PERIODIC REVIEW REPORT

FOR

PORT-GREENBELT
SHORELINE IMPROVEMENT PROJECT
CITY OF BUFFALO, ERIE COUNTY, NEW YORK

SITE NO. B-00149-9

Prepared by:

LIRO ENGINEERS, INC.
690 Delaware Avenue
Buffalo, New York 14209

Prepared on Behalf of:

ERIE CANAL HARBOR DEVELOPMENT CORPORATION
95 PERRY STREET
BUFFALO, NEW YORK 14203

Table of Contents

Figures

Appendices

EXECUTIVE SUMMARY

The Port-Greenbelt Project (Site) is 15.83 acres within 164.48 –acre parcel on Buffalo's Outer Harbor Area adjacent to Fuhrmann Boulevard. The Site runs parallel to the shoreline from the Buffalo Harbor Slip to the Terminal B building.

Previous Site investigations determined that both surface and subsurface soils exceeded Part 375 Soil Cleanup Objectives for Commercial Use. A subsequent remedial program was designed to keep contaminated soil/fill from washing into Lake Erie and to prevent direct human contact. The remedial efforts that consisted of the removal of contaminated soil along the shoreline, shoreline stabilization, installation of a soil cover, and the institutional controls that were put in place are meeting this goal.

In October of 2020, additional armor stone (primarily medium and light stone) was installed along a large portion of the shoreline to mitigate shoreline erosion. In November 2020, some of the new stone work was damaged by a large seiche event. Erie Canal Harbor Development Corporation (ECHDC) subsequently cleaned up/replaced stone that had been washed inland, however, there are areas of additional erosion that require repair.

The Port-Greenbelt project is being maintained in accordance with all major elements of the Site Management Plan.

No changes to the Site Management Plan are needed or recommended at this time.

1.0 INTRODUCTION

On April 11, 2012, the Niagara Frontier Transportation Authority (NFTA) received a Certificate of Completion for the remedial program at the Port-Greenbelt Shoreline Improvement Program. The Port-Greenbelt Project (Site) is 15.83 acres within a 164.48-acre parcel on Buffalo's Outer Harbor Area adjacent to Fuhrmann Boulevard. The Site runs parallel to the shoreline from the Buffalo Harbor Slip to the Terminal B building.

This is the sixth Periodic Review Report (PRR) required as part of the Site Management Plan. This PRR has been prepared on behalf of the Erie Canal Harbor Development Corporation (ECHDC), the current Site owner, and submitted to the New York State Department of Environmental Conservation (NYSDEC). This report was prepared in accordance with the requirements in the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation.

2.0 SITE OVERVIEW

The Site is located adjacent to Lake Erie and parallel to Fuhrmann Boulevard, in the City of Buffalo, Erie County (Figure 1). The adjoining property is generally undeveloped in the northern portion of the easement area. The area adjacent to the Easement has been developed with additional trails, a bike park and passive recreational lawn area.

This Site and the majority of the land surrounding it was created as the result of land reclamation and filling starting in 1874 and continuing for nearly 100 years. The land is generally composed of heterogeneous fill including dredged materials from the shipping channel, construction fill, concrete, stone, slag, and other materials.

Most of the 164-acre Buffalo Outer Harbor was once listed as a Class 2 Inactive Hazardous Waste Disposal Site based on preliminary site assessments. Following further investigation, most of the Site was delisted with only the area named the "Radio Tower Area" remaining classified as a Class 2 Inactive Hazardous Waste Site. However, previous Remedial and Site Investigations determined that both surface and subsurface soils exceeded Part 375 Soil Cleanup Objectives for Commercial Use. Based on these findings, NFTA subsequently submitted a Remedial Alternatives Report in support of a Brownfield Cleanup Application for the redevelopment of the Site.

