



**CITY COUNCIL AGENDA REPORT**  
**APPOINTMENT ITEM (5:00 PM)**  
**AGENDA ITEM NO. D.1**

**DATE:** October 6, 2020  
**TO:** City Council  
**FROM:** Rosemarie Gaglione, Public Works Director, (805) 385-8055, rosemarie.gaglione@oxnard.org  
**SUBJECT:** Resolution to Affirm City Commitment to Seawall Funding. (10/10/5)

**RECOMMENDATION**

That the City Council adopt a resolution affirming the City of Oxnard's commitment to share the repair/replacement costs associated with the Mandalay Bay seawalls in the amount of 50% of the total repair/replacement costs with the funding mechanism to be determined at a later date. (Public Works and Transportation Committee approved 3-0)

**BACKGROUND**

*Executive Summary: Between 1968 and 1973, 743 single-family attached and detached homes and 37 City-owned greenbelts were constructed to create the Mandalay Bay community. At the time of construction, seawalls were built to create waterways throughout the newly built homes. Developers built the seawalls according to the building codes in force at that time, which were inferior to today's building codes regarding seismic activity and soil and structure responses. The materials used to construct the seawalls have adversely reacted to the marine environment and began to degrade within 20 years of completion. Over the last 30+ years, hundreds of repairs have been made to the seawalls to maintain their integrity. The City will continue to make repairs to the seawalls to ensure their integrity until such time that a funding mechanism for the costs associated with replacement can be agreed upon.*

*In the "Mandalay Bay Seawalls Capital Improvement Program: Phase C" prepared by TranSystems Corporation (TranSystems), repairs were proposed to be made to the seawalls to extend the lifespan of the existing infrastructure. Repairs included the removal of degraded concrete, repair of weep holes and concrete jacketing of pilasters. Estimates for these repairs were in excess of \$86 million dollars, which may be closer to \$135 million when adjusted for inflation. However, these repairs did not account for seismic activity or the potential for liquefaction in the soil during a large seismic event.*

*In contrast, the April 2020 TetraTech study provided more comprehensive recommendations for seawall replacement. The recommendations offered by TetraTech included installing panels and tie-back walls designed according to the most current California Building Code, which would withstand seismic activity and provide the new system with a 75-year life span. A final geotechnical study is currently underway to confirm that the tieback option will be viable given soil conditions in various locations.*

*An alternate approach would be to perform repairs, similar to the TranSystems recommendations, and monitor the seawalls for signs of movement, at which time that particular section of seawall would be replaced. Currently, there is no imminent danger of failure to the seawalls. This would allow the City to move forward with a phased approach for the replacement work and funding for this project.*

*City staff, NBS Government Finance Group (NBS), NHA Advisors and residents from the Channel Islands Waterfront*

*Homeowners Association have been meeting over the last three years to discuss funding methodologies for the repair and replacement of the seawalls. Additional, more robust public outreach will follow.*

*A simplified comparison of all construction methods analyzed by TetraTech is included as Attachment 1 to this report.*

## **BACKGROUND**

When the homes in Mandalay Bay were constructed, the developer installed reinforced concrete Boise and Zurn style seawalls to create the Oxnard waterways portion of the Channel Islands Harbor. This allowed the developer to create lots and install foundations for residential development. The Boise system consists of restrained precast concrete panels held in place by precast concrete “T” shaped pilasters, which are anchored to a cast-in-place concrete footing. The Zurn wall is a cast-in-place concrete cantilevered retaining wall supported on a continuous cast-in-place concrete footing. The footing is supported by a row of vertical timber piles and a row of battered timber piles. The vertical piles are spaced at 6 feet on center and the battered piles at 12 feet on center. Waterways Zone 1 Mandalay Bay consists of 7.8 miles of seawalls; 3.4 miles of Boise walls, and 4.4 miles of Zurn walls.

