BUFFALO OUTER HARBOR ACCESS & ACTIVATION CIVIC IMPROVEMENTS

EXISTING CONDITIONS ASSESSMENT
EXECUTIVE SUMMARY

Prepared for:

Erie Canal Harbor Development Corporation

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FINAL REPORT

TWLA

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INTRODUCTION

The Erie Canal Harbor Development Corporation, a subsidiary of the New York State Urban Development Corporation d/b/a Empire State Development ("ESD"), retained the consultant team of Trowbridge Wolf Michaels Landscape Architects, WSP USA, Touloukian Touloukian Architects, Biohabitats, The LiRo Group, Ravi Engineering & Land Surveying, and RJR Engineers/Encorus Group to provide design, bid and construction administration for the ECHDC-owned Buffalo Outer Harbor properties.

The first task was to conduct a property conditions assessment of existing facilities. The sites that were investigated are: the First Buffalo Marina, Michigan Pier, the Outer Harbor parcel, and 901 Fuhrmann Boulevard/Terminal Complex. Refer to Figure 1: Overall Project Area for locations of each of the sites.

This Executive Summary provides a brief outline of the findings of the existing conditions assessment. The existing conditions assessment included the following:

- Asbestos survey and sampling
- Hazardous materials survey and sampling
- Lead survey and sampling
- Mold assessment
- Structural assessments of buildings, structures and slip walls
- MEP/FP system inventory and assessment
- Pavement assessment
- Site utilities assessment
- Phase I and Phase II site environmental assessments

The Phase I and Phase II environmental assessments are addressed in a separate report.

Along with the above investigations, the consultant team was directed to provide opinions of probable costs for repairs and remediation deemed necessary in the near-term to provide code compliance and public safety for all sites and buildings. In addition, four cost scenarios were evaluated for Terminal A.

The following is a summary of findings and costs for each of the above investigations, grouped by site and ordered from north to south. Refer to individual reports for details of findings and recommendations.

Figure 1: Overall Project Area

First Buffalo Marina

The First Buffalo Marina property is located at the northern end of Fuhrmann Boulevard and includes the following buildings: the Marina Office Building and the Marina Maintenance Building.

Site Utilities

The electrical panel board servicing the site power is deteriorating due to weather exposure and should be replaced. Of immediate concern is the open breaker slot in the panel, a slot cover or new breaker should be installed immediately to prevent inadvertent contact with the energized bus.

Figure 2: First Buffalo Marina

Marina Office Building

The Marina Office Building, with drawings dated 2011, is a relatively new masonry-wall building and is in excellent condition. The building structure and roof show no signs of deterioration.

The building does not have a fire protection system and by code does not require one. All plumbing and mechanical systems appear to be in good working condition. Electrical services are functional with minor issues that need to be addressed. Occupant items are accumulating in front of the electrical panel and should be moved to provide the required working space around the panel. The building's panel board is full, and a larger panel or subpanel will need to be installed to support any future additions. Structurally, the Marina Office Building is in good condition.

Marina Maintenance Building

The smaller Marina Maintenance Building, a masonry-wall structure with wood trusses, is in poor condition. The building is showing significant cracking in walls and appears to have significant settlement. The roof is in poor condition.

The building does not have a fire protection system and by code does not require one. There are no plumbing or mechanical systems present. The only electrical concern noted is a welding receptacle has been removed, and wires are hanging freely from a junction box.

Pavements

The driveway and boat storage surfaces of the marina along the Buffalo River, east of Fuhrmann Boulevard and across the street from Times Beach Nature Preserve primarily consist of compacted gravel and weathered asphalt pavement that has unraveled into gravel.

Marina Short Term repairs $27,000

- Minor site electrical work
- Minor building electrical repairs
- Short term structural repairs

Michigan Pier

The Michigan Pier is slated for redevelopment for recreational use. The existing conditions assessment for this location is limited to the inspection of the existing slip walls and the environmental assessments under separate cover.