In 2002, an Environmental Record of Decision (ROD) was issued by the NYSDEC which identified the remedial actions necessary for the Site. The specific actions that were taken to implement the remedy in accordance with the ROD included:

- Along the shoreline, concrete, marble, and other stone rubble was removed;
- Contaminated fill and soil was excavated and the slopes were re-graded;
- For the shoreline, excluding portions of the Bell Slip, a geotextile fabric was installed and a heavy, armor stone revetment was constructed;
- Within the Bell Slip, not stabilized by heavy stone, two lengths of approximately 150 feet in length were partially stabilized using jute fiber matting, a toe sock, plantings, and soil/stone mix;

- The upland area was re-graded with soil excavated from the shoreline and a geotextile fabric was installed;
- A soil cover system was constructed consisting of a minimum of 12 inches of clean soil and/or asphalt bicycle/pedestrian trail along the entire upland area of the Site; and,
- An environmental easement was placed on the property, which included the implementation of a Site Management Plan (SMP) and annual certification of the engineering and institutional controls.

In 2014, the NFTA officially transferred the property to ECHDC. As such, ECHDC assumed the responsibility to implement the ongoing obligations described in the Environmental Easement.

3.0 REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS EVALUATION

As described in the sections below, the remedy selected for the Site, construction and maintenance of shoreline stabilization and a soil cover system, is generally effective in ensuring that Site soil/fill does not enter Lake Erie and limiting human contact with Site soil/fill in all areas of the Site, however, extreme storm events (seiches) have occasionally eroded the shoreline cover system and have required repairs.

The institutional controls will limit future impacts. No further remedial goals were established for the Site.

4.0 EVALUATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

Engineering Controls

The specific engineering controls for the Site are:

- The stone revetment along the shoreline and underlying geotextile fabric;
- The stone berm in the Bell Slip and topsoil/soil cover;
- The asphalt pathway; and,
- The soil cover system and underlying geotextile fabric.

No long-term treatment systems were installed.

Institutional Controls

To ensure ongoing effectiveness of the remedy, the NFTA executed an Environmental Easement to restrict land use and prevent future exposure to any remaining contamination at the Site. Development of a Site Management Plan (SMP), which included plans for Institutional and Engineering Controls, Monitoring, and Reporting, was required to evaluate and monitor the remedy.

Specific institutional controls were required to ensure the remedial program continues to prohibit the remaining contamination from entering Lake Erie or coming into contact with humans, including:

- Compliance with the Environmental Easement and the SMP by the NFTA and any successors;
- All Engineering Controls must be maintained as specified in the SMP;
- All Engineering Controls must be inspected as specified in the SMP; and,
- Reporting to the NYSDEC must be done annually for the first three years.

In addition, the Institutional Controls called for Site use restrictions within the boundaries of the Greenbelt, pursuant to the Environmental Easement, which included the following:

- The property may only be used for public passive recreation use provided that the long-term engineering and institutional controls are employed;
- A higher level of use, such as unrestricted or restricted residential, may not occur on the Site without additional remediation and amendment of the Environmental Easement and approval by the NYSDEC;
- Future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- The use of groundwater is prohibited without treatment rendering it safe for the intended use;
- Vegetable gardens and farming on the property are prohibited; and,
- The Site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that (1) controls employed at the Site are unchanged from previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and the environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access the Site at any time in order to evaluate the continued maintenance or any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

Site Visit

LiRo Engineers, Inc. (LiRo) conducted annual Site Visits on October 15, 2019, November 6, 2020, and April 9, 2021 and one post storm Site Visit on December 28, 2020. The Site Visits consisted of walking the approximate 6,250-foot long top edge of the revetment, the entire asphalt path, and the majority of the Bell Slip waterline. During the inspections, notes were taken with regards to the overall condition of the revetment, soil cover system, asphalt path, and Bell Slip. In general, the revetment armor stones at the Site need some repairs and all other engineering controls were in good condition and in compliance with the requirements of the Environmental Easement. Site Visit notes are included as Appendix A and selected photos are included as Appendix B.

Soil Cover

The soil cover is still in good condition except as noted in localized areas at the edge of the revetment. There were localized areas of erosion at the top of the armor stone revetment.

Revetment Armor Stones

The armor stone revetment was in fair condition but showed some areas where smaller stones were displaced by the storm. Geotextile fabric was visible in some of these eroded areas along the edge of the revetment.