On May 26, 1970, by Resolution No. 5,121, the City declared its intention to form an assessment district for the maintenance of waterways and landscaping for Tract 1904 and 2026-1. On June 16, 1970, by Resolution No. 5,144, the City Council approved the establishment of Waterways Zone 1 assessment district for the maintenance of the waterways and landscaping on public rights-of-way within Mandalay Bay. On November 23, 1971, by Resolution No. 5,487, the City Council approved the addition of Tract 2026-2 into the assessment district. On October 26, 1976, by Resolution 6,830, the City Council approved the addition of Tract 2026-3 into the assessment district. The waterways district was formed pursuant to the Improvement Act of 1911 to recover the City’s cost of the maintenance of landscaping, seawalls, and other authorized improvements.

Due to the adoption of Proposition 218 by California voters in 1996, the City is precluded from increasing assessments within a district without majority vote and protest procedures. Mandalay Bay is currently maximum assessed, and the waterways assessment district formation documents did not include a consumer price index (CPI) escalator to fund increasing maintenance costs or to fund expenses associated with seawall replacement.

Beginning in 1992, staff began to address multiple issues with both types of seawalls. Within a 20 year period, between 1972 - 1992, the City had made more than 500 individual repairs to the seawalls, including repairs to foundation piles, concrete wraps for pilasters, cracks and spalling, slope protection, and backfilling. The walls are approximately 50 years old and require a phased strategic plan for their replacement over the next 25 years, with some continued maintenance simply due to the marine environment.

On March 1, 2011, the City entered into an Agreement A-7390 with TranSystems to assess the condition and develop a plan for capital repair of the seawalls in Mandalay Bay. The first amendment to Agreement A-7390 was approved by City Council on February 7, 2012 to collect adequate samples for the engineering assessment of all seawall exposure segments. This strategic investigation was completed on August 20, 2012.

TranSystems identified 200 repairs that were not to exceed \$1,000,000. On April 9, 2013, the City Council approved Agreement A-7581 between the City and the Channel Islands Waterfront Homeowners Association (CIWHA) to share costs for the repairs to the Mandalay Bay seawalls. The City agreed to pay 50% of General Fund's costs with a not to exceed amount of \$500,000. CIWHA agreed to utilize funds from Mandalay Bay Waterways Zone 1 Assessment District to pay the remaining 50%.

On July 26, 2016, the City Council approved 7401-16-PW with TranSystems for on-call marine engineering services for the Waterway Districts of Mandalay, Westport and Seabridge in an amount not to exceed \$929,500 over a three-year term. Additionally, the City Council approved task orders for permit process and engineering design for the West Hemlock Street seawall repairs. Task Order 1 was for permit processing and project approval by regulatory agencies. The second task order was for geotechnical testing, design, construction monitoring, and follow-up performance evaluations.

On July 18, 2017, the City Council approved the first amendment to TranSystems Agreement 7401-16-PW in the amount of \$137,600 for a new not to exceed amount of \$1,067,100 for on-call marine technical engineering service with TranSystems. The scope of work for this amendment included the development of new repair concept details and the refinement of existing repair details, development of specific project areas and timelines, budgetary cost estimates, and attendance at meetings to discuss recommendations between the City and CIWHA.

On October 17, 2019, Public Works released a Request for Bid (“RFB”) for the Pilaster Jacket Repairs at the Mandalay Bay Seawalls project. Bids were originally due on December 3, 2019, but due to a lack of responses by manufacturers to contractors with regards to the specialized concrete required for this project, the bid deadline was extended to January 7, 2020. On February 18, 2020, the City Council awarded Agreement A-8206 to Harbour Constructors Company in the amount of \$634,000. The Notice to Proceed was issued on March 30, 2020 and the work is underway.

## **DISCUSSION**

In December 2017, TranSystems completed the "Mandalay Bay Seawalls Capital Improvement Program: Phase C" report for the City. As part of Phase C, TranSystems included a survey and recommendations for repair of weep holes, pilasters, and walls. These recommendations included items such as the installation of concrete pilaster jackets, removal of the outer 1-inch of concrete on the existing walls, then wrapping them on the water side with resin and fiberglass-reinforced plastic sheet pile. In essence, the recommendations were a temporary repair plan to extend the life of the seawalls, but they would ultimately need to be replaced regardless. The cost for this non-structural work was estimated to be \$86.5 million over 25 years, not adjusted for inflation. Furthermore, these recommendations did not provide any solutions for the seismic vulnerability of the seawalls, as they were built before current California seismic codes.

