



Meeting Date: 02/07/12

ACTION	TYPE OF ITEM
<input type="checkbox"/> Approved Recommendation	<input checked="" type="checkbox"/> Info/Consent
<input type="checkbox"/> Ord. No(s). _____	<input type="checkbox"/> Report
<input type="checkbox"/> Res. No(s). _____	<input type="checkbox"/> Public Hearing (Info/consent)
<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____

Prepared By: Lou Balderrama, City Engineer

Agenda Item No. **I-5**

Reviewed By: City Manager JRD

City Attorney ant

Finance JLC

Public Works

DATE: January 13, 2012

TO: City Council

FROM: Rob Roshanian, Interim Public Works Director
Public Works Department

SUBJECT: **First Amendment to the Agreement with TranSystems Corporation for the Evaluation and Work Plan for Repairs and Replacement of Seawalls at the Inland Waterway of the Mandalay Bay District (Agreement No. A-7390)**

RECOMMENDATION

That City Council:

1. Approve and authorize the Mayor to execute the First Amendment to the Agreement with TranSystems Corporation to increase the amount by \$355,000 from an agreement value of \$287,568 to \$642,568 and to extend the expiration date from February 8, 2012 to February 8, 2013, to assess the condition and develop a work plan for the repair and replacement of seawalls located at the inland waterway of the Mandalay Bay District (Agreement No. A-7390).
2. Approve a Special Budget Appropriation of \$277,500 including \$177,500 from the City's General Fund Balance to the Waterway Assessment District Fund and \$100,000 from the Waterway Assessment District Fund Balance for Phase (B) Investigation of marine engineering services to assess the condition and develop a long term work plan for maintenance and repair of the seawalls.

DISCUSSION

On February 22, 2010, the City issued a Request for Proposal (RFP) for professional engineering services for the inland waterways of the Mandalay Assessment District, Westport Community Facilities District (CFD) No. 2, and Seabridge CFD No. 4 waterway communities. The RFP also requested that firms make a proposal to assess the condition and develop a work plan for the capital repairs and replacement of the seawalls located in the Mandalay Assessment District. The RFP was distributed to five regional consulting firms with a closing date of April 1, 2010.

All five consulting firms submitted proposals and met the minimum level of qualifications. An oral panel consisting of Public Works/Capital Projects Management (CPM) staff and members of the Mandalay Home Owners Association reviewed the submitted proposals and interviewed the five firms. The panel determined that TranSystems was the most qualified candidate to perform the services.

Agreement for Marine Engineering Services between the City of Oxnard and TranSystems Corporation for the Evaluation and Work Plan for Repairs and Replacement of Seawalls at the Inland Waterway of the Mandalay Bay District (Agreement No. A-7390).

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The Mandalay Bay District is a residential waterfront development including properties adjacent to navigable waterways connected to the Channel Islands Harbor. The developed lots are protected from the water by means of reinforced concrete seawalls constructed in the late 1960s and early 1970s.

The City has regularly retained a consultant to monitor and evaluate the condition of the more than 32,000 lineal feet of precast and cast-in-place concrete seawalls. Professional underwater divers have performed underwater surveys and investigations of the entire Mandalay Bay seawalls foundations and slope protection areas, most recently in April 2009.

Phase "A" Findings:

The recent Phase A investigation conducted by TranSystems Corporation resulted in a technical evaluation, interpretation of complex test results and a better understanding of the current condition of the walls. This information facilitated the development of an innovative repair technique to extend the usable life of the structures well beyond their current useful life. The inspections utilized visual and non-invasive, non-destructive techniques (impact echo, long wave penetrating radar) that provided valuable data on the condition of the internal steel reinforcement, an assessment of the concrete deterioration, crack depth and corrosion of key structural joints. These evaluations were done on a reasonably small statistical sample of specific structures. As expected the survey showed large variations of reduced structural integrity between the walls. Phase A determined that the walls could be salvaged. The steel reinforcement in the walls had less corrosion than anticipated, but can degrade quickly if the concrete protecting it continues to deteriorate. This information coupled with the individual wall locations/orientation in the bay, and other pertinent data, provided a scaled evaluation of different wall sections allowing for a remediation plan designed to the specific wall-segment needs rather than a generic "one-size-fits-all" approach.