In July 2020, a Corrective Measures Work Plan (CMWP) was prepared and work was implemented to improve/stabilize the revetment, however, a subsequent storm event damaged the revetment. Additional rocks were installed in January and February 2021.

A CWMP for additional revetment repair work has been prepared and is provided in Appendix D.

Asphalt Pathway

The asphalt path is in very good condition and is not showing signs of wear.

Bell Slip – Stone Berm and Soil/Topsoil

Generally, the slip looked to be in good condition with significant portions of the area covered with stones and vegetative cover. It was noted that most of the small trees/shrubs near the water's edge had been cut and removed by beavers. No animal burrows were found. There was also a small amount of debris (mostly driftwood) noted along the water's edge.

A few areas on the east side and south side of the Bell Slip showed signs of soil sloughing and erosion. It is thought that this gap is either due to erosion during periods of high lake levels where water overtopped the revetment.

In October 2020, additional armor stone and medium stone was installed along the northern shoreline where shoreline erosion had been noted. A straw erosion blanket was also added in this area. Areas requiring topsoil and seeding will be addressed by the next Corrective Measures Work Plan.

Netting was exposed in a few areas along the southern shoreline of the Bell Slip.

5.0 MONITORING PLAN COMPLIANCE

Annual monitoring of the Site is required to evaluate:

- Whether engineering controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of the SMP and the Environmental Easement;
- Are set records complete and up to date; and,
- Changes to the remedy or monitoring system.

A visual inspection of the soil cover system must be conducted annually. The soil cover will be monitored for signs of erosion, settlement, denuded areas, subsidence along the edges of the stone revetment and any

other signs of damage. The form to be completed during this inspection was included in the SMP and is included in Appendix A.

Site-wide Inspections must also be performed at least one a year and after all severe conditions that may affect the Engineering Controls. The inspections must assess:

- Compliance with all Institutional Controls, including Site usage;
- The condition and continued effectiveness of Engineering Controls;
- General Site conditions;
- Site management activities being conducted; and,
- Confirm Site records are up to date.

The Site Monitoring Plan was undertaken as required in the SMP, specifically:

- A visual inspection of the soil cover system was undertaken in April 2021;
- A Site-wide inspection was completed at the same time; and,
- The approved Site inspection forms were used.

6.0 OPERATIONS AND MAINTENANCE PLAN

Not applicable.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Compliance with SMP

Institutional/Engineering Controls

Additional corrective measures are required due to the localized areas of erosion along the revetment.

Monitoring Plan

The Site is in compliance with all aspects of the monitoring plan.

Performance and Effectiveness of Remedy

The remedy is acting as designed, limiting human exposure to buried contaminants and preventing contaminated soil from entering Lake Erie. Lake Erie seiche events that damage the upper margin of the revetment appear to be recurring more frequently. A recommended course of action is provided in the CWMP (Appendix D).

Future Periodic Review Report Submittals

It is proposed that annual Site inspections continue to be performed and future periodic review report submittals be conducted every three years (triennially). In the event that a condition is observed during an

annual Site inspection that could cause non-compliance, the NYSDEC will be notified and a corrective measures plan will be prepared.

8.0 CERTIFICATION

The Institutional and Engineering Controls Certification Form is included as Appendix C.

FIGURES

LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT SITE LOCATION MAP

FIGURE NO.

1

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APPENDIX A

Site Inspection Forms

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B-00149-9

SITE-WIDE INSPECTION FORM

Date: 10/15/19 **Inspector:** Allen Zgaljardic

Weather: Sunny, light wind **Signature:** Allen Zgaljardic

Temperature: 55° - 60° F **Company:** LiRo Engineers.

Quarter: First Second Third (Fourth)
(Circle One)

Item Inspected	Maintenance Needed (Y/N)	Comments
General Site Access	N	Good condition.
Soil Cover/Grass Cover	N	Good condition.
Asphalt Pedestrian/Bicycle Pathway	N	Good condition.
Stone Revetment	N	Good condition.
Drainage Swales/Channels	N	Good condition
Bell Slip Slopes	N	Good condition.
Trees, Bushes, Other Vegetation	N	Areas of burrows.