Slip Walls

Michigan Pier is a man-made slip consisting of sheet pile walls tied together with concrete-encased tie rods and backfilled. The pier is approximately 1,100 feet long by 200 feet wide. Walls are stabilized by piles spaced every 50' and the entire area is backfilled predominantly with sandy soil under a clay cap layer. Tie rods extend across the width of the pier to connect the side walls. Per the drawings, the tie rods are concrete-encased 2"-diameter bars, with turnbuckles every 20'. The tie rods are located approximately 8' below grade at 7' center to center spacing.

An inspection of Michigan Pier was performed to gather data to support a structural assessment and to identify general deficiencies that may require repair. Record drawings of the pier wall construction were available.

The existing tie rods that anchor the sheet piling were found to be in excellent condition. The concrete relieving platform appears to be in very good condition, with no significant signs of cracking or spalling. The sheet pile wall which forms the outer edge of Michigan Pier appears to be in good condition with no noticeable loss of fill material apparent from the water side of the structure. Sheet pile support timbers were found to be in poor condition, however they are not providing significant structural support to the walls. The slip wall concrete cap exhibits cracking and spalling along the top of the wall.

Recommended rehabilitation includes providing a new concrete cap and wall at the southwest corner of the pier, along with spot repair of the sheet pile wall along the north side of the pier. Because the pile support timbers are not structurally required, repair is not recommended at this time.

Michigan Pier Slip Wall Short Term repairs $500,000

- Provide new concrete cap
- Sheet pile wall spot repairs

Outer Harbor Drive Parcel

The Outer Harbor Drive Parcel is the area of land bounded by Slip 2 on the north and Bell Slip to the south. The pavement condition assessment was performed to document the existing condition of all surface pavements, sidewalks and other hardscape. The findings of the assessment were used to provide recommendations to correct the deficiencies.

Pavements

The original asphalt surface of Outer Harbor Drive extends from the Fuhrmann Boulevard roundabout, north to the Event Space parking lots. This roadway does not appear to have been maintained in several decades. There are widespread potholes and alligator cracking throughout the surface.

The short-term recommendations are proposed to be implemented in the first year for the purpose of maintaining or restoring the performance of existing paved surfaces, in accordance with the owner's intended use, for a period of five years. The work recommended is intended to eliminate imminent safety hazards posed to the public in publicly accessible areas.

Two short-term improvement alternatives are proposed for the Outer Harbor Drive parcel: resurface the roadway with a compacted gravel surface, or fill potholes with crushed gravel and apply chip and seal. The estimate below assumes the compacted gravel surface option. The long-term improvements are full depth reconstruction or application of a chip and seal surface. At the parking lot at the north end of the parcel, the existing pavement would require milling and overlay.

Outer Harbor Drive Parcel Pavement Short Term Repairs Approximately $559,000

- Compacted gravel roadway
- Weed removal
- Crack seal and skim coat
- Truing and leveling

901 Fuhrmann Boulevard/Terminal Complex

The Terminal Complex, located at 901 Fuhrmann Boulevard, includes the following buildings; Terminal A, Terminal B, the Administration Building, the Fire Pump House, and the Blue Building. Each of the buildings was assessed for structure condition; screened for asbestos, mold and other hazardous materials; and assessed for condition of building utilities. In addition, a pavement condition assessment and slip wall inspection were performed.