Phase "B" Strategic Investigation

The Phase "B" strategic investigation is an engineering approach of sampling which collects adequate sampling for the engineering assessment of all seawall exposure segments but does not include evaluation of each individual property.

The scope of work includes:

- Visual and physical sampling of selected seawall exposure segments for rating conditions and identifying the highest priority segments for the first repair phase.
- Geotechnical investigation sampling the site and provide soils and seismic loading criteria.
- Wall stability analysis to determine the safety factor of each seawall exposure wall segment by comparison of the Demand load to the Capacity of the walls in their current condition.
- "Risk" and "timing" assessment.
- Comprehensive characterization of the walls and an engineered remediation plan will be developed after the proposed Phase B investigations are performed and analysis of the data is completed.

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Phase "A" Findings:

The recent Phase A investigation conducted by TranSystems Corporation resulted in a technical evaluation, interpretation of complex test results and a better understanding of the current condition of the walls. This information facilitated the development of an innovative repair technique to extend the usable life of the structures well beyond their current useful life. The inspections utilized visual and non-invasive, non-destructive techniques (impact echo, long wave penetrating radar) that provided valuable data on the condition of the internal steel reinforcement, an assessment of the concrete deterioration, crack depth and corrosion of key structural joints. These evaluations were done on a reasonably small statistical sample of specific structures. As expected the survey showed large variations of reduced structural integrity between the walls. Phase A determined that the walls could be salvaged. The steel reinforcement in the walls had less corrosion than anticipated, but can degrade quickly if the concrete protecting it continues to deteriorate. This information coupled with the individual wall locations/orientation in the bay, and other pertinent data, provided a scaled evaluation of different wall sections allowing for a remediation plan designed to the specific wall-segment needs rather than a generic "one-size-fits-all" approach.

All of the walls inspected had a reduction of structural integrity to a certain degree. There is evidence that a few of the wall sections may need immediate attention to preclude potential failure.

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- Comprehensive characterization of the walls and an engineered remediation plan will be developed after the proposed Phase B investigations are performed and analysis of the data is completed.

The Utilities Task Force, at its November 17, 2011 meeting, recommended staff bring to Council the Phase B investigations in order to identify the walls requiring immediate attention. This approach will allow the City to develop the CIP plan, determine the costs and financing required to implement over the planned time period. This First Amendment is for the Phase B Strategic Investigation only and does not obligate the City's General Fund to fund any of the seawall repairs recommended by TranSystems Corporation.

FINANCIAL IMPACT

The cost for Phase "B" services performed under this First Amendment is not to exceed \$355,000 through the extended one-year term ending February 8, 2013. Fifty percent (50%) or \$177,500 is proposed from available funds of \$77,500 in the Waterway Assessment District Fund Account Number 121-3108-803-8210 and \$100,000 from Waterway Assessment District Fund Balance. The remaining \$177,500 is proposed to be funded from the general fund for the Phase B Strategic Investigation only. The attached Special Budget Appropriation includes an allocation of \$177,500 from the City's General Fund Operating Reserve and \$100,000 from the Waterway Assessment District Fund Balance. The Waterway Assessment District Fund available fund balance is \$917,000. Attachment No. 3 provides a summary of the General Fund Operating Reserve.

Attachment #1 - First Amendment to Agreement No. A-7390

#2 - Special Budget Appropriation

#3 - General Fund Operating Reserve

FIRST AMENDMENT TO AGREEMENT FOR PROFESSIONAL SERVICES

This First Amendment ("First Amendment") to the Agreement for Professional Services ("Agreement") is made and entered into in the County of Ventura, State of California, this 24th day of January, 2012, by and between the City of Oxnard, a municipal corporation ("City"), and TranSystems Corporation ("Consultant"). This First Amendment amends the Agreement entered into on February 8, 2011, by City and Consultant.