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B–00149-9

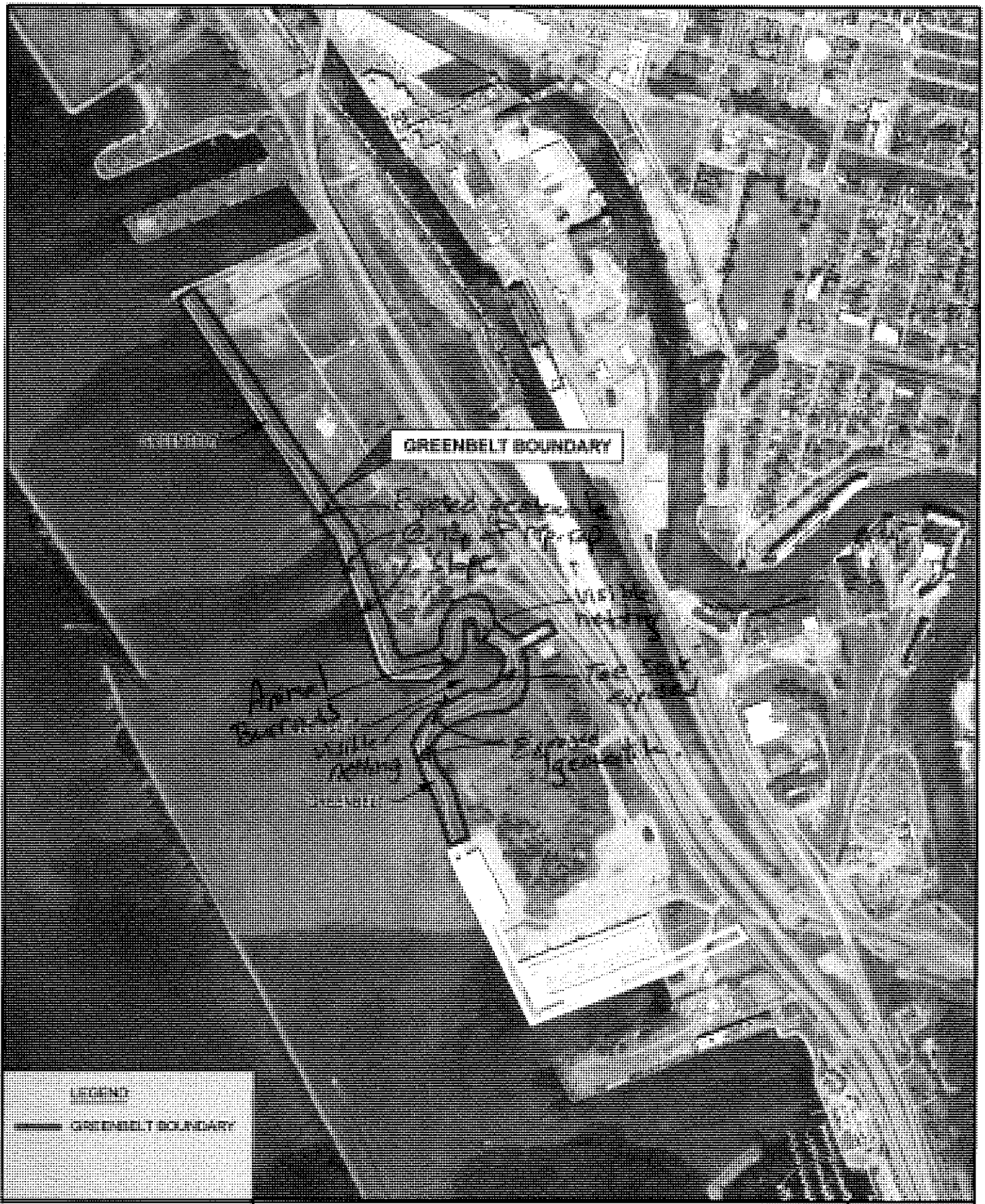
ENGINEERING CONTROL SYSTEMS INSPECTION FORM

Component	Item	Comments
Soil Cover	Obvious subsidence, depressions or cracks	None observed.
	Evidence of ponded water	None observed.
	Stressed or missing vegetation	None observed.
	Soil erosion due to surface runoff	None observed.
	Animal burrows	Burrows noticed in Bell Slip area.
	Debris or Illegal Dumping	None observed.
	Other:	
Stone Revetment	Obvious subsidence or depressions	None observed
	Displaced armor stones	None observed.
	Disintegration, cracking or spalling of armor stones	None observed
	Sloughing or slippage of revetment	None observed.
	Animal burrows	None observed.
	Washout of adjacent soil into stone revetment	Exposed geotextile noted in a few areas. No washouts of soil cover

ENGINEERING CONTROL SYSTEMS INSPECTION FORM

Component	Item	Comments
Asphalt Pedestrian/Bicycle Pathway	Obvious subsidence, depressions or cracks	None observed.
	Evidence of ponded water	None observed
	Evidence of sloughing/raveling along edges	None observed.
	Other:	
Bell Slip	Obvious subsidence, depressions or cracks	None observed.
	Soil erosion due to surface runoff	None observed.
	Sloughing of slopes	None observed.
	Exposed geotextile fabric	Some areas along south end.
	Damage to geotextile 'sock' along water's edge	None observed. Sock was exposed in area shown on map.
	Damage/displacement of seagull perch poles	None observed.
	Scarp formation in soil slopes	None observed.
	Displaced armor stones	None observed.
	Dead or stressed vegetation	None observed.

Date: 10-15-19 **Inspector:** Allen Zgajacic.



LEGEND

GREENBELT BOUNDARY

Liffo-Engineers, Inc.
600 Delaware Ave.
Buffalo, New York

PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT SITE LOCATION MAP

FIGURE NO.

1

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B-00149-9

SITE-WIDE INSPECTION FORM

Date: 11/6/2020 **Inspector:** Jon Williams

Weather: overcast **Signature:** [signature]

Temperature: 55° **Company:** LiRo