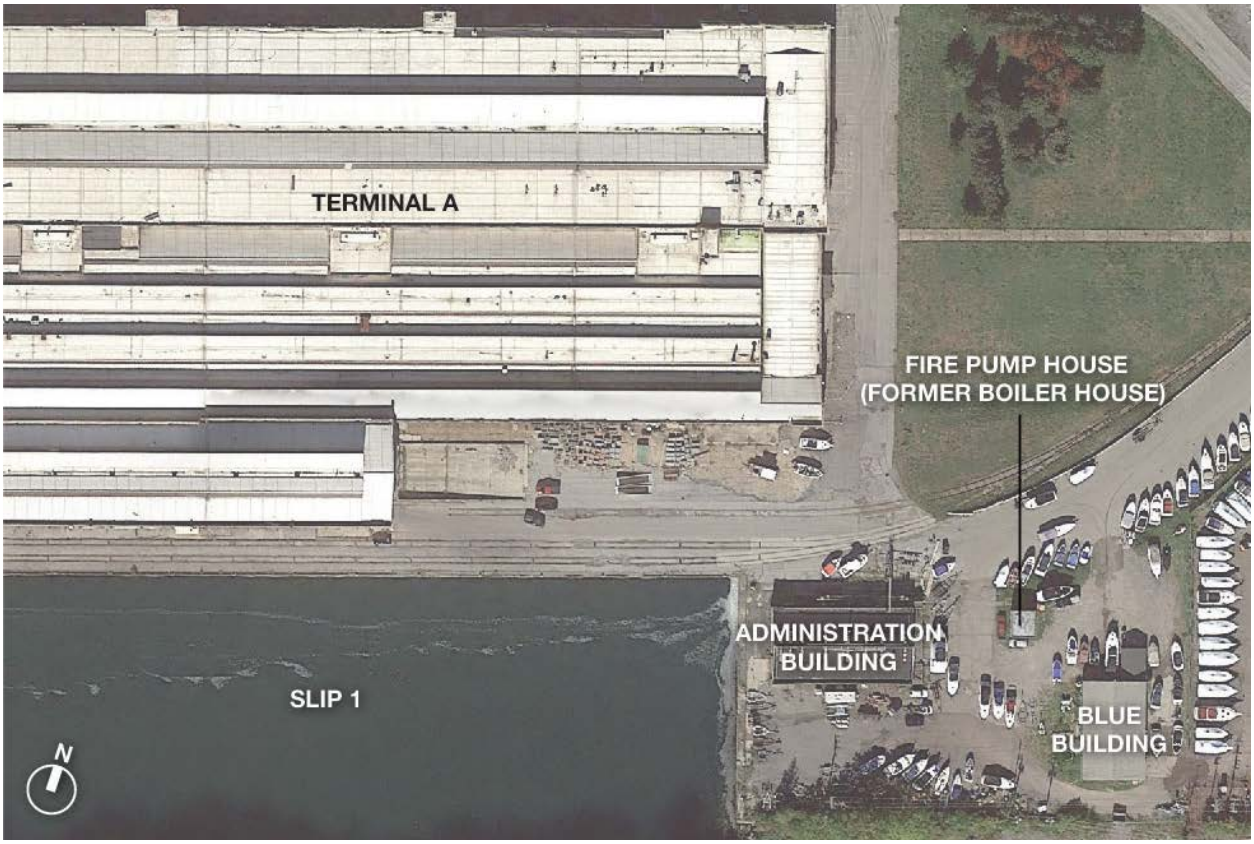

Figure 3: Terminal Complex

Site Utilities

Site utilities are generally in place, but will require some level of effort to reactivate. Fire water distribution is marginal, contributing to code compliance issues. Sewerage systems, including gravity and force mains, have been out of operation for an extended period and it is reasonable to assume the corrosive nature of the system will drive replacement of equipment. Electrically most site lighting is non-functional and only a minor portion of the existing system may be suitable for reuse.

The cost of the site utility repairs and upgrades consist of upgrading the fire protection system that serves all the buildings; investigating and repairing the sanitary sewer systems; and upgrading the electrical infrastructure to serve the fire protection system and safety and emergency lighting. Most utilities are routed through Terminal A and then extended to Terminal B, Administration Building, etc. If Terminal A is demolished, rerouting of the gas, water and sewer systems to the buildings to remain will be required.

The costs of the site utility repairs to bring the buildings into compliance in the short term are included in the Terminal A options below.

Terminal A

Terminal A, the largest of the buildings, is a steel-framed, CMU infilled and brick veneered structure. It includes a high-bay storage area along the south side, first and second floor storage space, and an office area on the east end of the building. A portion of the building is currently being used for short-term boat storage.