City and Consultant agree as follows:

1. Pursuant to Section 12 of the Agreement, the parties hereby agree that the Agreement shall be extended an additional one-year period. Accordingly, the expiration date set forth in Section 12 of "February 8, 2012" is deleted and replaced with the date "February 8, 2013."
2. Exhibit A of the Agreement is supplemented by Exhibit A-1, attached hereto and incorporated herein by reference.
3. Section 14 a. is supplemented with the following, "During the period from February 9, 2012 through February 8, 2013, City agrees to pay Consultant an additional \$355,000 for services provided in the attached Exhibit A-1."
4. As so amended, the Agreement remains in full force and effect.

CITY OF OXNARD

CONSULTANT

Dr. Thomas E. Holden, Mayor



Tony Rahiminan, PE, Senior Vice President
TranSystems Corporation

ATTEST:

APPROVED AS TO INSURANCE:

Daniel Martinez, City Clerk



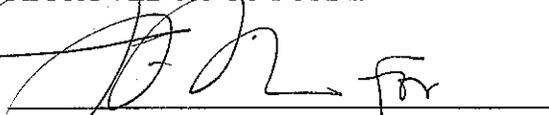
James Cameron, Risk Manager

APPROVED AS TO CONTENT:

APPROVED AS TO FORM:



Rob Roshanian, Interim Public Works Director

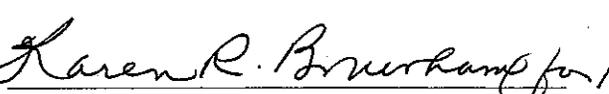


Alan Holmberg, City Attorney 1-13-12

APPROVED AS TO AMOUNT:



Lou Balderrama, Project Manager



Edmund F. Sotelo, City Manager

**EXHIBIT A-1
CITY OF OXNARD
MANDALAY SEAWALL ASSESSMENT AND CAPITAL IMPROVEMENT PROGRAM
(PHASE B – STRATEGIC INVESTIGATION)**

SCOPE OF WORK

PHASE “B” – STRATEGIC INVESTIGATION (Total Fixed Fee \$355,000)

Strategic Investigation - An engineering approach of sampling which collects adequate sampling for the engineering assessment of all seawall exposure segments but does not include evaluation of each individual property. The Waterfront Engineering Team will acquire as much information as possible by tactically selecting inspection locations relative to the changing seawall segment environmental exposure conditions and practical points to start and stop construction repair phases. By visual and physical sampling each of these segments the team will rate their condition and identify the highest priority segments for the first repair phase. Concept repair details and a budgetary cost estimate are included for this first phase of repair work. The team will continue to collect data in support of the overall Capital Improvement Project (CIP) program, as practical. Geotechnical Engineering Services will sample the site and provide soils and seismic loading criteria. A Stability Analysis is included to determine the safety factor of each seawall exposure wall segment by comparison of the Demand Load to the Capacity of the walls in their current condition. This risk will be indicated by a Factor of Safety, where 1.00 represents the point where Demand = Capacity.

A) Underwater Condition Survey: - \$89,000

TranSystems' Engineer/Divers will perform a rapid “Level I Swim-By” inspection of the entire seawall below the mean tide line and record data for each seawall exposure segment to match the Above Water Visual Inspection. Locations with structural concern will be recorded but not property by property. Based upon the findings of the Phase A inspection, the crew will focus on the following areas:

- Check for major damage to the seawall and foundation system below water which may allow soil loss or affect wall stability.
- Identify areas where existing slope protection is absent and appear critical to future performance. The adjacent seafloor elevation and slope are a key component of wall stability and protection of the timber support piling from marine borer attack. TranSystems' will estimate the mudline slope of the seafloor adjacent to the seawall at areas where more than 16” on the Boise wall footing is exposed and more than 24” of the Zurn cut-off wall is exposed. Areas with existing Sheet Piling Repair are considered “okay” and will not be documented.
- Check and map undermined foundations which allow marine borer access to the timber support piling. Measure the size of voids to estimate repair volumes for use in the CIP program.