Quarter: First Second Third Fourth
(Circle One)

Item Inspected	Maintenance Needed (Y/N)	Comments
General Site Access	N	No Issues
Soil Cover/Grass Cover	N	Good Condition
Asphalt Pedestrian/Bicycle Pathway	N	Few small cracks noted south of Bell Slip. All other areas in good condition
Stone Revetment	N	Good Condition
Drainage Swales/Channels	N	Good Condition
Bell Slip Slopes	N	Good Condition
Trees, Bushes, Other Vegetation	N	Good Condition

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B–00149-9

ENGINEERING CONTROL SYSTEMS INSPECTION FORM 11/6/20

Component	Item	Comments
Soil Cover	Obvious subsidence, depressions or cracks Evidence of ponded water Stressed or missing vegetation Soil erosion due to surface runoff Animal burrows Debris or Illegal Dumping Other:	None observed
Stone Revetment	Obvious subsidence or depressions Displaced armor stones Disintegration, cracking or spalling of armor stones Sloughing or slippage of revetment Animal burrows Washout of adjacent soil into stone revetment	Exposed geotextile observed in a few areas.

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B–00149-9

ENGINEERING CONTROL SYSTEMS INSPECTION FORM

Component	Item	Comments
Asphalt Pedestrian/Bicycle Pathway	Obvious subsidence, depressions or cracks Evidence of ponded water Evidence of sloughing/raveling along edges Other:	A few cracks were observed along the portion of Path along the south side of the Bell Slip
Bell Slip	Obvious subsidence, depressions or cracks Soil erosion due to surface runoff Sloughing of slopes Exposed geotextile fabric Damage to geotextile 'sock' along water's edge Damage/displacement of seagull perch poles Scarp formation in soil slopes Displaced armor stones Dead or stressed vegetation	A few areas of exposed netting and toe sock were observed. No damage was observed.

Date: 11/6/20 **Inspector:** [signature]

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LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

PORT-GREENBELT 11/6/20
SHORELINE IMPROVEMENT PROJECT
SITE LOCATION MAP

FIGURE NO.