Structurally, Terminal A has several areas of concern. While the foundation is in good condition, the columns are in fair condition due to being hit by vehicles, and the roof is rated as poor due to membrane deterioration and failure of the roof drains. The exterior brick face is in poor condition and is a safety concern, as lintels have failed and brick continues to fall off the face of the building. The failure in the brick face also contributes to water infiltration which further deteriorates the building.

The roof of Terminal A is in poor condition due to a torn membrane, failure of roof drains and severe infiltration of water into the building. Roof drain and floor drain repairs would need to occur in the near-term to prevent future deterioration of the roof and other structural members.

A compliance issue has been identified that operable water supply must be provided to buildings that have any form of occupancy. The fire water supply and sprinkler systems should be restored to service. In order to restore fire protection, existing water service to the site will need to be upgraded.

In order to support building stabilization, and allow for the current occupancy to continue, it is recommended that a new electrical system be installed throughout the building, consisting of a new service and associated distribution equipment to supply minimal lighting throughout all areas (including required emergency lighting), power for the sanitary and sump pumps located throughout the building, power to supply heat to the fire water risers to prevent freezing, and power to supply the compressors needed for the recommended dry pipe system.

Terminal A environmental hazards that need immediate remediation include loose asbestos debris, significantly damaged asbestos-containing materials, and mold contaminated building materials. Longer-term hazards would include roofing materials, pipe insulation, and floor tile. Remediation of roofing materials would need to occur if repairs to those roofs are desired.

As part of the existing conditions study, the consultant team was requested to evaluate probable cost implications for four scenarios to address Terminal A, described as follows:

Terminal A Option 1: Maintain Code Compliant Dry Boat Storage Approximately $1,931,000

Repair, rehabilitate and abate building structure and systems as required to permit dry boat storage in a safe and code compliant manner. Assume that no roof repairs are included. Improvements include:

- Repair site fire protection, sanitary pump station and restore site lighting for fall prevention, including inspection and recertification.
- Install fencing to limit footprint of lease area and prevent access to other areas subject to brick façade collapse.
- Perform asbestos abatement and air monitoring.
- Restore building fire suppression system to provide mandatory fire protection for approximately 50% of building. Assume system is dry.
- Install air compressors, hot box enclosures, heaters and fire alarm system.
- Provide new service installation including transformer.
- Install new interior electrical distribution system to support code required lighting, heat, etc.
- Install new safety and emergency lighting.

Terminal A Option 2: Stabilize & Mothball Building Approximately $3,158,000

Stabilize the building to prevent further damage and loss, assume there is no occupancy but interior space is conditioned/equalized with exterior. Work includes the following:

- Repair site fire protection, sanitary pump station and restore site lighting for fall prevention, including inspection and recertification.
- Demolish and replace 20,000 square feet of roof membrane.
- Patch roof membrane in other locations.
- Block and seal monitor windows with insulated panels.
- Repoint and repair brick, masonry and lintels.
- Repair miscellaneous structural cracks and columns.
- Install fencing to limit access to building.
- Perform asbestos abatement and air monitoring.
- Perform mold remediation and monitoring.
- Demolish all carpeting, drywall, etc. materials that hold moisture.
- Repair roof leaders to prevent water penetration
- Provide ventilation.
- Provide new electrical service to support heat trace and ventilation.
- Install minimal safety lighting in electrical equipment areas.

Terminal A Option 3: Code Compliant Shell Building Approximately $17,466,000

Bring the entire building up to code for occupancy as a mixed use office or assembly space, as a ready-to-fit shell. Provide adequate utility infrastructure to support the use. Includes:

- Repair site fire protection, sanitary pump station and restore site lighting for fall prevention, including inspection and recertification.
- Restoration of electrical, fire suppression, gas, water and sewer systems up to Terminal A building envelope.
- Full roof replacement, approximately 374,000 square feet.
- Repair of masonry.
- Fire suppression system for entire building.
- Asbestos abatement and air monitoring.
- Mold remediation and monitoring.
- Reactivate fire protection system.
- Repair roof leaders.
- Correct electrical service deficiencies.
- Provide new interior distribution system.
- Install new safety and emergency lighting.