- Rate the concrete deterioration occurring below water at each seawall exposure segment for use in prioritizing repairs.
- Measure the depth of the commonly occurring gap between the Zurn seawall footing and cut-off wall which has the potential to allow marine borers access to the timber piling.
- Underwater photographs will be provided of typical conditions whenever water clarity is fair at the time of inspection. If conditions do not allow photography, one additional attempt at photography will be made near the end of the job.

B) Above Water Condition Survey:

WDP Engineers will lead this inspection effort with the assistance of TranSystems for development of the wall rating system.

B.1 Rapid Visual Inspection - \$46,000

At a Minimum of 325 Engineer Selected Wall Locations: Sample to include the worst condition wall out of an approximate 160' sample spacing for the Zurn walls and 90' sample spacing for the Boise Walls + the 2nd exposure face of all corner lots since this is a transition of exposure condition and potential termination of a work area + all street ends which commonly are transitions of exposure and represent potential termination points of work. Using Microsoft EXCEL spreadsheets, record the following for each location:

- Visually rate the structural condition of the wall face on a relative scale of 1 to 5 for the portion exposed by the tide at the time of inspection. Inspection work shall be coordinated with the tides such that, at a minimum, the wall above mean tide elevation can be rated and combined with the notes of the Underwater Inspection Team to formulate an overall rating.
- Visually estimate/quantify the deterioration (% of visual spalling across wall length, band elevation of damage, worst spall depth, largest spall size). This is confirmation of the visual rating.
- Note occurrence of major structural damage such as open joints, broken panels, wide cracks and large corrosion concrete spalls. No mapping for repair will occur at this time. Minor defects and damage, such as shrinkage cracks and impact nicks, which do not warrant repair, will not be recorded.
- Wall rotation, where observed by an offset between two sides of a construction joints, will be measured with a digital "Smart Level" and tape measure to record the wall position on each side of the joint.
- 1 photograph of each location.

B.2 Physical Testing (Drill Inspection) – \$16,000

At approx 140 Wall Exposure Segments: Drill 3 holes per wall exposure segment, approximately 1 inch diameter, at elevation of worst visual deterioration and 1 foot above and below. Stop drilling when sound (hard) concrete is encountered. Testing locations shall coincide with Rapid Visual Inspection Locations. Using Microsoft EXCEL spreadsheets, record

the following for each location:

- Elevation of test location above footing
- Depth to sound concrete
- Quantify or rate the ease of drilling. Ex: record the drilling time to reach that max depth

B.3 Non-Destructive Testing (NDT) – \$36,000

At approximately 140 Wall Exposure Segments: **Impact Echo Testing:** 15 data points at worst visual damage location per segment. **Resistivity Testing** - 20 data points at worst visual damage location per segment.

Record the following for each location:

- impact echo: qualitative notes based on testing observations
- resistivity: tabulated data

B.4 Core Sampling and Petrography – \$16,000

At 10 locations: cores will be selected by the Engineer from previous NDT inspection locations. They will reflect the range from Good to Poor of observed deterioration conditions occurring in the community as a whole. Cores will allow visual observation of the interior concrete and provide calibration of the Drill Inspection observations. Four cores will be sent for Petrographic Analysis for further insight into the concrete deterioration mechanisms.

Record the following for each location:

- Location & elevation above footing
- Photograph of each core prior and after sample is taken
- Observation notes of concrete core and hole conditions.