1

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B-00149-9

SITE-WIDE INSPECTION FORM

Date: 4/9/21 **Inspector:** A. Koons

Weather: Cloudy **Signature:** Andrew Koons

Temperature: 55° **Company:** LiRo Engineers

Quarter: First Second Third Fourth
(Circle One)

Item Inspected	Maintenance Needed (Y/N)	Comments
General Site Access	N	No issues
Soil Cover/Grass Cover	N	No issues
Asphalt Pedestrian/Bicycle Pathway	N	Some minor cracks noted near bell slip.
Stone Revetment	Y	erosion and soil Sloughing occurring
Drainage Swales/Channels	N	No issues
Bell Slip Slopes	Y	soil sloughing occurring and some grass needed to be planted
Trees, Bushes, Other Vegetation	N	No issues

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B–00149-9

ENGINEERING CONTROL SYSTEMS INSPECTION FORM

Component	Item	Comments
Asphalt Pedestrian/Bicycle Pathway	Obvious subsidence, depressions or cracks Evidence of ponded water Evidence of sloughing/raveling along edges Other:	Minor cracks in pavement near bell slip
Bell Slip	Obvious subsidence, depressions or cracks Soil erosion due to surface runoff Sloughing of slopes Exposed geotextile fabric Damage to geotextile 'sock' along water's edge Damage/displacement of seagull perch poles Scarp formation in soil slopes Displaced armor stones Dead or stressed vegetation	• Sloughing slopes + exposed netting. • Some trees had been cut down by beavers

Date: 4/9/21 **Inspector:** A. Koons

NFTA PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT
SITE MANAGEMENT PLAN

NYSDEC SITE NO. B–00149-9

ENGINEERING CONTROL SYSTEMS INSPECTION FORM

Component	Item	Comments
Soil Cover	Obvious subsidence, depressions or cracks Evidence of ponded water Stressed or missing vegetation Soil erosion due to surface runoff Animal burrows Debris or Illegal Dumping Other:	No issues
Stone Revetment	Obvious subsidence or depressions Displaced armor stones Disintegration, cracking or spalling of armor stones Sloughing or slippage of revetment Animal burrows Washout of adjacent soil into stone revetment	Sloughing and slipping of revetment in some areas

LEGEND:

GREENBELT BOUNDARY

LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT SITE LOCATION MAP

FIGURE NO.

1

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APPENDIX B

Site Photographs

Inspection Photos

View of revetment from Bell Slip towards Terminal B building.

Inspection Photos

View of asphalt path along Greenbelt.

Inspection Photos

View of exposed geotextile between revetment and soil cover system.

Inspection Photos

East side of Bell Slip, view looking towards the south.

Inspection Photos

East side of Bell Slip, visible netting along shoreline.

Inspection Photos

North side of Bell Slip, view looking towards the south. Walking path/exposed soil cover to shoreline.

Inspection Photos

Exposed toe sock and netting along east shoreline of Bell Slip.

Inspection Photos

Borrow damage to cover system along soil/rip-rap interface along Bell Slip.

Inspection Photos

Exposed netting along shoreline, north side of Bell Slip.

Inspection Photos

View of revetment and soil cover from Bell Slip looking north.

Inspection Photos

Area of exposed geotextile between revetment and soil cover system, south side of Bell Slip.

Inspection Photos

View of revetment from midway between the Terminal B building and Bell Slip towards Bell Slip.

View of revetment from midway between the Terminal B building and Bell Slip towards Terminal B building.

Inspection Photos

View of crack in asphalt in section of path along the south side of Bell Slip.

View across the western portion of Bell Slip towards the north.

Inspection Photos

View of eastern portion of Bell Slip towards northeast.

View across eastern portion of Bell Slip towards north.

Inspection Photos

View of the north side of the Bell Slip towards west.

View of new netting installed in 2020 in a portion of the south side of Bell Slip.

Inspection Photos

View of new revetment installed in 2020 in a portion of the south side of Bell Slip.

View across western portion of Bell Slip towards south.