Terminal A Option 4: Demolish Building — Approximately $13,743,000

This option includes mitigation of all environmental concerns, demolition of all above-grade structure, abandonment of foundation, no excavation or subsurface removals. Work includes the following:

- Asbestos abatement and air monitoring.
- Mold remediation and monitoring.
- Demolish medium voltage cable and equipment.
- Install new electrical feed to sanitary grinder pump.
- Demolish building and dispose.

Terminal B

Terminal B is a metal framed structure that is in good condition. The building is currently unoccupied and the fire protection system is deactivated. The condition of the sprinkler system is very good and requires only minor repairs.

The foundation of Terminal B is in very good condition, as are the columns. The walls and roof are in fair condition and in some locations allow water infiltration.

Reactivation/replacement of the Terminal A sewage pump station equipment will be required for continued use of any restroom facilities in Terminal B, as all waste is routed through Terminal A. Both plumbing and electrical systems are functional. Minimal repairs and upgrades would be required to bring the building back up to code.

The environmental screening identified some mold growth on portions of the interior west wall of the building due to water infiltration, and asbestos-containing materials in pipe joint packing and pipe elbow, as well as a transite flue. It is recommended that the mold be remediated for future occupancy. The asbestos-containing materials are in good condition and do not need to be addressed immediately.

Terminal B Short Term Repairs — Approximately $274,000

- Minimal updates to fire protection system.
- Use of any waste lines in Terminal B will require the site sewerage upgrades. Costs are included in Terminal A options since the work falls inside the Terminal A building.
- Mechanical/air handling maintenance and repairs.
- Minimal upgrades to provide minimal and code required lighting coverage.
- Immediate mold remediation and monitoring.
- Short term structural repairs.

Administration Building

The Administration Building is a steel framed, brick veneered structure that consists of a garage and storage area and office spaces. Overall, the building is in fair condition.

The foundation and steel structure are in fair condition due to water infiltration and damage. Brick veneer is missing mortar and is separating from the supporting structure. The roof is in fair condition due to tearing in the roof membrane and degradation to previous patches. The loading platform on the exterior north side of the structure is in poor condition, with concrete showing significant deterioration and exposed rebar.

Some repairs to each of the building systems will be required to bring to code. Fire protection systems require moderate repairs due to age and configuration of the existing equipment. All plumbing systems appear intact and minor repairs and fixture replacements are expected prior to reuse. Mechanically routine maintenance should be performed and improper past modifications should be corrected. Electrical services are functional, but toward the end of their intended service life and due for replacement.

Minimal quantities of asbestos-containing materials and mold were identified in the environmental survey, some of which will require near-term remediation. Loose asbestos-containing window glazing and caulking on the north and south sides of the garage, and mold growth in the toilet room and adjacent room will need to be addressed.

Administration Building Short Term Repairs — Approximately $149,000

- Minimal updates to fire protection system
- Sewerage investigation to determine discharge. Costs for upgrades unknown at this time pending investigation.
- Heating repairs
- Required emergency lighting, basement and tunnel lighting, and sump pumps.
- Immediate asbestos and mold remediation and monitoring
- Short term structural repairs

Blue Building

The Blue Building is currently occupied and houses a boat maintenance, repair, and storage company. The main portion of this structure is a metal-framed garage, and there is a secondary masonry-wall structure at the north end that contains an office space.

Structurally, the building is in good overall condition. There is minor settlement cracking in the CMU, as well as minor damage to metal panels of the garage. The framing is in good condition with some rust on interior framing members and metal wall panels. The roof of the front office is in fair condition, while the metal deck roof on the garage portion does not show signs of notable damage.

A small amount of asbestos-containing materials were identified in floor tiles. The tiles are in good condition and do not pose an immediate hazard.

The building does not have a fire protection system and is not required to. All plumbing and mechanical systems appear intact and only routine maintenance is expected to be required. Electrical services are functional with only minor housekeeping issues.