B.5 Invasive Probing of Base of Zurn Walls – \$21,000

At 8 Engineer Selected Locations: observe reinforcement at base of wall near construction joint to investigate presence of microcell corrosion, which cannot be determined using non-destructive testing. Each location will involve the following:

- removing concrete at the base of the Zurn Wall from the waterside (Demo by TranSystems Contractor Team Member)
- expose at least 1 vertical reinforcing bar
- document condition of bar, including cross-section loss
- patch concrete within 48 hours (Patch by TranSystems Contractor Team Member)

Record and provide the following for each location:

- location
- photographs
- field notes

C) Project Planning, Coordination & Meetings: - \$22,000

C.1 Project Planning – Schedule the staff, and make arrangements for their equipment and housing needs. Plan scaffolding & site access for the Geotechnical Engineer and Demolition Contractor to access vacant lots for their work. Arrange boat mooring and equipment storage needs while on-site. Develop electronic spreadsheets for data collection which can then directly populate a weighted factor spreadsheet for ranking each seawall segment. TranSystems and WDP will collaborate on the data collection categories and their relative weighting. Review the site as a whole to select the limits of each seawall exposure segment for sequential numbering critical for cohesive data collection. Coordination of the Above Water, Under Water, Geotechnical Borings and Demolition Contractor whom need to work the site and tidal windows in concert.

C.2 Coordination meetings - The project is anticipated to have active work for 3 months. There will be direct interaction with hundreds of homeowners because we will be working in very close proximity to their private docks, boats and decks, and we believe City Staff and the Community will have questions and concerns which will need to be addressed. City Staff will need to stay abreast of our activities to effectively respond to the resident's questions and concerns. The TranSystems Team proposes to attend the monthly meetings held between the City and the HOA which occur the month prior and during our active period of field work. The Project Manager will review the schedule and discuss a "look-ahead" of activities with each of the sub-consultants prior to such meetings. The senior on-site staff member of TranSystems or WDP will attend such meetings to present this information. These meetings will allow the City and the HOA to ask questions, raise concerns, gain project updates and discuss the schedule for the upcoming month. We anticipate this to be (4) 2 hour meetings.

C.3 Kick-off and Presentation of Findings Meetings. Prior to the start of field work the TranSystems Project Manager will attend in person, and the head of each subcontractor inspection team by teleconference, a Kick-off Meeting with the City and the HOA. At the conclusion of the Phase B field work, the Project Manager and Team Leader from WDP will attend a Presentation of Findings meeting with the City and the HOA to review, discuss or present our findings and steps to move forward with the Capital Improvement Program and/or repairs. An open discussion of prioritization, reasoning and timing of the repairs will occur and this information can then be used by the City and the HOA to determine the appropriate next steps.

D) Condition Report & Deliverables: - \$54,000

A maximum of four (4) hard copies and (2) electronic PDF copies on CD of the following will be provided and include the following information:

D.1 Executive Summary and Executive Cost Estimate Summary.

D.2 Condition Descriptions – with photographs of typical conditions above and below water.

D.3 Structural Stability Calculations - of seawall conditions with and without seismic loads.

D.4 Discussion – of the inspection findings relating to the structural significance of the various damage types and ranked level of deterioration.

D.5 Recommendations for Repair and Strengthening – Repair concept descriptions and sketches.

D.6 Budgetary Cost Estimate – estimate repair quantities for each Concept Repair. Use these quantities to estimate the cost of the Total Repair Program and the Cost of the first Phase 1 (Highest Priority) of that program.

D.7 Site Plans – Colored site plan displaying repair ranking for each seawall segment. Tabular Format of rankings. Site Plan showing proposed repair area for first repair, Phase 1 (Highest Priority) work.

D.8 Field Data – Above and Underwater Inspection Notes – as an Appendix.

D.9 Geotechnical Report –as an Appendix.

