



AGENDA MEMORANDUM

January 16, 2017

Corpus Christi Business and Job Development Board Meeting

DATE: January 11, 2017

TO: President and Honorable Board Members,
Corpus Christi Business and Job Development Corporation

THROUGH: Margie C. Rose, City Manager

FROM: J.H. Edmonds, P.E., Director of Engineering Services
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UPDATE

Engineering Services Monthly Project Updates

BACKGROUND:

The current active projects are listed below with the monthly activity shown.

1. Salt Flats Levee Project/ FEMA Mapping:

Project History:

- In 2012 through 2014, the City submitted FEMA Certification Guidance Document report and began an assessment of the impact of FEMA's new FIRM maps.
- Beginning in 2015, Staff revised the engineer's scope to better adapt a strategy to support identifying existing deficiencies, corrective actions and validation of the FEMA FIRM maps in lieu of "certifying" the systems. This is a result of the changes from the FEMA moving from the Provisional Accreditation Levy (PAL) to the Levy Accreditation Mapping Procedure (LAMP).
- June of 2015, Type A Board approved HDR MSA contract.
- July of 2015, engineer contract approved by City Council.
- August of 2015, meeting with FEMA was held on August 26th to discuss the LAMP and several task orders were negotiated. (See Task Orders Below)
- Task Order No. 2 was conducted with the consultant and was completed.
- A workshop was conducted with City, AE, and engineer, on January 17th, 2016.
- The engineer prepared a proposal for Task Order's No. 3 and 4. The SOW of the Task Order #3 is to develop a new 2D hydraulic model for the downtown flood protection area The SOW of the Task Order #4 is to develop conceptual design of improvements for the Salt Flats

Levee since the Salt Flats Levee is treated as freeboard deficient under FEMA's LAMP guidelines.

- Task Order's No. 4 and 5 was development by the engineer. The SOW of the Task Order #5 is to develop preliminary design of Museum Floodwall Replacement.
- The HDR Vulnerabilities Assessment was reviewed at the March 2016 Type A Board meeting.
- The City approved Task Orders No. 3-5 and the HDR Vulnerabilites assessment was finalized and the Engineering Department is worked on the CIP Budget.
- The City requested a proposal from geotechnical engineer to provide geotechnical testing.
- A geotechnical investigation is underway and the overall completion of task orders 3-5 is 90, 75, and 75 respectively complete.

Task Orders:

1. Update and Finalize Phase 2A Report (Complete)
2. LLPT Participation/Flood Protection System Vulnerabilities Identification (Complete)
3. Salt Flat Levee 2D Hydraulic Model (90% Complete)
4. Conceptual Design of Improvements for Salt Flat Levee (75% Complete)
5. Preliminary Design of Improvements for Salt Flats Levee (75% Complete)

2017 Progress:

- Task Order No. 3 was completed and the hydraulic model has been sent to FEMA for comments. **(See Attachment #1 – Salt Flats Levee TO #3 Hydraulic Model)**
- Task Order No. 4 Salt Flats Preliminary Design Memo was submitted in December 2016 and will be finalized in January 2017.
- Task Order No. 5 Museum Floodwall Preliminary Design draft design memo was submitted to City for Review. City will finalize in January 2017. **(See Attachment #2 – Salt Flats Levee TO #5 Museum Flood Wall)**
- The City issued a RFQ to select consultants for 6 Type A Projects (See bullet 5 for additional information). The City has received RFQ submittals and is currently reviewing them.

2. Barge Dock Project:

Project History:

- The August 2012 contract with LJA (RVE) for **\$309,870.00**, defined their scope as a forensic assessment of the barge dock and the adjacent sloped seawall in order to pursue improvements identified in the 2012 CIP. The scope also included collaboration with the Barge Dock stakeholders to determine if the Barge Dock should continue to function as designed or if additional uses should be considered. The future CIP Funds identified at that time totaled **\$8,350,000**. The first phase of the assessment has been completed by LJA (RVE) and they are requesting to move forward with the Wave Load Analysis and Structural Stability Analysis.
- The improvements originally were planned to include raising the elevation of the barge dock by 2', constructing a relief platform to prevent the new fill from surcharging the existing bulkhead, developing a stepped terrace area to reduce wave run-up onto the adjacent

roadways during storms, and developing additional parking and other amenities.