Inspection Photos

View of revetment from near the north end of Greenbelt towards Bell Slip.

View of exposed geotextile located approximately midway between Bell Slip and north end of Greenbelt.

Inspection Photos

View of east end of Bell Slip from north.

Inspection Photos

View of revetment at northern portion of the Pathway.

Inspection Photos

View of brush and trees cleared by beavers at Bell Slip.

Inspection Photos

View of erosion control blanket on northern bank slope at Bell Slip.

Inspection Photos

View of bank erosion on South side of Bell Slip, view looking towards the east.

Inspection Photos

View of medium stone placed behind the armor stone.

Inspection Photos

View of new armor stone placed at the top of the bank.

APPENDIX C

Institutional and Engineering Controls Certification Form

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **B00149**

Site Name NFTA Outer Harbor Greenbelt

Site Address: Outer Lots 44-50 and Ogden Gore Tracts 1-2 Zip Code: 14203-
City/Town: Buffalo (C)
County: Erie
Site Acreage: 15.830

Reporting Period: April 23, 2018 to April 23, 2021

	YES	NO
1. Is the information above correct?	X	
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	
7. Are all ICs in place and functioning as designed?	X	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. B00149 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
121.12-1-3	Erie Canal Harbor Development Corp.	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan

See Parcel 122.09-1-1 (461 Fuhrmann Boulevard) for description.

122.09-1-1	Erie Canal Harbor Development Corp.	Ground Water Use Restriction Landuse Restriction Site Management Plan Soil Management Plan Monitoring Plan IC/EC Plan

Exposure to remaining contamination in soil/fill at the site is prevented by a composite cover system placed over the site. This cover system consists of three elements. These include a soil cover comprised of a minimum of 12 inches of clean soil; an asphalt bicycle/pedestrian trail;
and/or a heavy armor stone revetment.

A visual inspection of the soil cover system will be conducted at least annually, in the late spring. The soil cover will be monitored for signs of erosion, settlement, denuded areas, subsidence along the edge of the stone revetment and any other signs of damage.

Site restrictions that apply to the Controlled Property are:
• The property may only be used for public passive recreation use provided that the long-term Engineering and Institutional Controls included in this SMP are employed. (Note that “commercial use” as defined in Part 375 includes passive recreational uses, which are public uses with limited potential for soil contact.)
• The property may not be used for a higher level of use, such as unrestricted or restricted residential, use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
• Future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
• The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
• Vegetable gardens and farming on the property are prohibited;
• The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

The site has been remediated for public passive recreation use. Any future intrusive work that will encounter or disturb the remaining contamination will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix C to the Site Management Plan.

122.13-1-1	Erie Canal Harbor Development Corp.	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan

See Parcel 122.09-1-1 (461 Fuhrmann Boulevard) for description.

122.13-1-2 Erie Canal Harbor Development Corp.

Ground Water Use Restriction
Soil Management Plan
Landuse Restriction
Monitoring Plan
Site Management Plan
IC/EC Plan

See Parcel 122.09-1-1 (461 Fuhrmann Boulevard) for description.

122.17-1-1 Erie Canal Harbor Development Corp.

Ground Water Use Restriction
Soil Management Plan
Landuse Restriction
Monitoring Plan
Site Management Plan
IC/EC Plan

See Parcel 122.09-1-1 (461 Fuhrmann Boulevard) for description.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
121.12-1-3	Cover System
122.09-1-1	Cover System
122.13-1-1	Cover System
122.13-1-2	Cover System
122.17-1-1	Cover System

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment; Cover system damage

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
	X

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Stephen Frank — 5/24/21

Signature of Owner, Remedial Party or Designated Representative — Date

IC CERTIFICATIONS
SITE NO. B00149

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification Date

EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as a Qualified Environmental Professional for the _____
(Owner or Remedial Party)

_____	_____	_____
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date

APPENDIX D

Corrective Measures Work Plan

LiRo Engineers, Inc.
A LiRo Group Company
690 Delaware Avenue, Buffalo, NY 14209 Telephone 716.882.5476 Facsimile 716.882.9640 www.liro.com

