important ecological features makes securing of the land masses of the harbor of great importance. Any compromise of the bulkheads or flooding of these areas could be detrimental to the environment and impact the employment of many low to moderate income citizens of Aransas County.

Rockport Harbor is a site that includes bait stands, shrimping boats, boat slips and public fishing access among other uses. This area and the protection these bulkheads afford, protects much of the community's vital infrastructure, more specifically, public service sectors. All citizens including the low to moderate income depend on the services provided by the businesses and local governmental agencies that are protected by this infrastructure and defense line. The harbor protects critical

infrastructure which is infrastructure that the community uses to survive. Some of these critical facilities include: police headquarters, Fire Department, schools, churches and the jail among other critical facilities. Protection of the critical facilities and with them being located within storm surge areas, makes the proposed project of the utmost importance. The site also acts as a wave break and protects the nearby roadways and properties from the destructive tidal and storm surges. Similar to Cove Harbor, Rockport Harbor has a large portion of the site and beneficiary area that affects a significant proportion of low-middle income residents.

Large portions of both harbors are within the 100-yr flood plain and will remain vulnerable to future flooding and storm surge events without infrastructure improvements to protect the sites and mitigate the potential future devastation. The project will provide flood resilience, as well as, erosion resistance to each specified site. This is accomplished by increasing the strength of the walls and shorelines by bulkheading, which protects the land, business and citizens landward.

The projects proposed for both sites are critical for the community and more specifically low-middle income residents who depend on these areas. It is important that the ACND secure funding to properly mitigate these risks and allow for continued use and safety by these already majority limited residents.

As touched upon above, the function of the structures is to protect the Cove Harbor and Rockport Harbor in two ways: the first being **to protect the shoreline from wave action** and the second being **to retain soils behind the walls**. Some important ancillary duties would also include by nature of virtue: **protection of life, health and infrastructure directly adjacent to the wall, as well as, those residents who depend on the harbor more specifically being low to moderate income residents**.

### Past

Since its inception, Cove Harbor has been subject to repetitive damages due to declared disasters. Storm water has caused damages to the land and building structures of the tenants of the Cove Harbor site location over the past decades. Many of the sections of the sheet piling and sections of the cap, in the Cove Harbor site area, have been significantly undersized and inadequate for proper hardening of the shorelines. ACND has replaced damaged sections of the bulkhead in the past as necessary to keep a certain level of protection from floods and erosion. The repair work done has largely been limited by the available budget of ACND. The Rockport Harbor site has been maintained throughout the years. However, due to the age of the infrastructure in place and its lack of surge intercepting capacity, it has been limited in functionality. The Rockport Harbor shoreline has remained susceptible to past storm events.

### Present

The site is currently still at risk from erosion-based damage due to the condition of the bulkheading at both sites. Recently, some sections of the bulkhead have been replaced due to damage and life expectancy issues at Cove Harbor. Even with regular and thorough maintenance being performed on the existing bulkheading and shorelines at both sections, a majority of the sections are needing to be replaced as it is nearing the end of its life expectancy and not suited for large storm events. Some temporary measures have been put in place to stop further shoreline erosion at both sites, but further improvements are necessary to insure the longevity of both sites, as well as, the general safety of the day to day activities. All of the residents and tenants have been affected by the damages to the bulkhead and remain at risk. The impacts include natural changes to the size and location that are available for boats to dock along the harbor, as well as, the safety of the workspace of the dock side workers. Even the general

public and those that are in the low to middle income have been negatively impacted with the damages to the site. They remain at high risk of storm surge effects and a potential catastrophe should the harbors infrastructure be pushed landward into the residential areas and local ecosystems. ACND has also lost tenants due to the shoreline and bulkheading issues currently at the sites. These industries have left the harbor to find more favorable conditions in nearby coastal communities and cities.

### **Future**

To increase the flood resilience, storm surge impacts, shore erosion resistance and prolong the longevity of the existing lands of the Cove Harbor and Rockport Harbor sites, the Aransas County Navigation District is planning to replace the existing bulkheading at sections specified in the exhibits. This is to include approximately 7,000 linear feet of increased strength and height at Cove Harbor and approximately 825 linear feet at Rockport Harbor. This is to ensure that the shore and land masses are protected from erosion and improve the general safety of the residential areas near by making them better for the general community of Rockport and those low to moderate income residents. By replacing the bulkheads, the structural integrity of the new bulkhead can be improved significantly (over existing conditions) to reduce the future chance of failure of the bulkhead. The mitigation of these damages at both project sites increase the community's prosperity and safety during unfortunate disaster events. This project will mitigate the possibility of Cove Harbor's land from silting in the Intra Coastal Water Way and interfering with intra-state commerce. The project will also protect all of the environmentally sensitive ecosystems that are near to the harbor. The project at Rockport Harbor will mitigate impacts from disaster's and the critical infrastructure the project will protect. G&W proposes the improvements outlined in sheet numbers 1 & 2 of the G&W CDBG-MIT Exhibits. It is G&W's professional opinion that the project proposed will have a positive impact to a majority of low-middle class residents, as well as, ensure proper mitigation measures are in place to protect the health and safety of the residents and surrounding important ecology during future events.