In early 2018, the Public Works Director reviewed the accumulation of documents provided by TranSystems over the years. Due to the TranSystems cost estimates and methodology for repairs, it was recommended that the City proceed with a value engineering process for the seawall replacement to confirm the accuracy of the information and costs provided. It is good practice to conduct a value engineering process on construction projects with estimates that approach \$100 million.

On October 10, 2018, the City released a Request for Proposal (“RFP”) for Mandalay Bay Seawall Repair Feasibility Study and Phase 2 Construction Documentation for 3900-3966 West Hemlock Street. Proposal submission closed on November 6, 2018. Due to a lack of responses from qualified proposers, a revised RFP was released on November 21, 2018. PW 19-25R closed on December 10, 2018. On February 5, 2019, City Council approved a budget appropriation for \$163,431 to be used for engineering services for this project. These funds were used to execute TetraTech Agreement 8554-19-PW for \$142,114 which was approved by the City Manager.

In March 2019, TetraTech began work on the analysis of the Mandalay Bay seawalls. Part of their analysis required observing the walls at the annual low tide, which was a critical piece of the data necessary to accurately analyze the deterioration of the seawalls. This added additional time to the process because the annual low tide was in November of 2019. The "Mandalay Bay Seawalls Repair Conceptual Study and Feasibility Analysis" was completed in early 2020. In this study, TetraTech identified the deterioration of the walls as vertical cracking and spalling of pilasters, cracking to the Boise walls, and surface erosion to the Zurn walls. Several locations displayed an alkali-silica reaction which is a chemical reaction that causes cracking and spalling when concrete is exposed to moisture. Additional concerns include risks to the seawalls from seismic activity and liquefaction of soils during a major earthquake.

Based on this effort, which included cost analyses for replacement of the seawalls, TetraTech recommended two options: installation of panels and tiebacks or installation of cantilever sheet pile. Installation of the tieback option would consist of installing a new panel in front of the existing wall, filling the space between the two walls, and installing tie-backs that extend down into the competent, non-liquefiable soils. The other option, installation of the cantilever sheet pile, would include the installation of new sheet pile in front of the existing wall using a press-in method (which causes less vibration and noise) and filling the gap between the two walls. The cantilever method would require the new wall to be placed

approximately eight feet in front of the existing wall. It is unlikely that Mandalay Bay can accommodate the loss of waterway space for the sheet pile option in all locations. Therefore, the tieback method is being recommended as the first option.

Although several options were analyzed for replacement of the seawalls, it was determined that the tieback method was the best solution for Mandalay Bay to ensure the greatest area of navigable waters in the smaller back basins. TetraTech estimates that the replacement costs for the tieback option would be approximately \$4,277 per linear foot for the Boise walls and \$4,155 for the Zurn walls. It is estimated that the total costs for the replacement of the seawalls are approximately \$200,000,000 not including inflation over the life of the project, which is estimated to be between 25 years for replacement of the seawalls and additional maintenance beyond 25 years. The project would be completed in phases, and funding will be assessed and allocated based on the project stage. The life span of the new seawalls is expected to be at least 75 years.

The TetraTech study considered multiple factors when detailing the overall costs shown on page 34 of the "Mandalay Bay Seawalls Repair Conceptual Study and Feasibility Analysis." Construction costs were determined in linear feet and ranked in Rough Order Magnitude (ROM). Maintenance costs were estimated and ranked based on calculations for the life of the seawall and are relatively low compared to construction costs. Design criteria were evaluated based on seawall life expectancy and the ability to withstand seismic activity. Constructability rates the ease of construction for each scheme. The disruption to existing docks was looked at, studying how construction would impact the docks and determining if the construction could be done at or near the existing wall. Regulatory factors considered the difficulty in obtaining approval for the construction of the new seawalls. Wall capacity evaluated each design concept and its ability to increase the seawall's capacity as it relates to seismic activity. The appearance was ranked on final repairs, and it is somewhat subjective. For the Boise walls, the tieback method tied for #1 based on the calculated metrics with cantilever soldier piles and panels; however, the soldier pile method was almost double the cost. For the Zurn walls, the tieback method ranked #1 overall.