- As of 2015, it was recommended that the deficiencies be corrected and the major alterations be deferred to allow for more critical flood protection upgrades.
- August of 2015, Engineering Services initiated discussions with the engineering consultant, LJA (RVE), to develop a scope of work for repairs to address deficiencies identified during the condition assessment. Any further betterments to the barge dock are being put on hold until requirements can be better defined.
- A proposal was requested and received from LJA for fees with the recommended improvements required to sustain the structure in its current use (2016).
- A final condition assessment report was prepared by LJA.
- The City received a proposal, which was approved, from the consultant and negotiations were finalized for the design phase services to make repairs to the barge dock (2016).
- The preliminary submittal and OPCC (Opinion of Probable Construction Cost) was received in September. A review meeting was held in October 2016.

2017 Progress:

- Consultant has prepared 100% drawings and construction documents (December 2016) and are currently being distributed for City review (January 2017).

3. McGee Beach Renourishment/ Boat Basin Dredging Project:

Project History:

- This project includes data collection, final design, permitting, and construction of beach nourishment for 1,800 feet of beach. The GLO will manage the project and contract with a professional service provider (HDR) to prepare the construction plans. The City will enter into an agreement with the TGLO to provide matching funds for the design and construction of the project. Based on discussions with Cameron Perry with HDR, the beach does not currently require nourishment and the nourishment of North Beach is moving forward separately.
- In 2014, funding was approved and the Coastal Erosion Planning and Response Act Project Cooperation Agreement (PCA) would allow for the Texas General Land Office (GLO) to develop a design for the nourishment of McGee Beach.
- In 2015, the City staff met with GLO and the design consultant to discuss reducing beach re-nourishment demands in an effort to reduce cost and improve beach conditions. Based on the evaluations McGee Beach re-nourishment can be deferred and North Beach is scheduled for re-nourishment this year.
- August of 2015, Engineering Services staff met with GLO's consultant about planning and permitting. The City may assume responsibility for this project from GLO and link it with other area project needs such as the boat basin dredging and breakwater repairs.
- September of 2015, Engineering Services will bring a proposal to expand the scope of this project or to create a new project for the breakwater repairs.
- A meeting was held during the month of September 2015 with Cameron Perry of HDR Engineering to formulate a new dredging and beach renourishment project.

- After consulting with HDR in February 2016, it was recommended that a feasibility study be conducted prior to initiating the design phase.
 - HDR's proposal for the feasibility study was reviewed by Engineering Services in March 2016, and the contract was presented to the Type A Board during the May 2016 meeting.
 - Type A Board approved the contract at the June 2016 meeting.
 - The contract was originally being prepared for City Council action, but it was discovered the contract only needed Type A approval.
 - A kick-off meeting was held on September 19, 2016 for the study phase.
 - Field work was completed and recommendations have been prepared.
 - Final report has been reviewed. Sealed version due prior to January Type A Board Meeting.

2017 Progress:

- Final report has been received. **(See Attachment #3 McGee Beach Renourishment Tech Memo)**

4. McGee Beach – Breakwater Safety Improvements

Project History:

- In 2009, HDR prepared a report recommending repairs and improvements to the Breakwater. The scope as we know it based on this study and includes removing the portion of the breakwater and replacing it with a 6' wide walkway over stone and repairing the damaged portions of rest of the walkway.
- The Breakwater structure provides wave dissipation reducing wear and tear on the sea wall and protects the Marina facilities. This structure includes a concrete cap that allows citizens to walk and fish from it. Since 2009, the deterioration has continued such that the structure is experiencing minor failures and presents potential safety risks to travel to and from the structure. Parks and Recreation continues to provide maintenance; however, the deterioration is beyond economical maintenance capabilities.
- Engineering Services recommends approval for major repairs to the structure for approximately **\$1.8 Million**. Engineering Services developed preliminary plans that phases the improvements to restore the safety and structural integrity. This may also include minor improvements to enhance the use of the structure by tourists and for fishing purposes. These improvements will help fortify the seawall against wave attacks by preventing failure of the breakwater and excessive erosion of McGee Beach. The proposed improvements consist of demolishing the existing elevated walkway and constructing a new breakwater and walkway in its place. The total costs associated with these repairs/improvements was estimated at **\$1,769,875** in 2009. For the Breakwater at McGee Beach the Seawall Maintenance Capital Improvement Plan Budget shows:
 - \$730,000 for 2019/2020
 - \$3,570,000 for 2020/2021
 - \$3,000,000 for 2021/2022
- The deteriorated concrete stairs to the breakwater structure were repaired by Parks and Recreation in June of 2015.