E) Geotechnical Investigation & Wall Stability Analysis:

E.1. Subsurface Evaluations – \$28,500. Terra Costa Consulting is the TranSystems Team Geotechnical consultant for this project. We propose a series of Cone Penetration Test (CPT) soundings to investigate the subsurface soil conditions. This testing is suitable for generalizing the subsurface conditions as needed to model the wall for various loading conditions. From this cumulative information, TerraCosta can formulate earth passive and active pressures for use in the seawall stability calculations. Terra Costa will also provide seismic earth pressures and appropriate levels of safety for consideration of wall stability during a seismic event. The new (8) CPT soundings will be taken at representative locations spread throughout the site, typically in vacant lots to minimize disruption. The combined geotechnical database of prior date and new CPT data will provide the necessary criteria to support the wall stability analysis and support the development of design concepts for wall replacement in the Capital Improvement Program. We do not believe new Waterside Borings will yield significant additional insights to justify their considerable additional expense to the City. The dominant issue requiring quantification on the waterside is to determine the amount of material which has been removed by tidal current, vessel and wind wave action, thus exposing the base of the footing. This can be determined by the dive crew during the underwater survey and reported to the geotechnical engineer.

E.2 Evaluate Wall Stability – \$17,500, TranSystems with the assistance of TerraCosta and WDP will evaluate the static and seismic stability of the existing seawalls using the earth, surcharge and seismic pressures provided by TerraCosta. The Structural Engineers of TranSystems and WDP will model various levels of deterioration based upon the finding from their field work. Damaged wall sections will be evaluated for their stability to resist static earth pressure and seismic forces. The findings from this analysis will identify the walls most prone to failure and as-such this information will be a valuable factor in prioritization of repairs as the CIP Program is developed. Analysis work will include both Zurn and Boise wall types.

E.3 Liquefaction Potential – \$9,000. This site is prone to liquefaction damage, as are all similar developments using hydraulically placed fills within close proximity to groundwater. The Geotechnical Report shall comment on the sites' liquefaction potential and potential for damage to the two types of seawall construction.

CITY OF OXNARD

REQUEST FOR SPECIAL BUDGET APPROPRIATION

To the City Manager:

February 7, 2012

Request is hereby made for an appropriation of total

\$ 277,500

Reason for appropriation: To provide funding for marine engineering services with TranSystems Corporation (TranSystems) to assess the condition and develop a work plan for the repair and replacement of seawalls located at the inland waterway of the Mandalay Bay District. Phase "B" - Strategic Investigation.

<u>FUND</u>	<u>DESCRIPTION/ACCOUNT</u>	<u>AMOUNT</u>
General Fund (101)	RESERVES AND TRANSFERS 101-1002	
	808.87-14 TRANSFERS-OUT / TSFR TO ASSESSMENT DISTRICT	177,500
	Net Effect on General Fund - Fund Balance	<u><u>(177,500)</u></u>

<u>FUND</u>	<u>DESCRIPTION/ACCOUNT</u>	<u>AMOUNT</u>
WATERWAYS ASSESSMENT DIST (121)	INLAND WATERWAYS 121-3108	
	711.79-01 OPERATING TRANSFERS IN / TRANSFERS FR. GENERAL FUND	177,500
	803.82-10 OTHER SERVICES / WATERWAY SERVICES	277,500
	Net Effect on Waterways Assessment District - Fund Balance	<u><u>(100,000)</u></u>



Manager

REQUIRES CITY COUNCIL APPROVAL

CHIEF FINANCIAL OFFICER



Disposition

Transfer by Journal Voucher _____

City Manager

**General Fund Operating Reserve
Fiscal Year 2011-12**

Operating Reserve as of June 30, 2011		\$ 15,648,084
Appropriated Operating Reserve		
McGrath State Beach	\$ 50,000	
Total Appropriated Operating Reserve	\$ 50,000	
Unappropriated Operating Reserve		\$ 15,598,084
Required Operating Reserve to meet 18% Goal		\$ 19,271,880