For a simplified analysis in tabular form, Attachment 1, Seawall Options, offers a condensed, side by side evaluation.

TetraTech has been in communication with TranSystems during the evaluations; the previous work is still valuable and the results are being utilized. There is another repair option, which is to perform work that is similar to the method originally proposed by TranSystems to extend the life of the seawalls. The cost would also be similar at approximately \$85 million in 2020 dollars. This approach would be the removal of the the outer 1" to 1-1/2" inches of concrete on the face of the seawall, and then the application of 4" of marine resistant concrete on the surface. TetraTech has recommended that dowels be drilled into the existing face of the seawall to help the new concrete adhere better. There would be no fiberglass wrapping, which will ensure that the new face of the seawall remains visible for inspection. While this method would extend the life of the seawalls, it would not offer any additional seismic resistance. The walls would continue to be monitored and if any early signs of failure were detected, a replacement project would be designed.

City staff will continue to meet with homeowners and a more robust outreach plan will be developed as soon as we have the results of an additional geotechnical study to confirm the feasibility of the tieback replacement method in all areas.

City staff, NBS Government Finance Group (NBS), NHA Advisors, and residents from the Channel Islands Waterfront Homeowners Association (CIWHA) have been meeting over the past three years to discuss funding methodology to satisfy the obligations of paying for the replacement of the seawalls. The current Mandalay Waterways Zone 1 assessment district can not support replacement efforts for the seawalls.

Leadership from CIWHA, through their annual meetings and person-to-person coordination, have been engaging and educating their community on the needs and costs of the seawall replacement. Through the City's contract with NBS, the City will work with residents on community outreach and surveying to determine the best funding mechanism. Through NBS's CivicMic platform and a dedicated Seawalls page on the City of Oxnard's website, staff will be notifying residents of community meetings, producing resident surveys, and publishing continuous content regarding the development of the seawalls project and funding.

## **STRATEGIC PRIORITIES**

This agenda item supports the Infrastructure and Natural Resources strategy. The purpose of the Infrastructure and Natural Resources strategy is to establish, preserve and improve our infrastructure and natural resources through effective planning, prioritization, and efficient use of available funding. This item supports the following goals and objectives:

Goal 4. Ensure proper construction and maintenance of infrastructure to provide maximum benefit with lowest life cycle cost following CIP plans.

Objective 4a. Implement CIP plans.

Objective 4b. Catch up on deferred maintenance for City facilities.

## **FINANCIAL IMPACT**

While approval of this resolution affirms the City Council's commitment to 50% of the final seawall obligations, there is no immediate financial impact to the General Fund or Mandalay Bay residents. Approval of funding for this project will be based on the approval of the Capital Improvement Project by the City Council and when a funding mechanism is determined for both the City and resident portions of this project. The City will commit to funding 50% of the replacement cost based on the City's financial ability to sustain the project. Multiple funding mechanisms will be explored.

The TetraTech study provides an Engineer's cost estimate for a 25-year replacement plan, however, bonding for this phased approach can potentially be extended to a 40 or 50-year model.

Public Works continues to seek grant funding to offset the City's financial obligation to the seawall replacements. The estimated total cost will be approximately \$200 million. The impact to the City would be \$100 million.

## **COMMITTEE OUTCOME**

The Public Works and Transportation Committee approved 3-0 on July 28, 2020, to approve the staff recommendation with one change (approving only 50% commitment, striking CFD formation request) and to forward the item for Council approval.

*Prepared by: Jeri Cooper, Special Districts Project Manager*

## **ATTACHMENTS**

1. Seawall Options
2. Seawalls City Commitment Resolution
3. Districts Map and Legend
4. Mandalay Bay Proposed Exploration Plan
5. ATTACHMENT A: Mandalay Bay Seawall Repair Feasibility Study\_FINAL DRAFT
6. City Commitment to Seawall Funding Presentation