- Engineering services received a proposal from HDR to update the 2009 study of the breakwater. The goal is to obtain an updated work scope based on the current condition of the breakwater and current pricing for the repairs/upgrades.
- The repaired breakwater section scope of work is as follows:
 - 25% of the existing walkway will likely need to be partially removed
 - Construct/place rock ballast (smaller stones) to fill gaps between larger stone and provide a base for proposed concrete walkway
 - Build a new walkway 2ft wider and 1ft higher than the original. The new walkway will be 6ft wide.
 - Install additional amenities along the breakwater walkway. These include:
 - Electrical utilities and lighting along the length of the breakwater
 - Signage, trash receptacles, fish cleaning station(s) and other amenities
- The engineer submitted a proposal for the \$19,000 to prepare a study of possible improvements and costs.
- The proposed AE agreement was presented to City Council in February 2016 to approve \$19,000 to update the report with a more detailed scope and fee.
- The study was kicked-off on February 11, 2016 and a draft report was submitted and was review by Engineering Services. The report was distributed to Type A for the May meeting.
- The City received the draft ELR on March 30th, 2016 and met with the consultant to review the draft on April 20th, 2016. The review comments were provided to the consultant and were incorporated into a final report will be presented to the Type A Board at the May meeting.
- A presentation of the findings was made to the Type A Board at the June 2016 meeting. Repair recommendations were added to the CIP (Capital Improvement Program).
- Approved in CIP.

2017 Progress:

- The City issued a RFQ to select consultants for 6 Type A Projects (See bullet 5 below). The City has received RFQ submittals and is currently reviewing them.

5. Projects Currently Under RFQ (Posted in November 2016)

- Seawall Capital Repairs
 - The Corpus Christi Seawall was originally constructed from 1939 to 1942. With the initiation of the Seawall Maintenance sales and use tax, a major project was completed in 2007 to address advanced levels of deterioration of the Seawall system. That project was completed for a cost of \$43.4 million. The funding levels programmed in the CIP are anticipated to address routine maintenance issues. A subsequent major reconstruction is shown to occur after the expiration of the current one-eighth cent sales and use tax. This project will assess the seawall and develop the maintenance repair activities and develop & prioritize.
- Salt Flats Levee Improvements
 - The Salt Flats Levee System (originally referred to as the Backwater Levee) is an integral component of the downtown flood protection system. The levee requires improvements and maintenance to ensure that the system will function as originally designed. The levee is susceptible to various model of failure. Additional Study is

underway and improvements are planned that would be sufficient to be certified by FEMA as a freeboard deficient reach. This means that although the system would not afford the level of protection required to prevent overtopping in a 100-year event, it would not be vulnerable to catastrophic failure. There has been a complete preliminary study that initiates the proposed.

- Repair on Marina Breakwater at McGee Beach
 - Proposed improvements consist of demolishing the existing elevated walkway and constructing a new breakwater and walkway in its place. The existing rock breakwater and walkway will be repaired and raised. These improvements will help fortify the seawall against wave attack by preventing failure of the breakwater and excessive erosion of McGee Beach. Construct and place rock ballast (smaller stones) to fill gaps between larger stone and provide a base for the new concrete cap. Build new cap wider (assumed here to be 2 ft. wider) and higher (assumed here to be 1 ft. higher) than original.
- McGee Beach Nourishment/Boat Basin Dredging
 - The proposed improvements consist of nourishing McGee Beach in order to improve potential storm damage reduction at the seawall. A wider beach will help the seawall survive a storm of longer duration or greater intensity. Sand may be trucked in from upland sources, such as quarries near the Nueces River, or dredged from the marina or bay. This project would address beach nourishment as well as shoaling issues in the marina.
- Science and History Museum Flood Wall
 - This project is to construct a new floodwall (or a coastal structure) that would follow a “hypotenuse” alignment between the existing Promenade and the USACE Bulkhead. The project would also backfill the triangle to make it function more like a coastal structure. This would also provide additional land area for future use.
- Kinney and Power Street Pump Station Improvements
 - The downtown flood protection system relies on two pump stations, Power Street Pump Station and the Kinney Street Pump Station, to service this drainage basin during a significant storm event. Previous design and studies for Downtown Drainage projects included a new storm water concrete interceptor box with new inlets that was constructed in 2007 along Water Street to allow transfer of flows between the two stations, and replacement of the Kinney Street pump station in 2009. Preliminary studies indicate that a third pump station is required to meet the 100-year event. This project evaluates the requirements and capacity to determine the feasibility of interim solutions to maximize the capacity at the Power Street Pump Station before adding the major investment of the third pump station. The project should include 2D modeling to better define the demands to enhance the reliability and capacity of the downtown storm water pumping system.