Blue Building Short Term Repairs — Approximately $18,000

- Minimal electrical repairs
- Short term structural repairs

Pavements

The paved surfaces comprising the Terminals A and B site consist of a vast expanse of surface parking, driveways and sidewalk. The short-term recommendations are proposed to be implemented in the first year for the purpose of maintaining or restoring the performance of existing paved surfaces, in accordance with the owner's intended use, for a period of five years.

The proposed project intends to improve access for customers of the marine service company that leases the Blue Building. The work recommended also intends to eliminate imminent safety hazards posed to the public in publicly accessible areas.

Terminal Complex Pavement Short Term Repairs — Approximately $65,000

- Mill and overlay the existing south driveway apron
- Remove localized areas of loose asphalt, fill potholes with crushed stone and repave with chip/seal.
- Full depth asphalt surface replacement in area surrounding proposed fuel tank removal east of Blue Building

Slip Wall at Terminals A and B

The slip wall is a 1,700-ft section of sheet piling with a concrete cap along the south and west sides of Terminals A and B. Record drawings, which include sections along each side of the wall, are available and were used as a reference during dive inspection operations.

The dive inspection covered approximately 1,700 feet of the sheet pile wall along the west and south sides at Terminal Buildings A and B. There was a significant amount of organic buildup on all underwater surfaces. There is cracking evident along sections of the upper wall section, but the wall is generally sound. The timber bumpers along the top of the wall and walers just below water level are significantly deteriorated and there is spalling along the length of the wall with exposed rebar. There is a section along the west side of the wall near the southwest corner showing more significant cracking and loss of fill material from behind the wall, which has led to a corresponding sinkhole in the parking lot at that location. Horizontal cracking is evident just below water level, likely a deterioration of the joint between the concrete cap and upper wall, and there is exposed rebar evident in the cracked and spalled areas.

Recommended repairs for the slip wall include the following:

Terminal B Slip Wall Short Term Repairs — Approximately $26,000

- Spot-repair cracks and spalled areas of upper concrete wall as needed to prevent additional section and material loss.
- Repair cracked concrete at various drain pipe locations. If it is determined that pipe needs repair/replacement, resolve accordingly.
- Quay wall at southwest corner will require repair to ensure undermining in the parking lot does not continue and loss of material is halted. Relieving platform should be investigated to ensure settlement has not caused cracking or other damage. Cracking in concrete should also be repaired in this area.

CONCLUSION

The costs of near-term repairs and improvements for the various ECHDC properties are summarized below. The four options for addressing Terminal A follow.

SUMMARY OF COSTS	TOTAL
First Buffalo Marina	$27,000
Michigan Pier	$500,000
Site Pavements at Outer Harbor Drive	$559,000
Terminal A (varies, see option breakdown)	VARIES, SEE BELOW
Terminal B	$274,000
Administration Building	$149,000
Blue Building	$18,000
Site Pavements at Terminal Complex	$65,000
Terminal B Slip Wall	$26,000
TOTAL CONSTRUCTION COST (Does not include Terminal A)	**$1,618,000**

TERMINAL A OPTIONS	TOTAL
Option 1: Maintain Code Compliant Dry Boat Storage (escalated to 2018)	$1,931,000
Option 2: Stabilize & Mothball Building (escalated to 2019)	$3,158,000
Option 3: Code Compliant Shell Building (escalated to 2020)	$17,466,000
Option 4: Demolish Building (escalated to 2020)	$13,743,000

SOURCES

2017 Property Condition Assessment Report. WSP USA, 2017.

Volume I – Structure Assessment
Volume II – Pavement
Volume III – Utilities
Volume IV – Michigan Pier

Access and Activation Civic Improvement Project Comprehensive Study. Ravi Engineering & Land Surveying, PC, 2017.

Asbestos Environmental Screening
PCB Caulk Environmental Screening
XRF Lead-Based Paint Survey
Mold Assessment
Hazardous Material Screening

MEP/FP System Inventory and Assessment. RJR Engineering, PC, 2017.