June 8, 2021

Megan Kuczka
Project Manager
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203

Re: Port-Greenbelt Shoreline Improvement Project Site – Corrective Measures Work Plan
NYSDEC Site No. B-00149-9

Dear Ms. Kuczka:

As requested by the New York State Department of Environmental Conservation (NYSDEC), LiRo Engineers, Inc. (LiRo) is providing this Corrective Measures Work Plan on behalf of the Erie Canal Harbor Development Corporation (ECHDC) for temporary/short-term repairs to address erosional damage that occurred subsequent to the last round of repairs completed in fall 2020. In addition to these short term repairs, ECHDC/LiRo will consult with a shoreline erosion specialist to develop alternatives for a shoreline protection approach that will provide a more permanent solution to the recurring erosion conditions at the site.

Background

The Port-Greenbelt Shoreline Improvement Project Site (Greenbelt) Site is a linear bike trail which runs parallel to the Lake Erie shoreline from the Buffalo Harbor Slip to the Terminal B building (Figure 1). During the fall and winter of 2019-2020, several extreme seiche events resulted in elevated lake levels which combined with high waves to cause significant erosion into the Lake Erie shoreline. In July, LiRo prepared a Corrective Measures Work Plan (CMWP) to restore the cover system. The CMWP was approved by NYSDEC in July 2020.

In October of 2020, additional armor stone (primarily medium and light stone) was installed along a large portion of the shoreline to mitigate shoreline erosion. Subsequently in November 2020, some of the new stone work was damaged by a large seiche event. Erie Canal Harbor Development Corporation (ECHDC) subsequently cleaned up/replaced stone that had been washed inland, however, there are areas of additional erosion that require repair. The attached Figure 2 shows the general locations where damage was noted. In addition to the erosion damage, tree damage caused by beavers was noted in the Bell Slip area. The attached photos show some of the damage. The proposed interim corrective actions are described below.

Cover System and Shoreline Restoration

Eroded areas will be cut back as needed to provide a uniform edge. In areas where the filter fabric is intact but has been displaced, the fabric will be laid out flat to its original extents. In areas where the filter fabric is missing or deteriorated, new filter fabric will be placed. New filter fabric shall meet the specs of Mirafi 600X geotextile. A manufacturers cut sheet is provided in Appendix A.

Following repair/replacement of the filter fabric a Heavy Stone Fill will be placed to the extent of the erosion. Heavy Stone Fill will be placed on the shoreline slope to the limit of erosion. The fill placement will build up the revetment to match or slightly exceed the height of the slope at the limit of erosion. The stone placed along the slope break will take the force of the wave action and help prevent further erosion

of the bank. Prior to import of material to the site, the Request to Import/Reuse Fill or Soil Form (Appendix B) will be submitted to NYSDEC for approval.

Placement of the Heavy Stone Fill will be above the water line and no excavation, soil removal, or stone fill placement will impact the water.

Top soil and Seed will be provided adjacent to the fill placement to tie in the adjacent turf to the stone fill. Topsoil and Seed will also be placed at the locations where disturbance occurred during the corrective measures implemented in 2020.

Tree Damage Repair

Trees between the Port Greenbelt trail and the Bell Slip will be protected against beaver damage. This will be accomplished by wrapping individual trees or larger groups of trees with wire mesh fencing. Fencing will be placed around the trees with enough room to allow for tree growth over several years. Fencing will be inspected as part of the annual inspections and will be replaced if excessive corrosion is noted or additional room is needed for tree growth.

The proposed repair work will occur at or above the former demarcation (filter fabric layer) and disturbance of potentially contaminated subsurface soils is not anticipated. Cap material removed to provide a uniform edge for the repairs will be utilized to reestablish the turf or will be properly disposed of off-site. Due to the minimal disturbances of soil materials, implementation of a Community Air Monitoring Plan (CAMP) is not proposed for this work.

Work will be performed in accordance with the requirements of the Port-Greenbelt Shoreline Improvement Project Site Management Plan (NYSDEC Site No. B-00149-9) prepared by URS and Dated August 2011.

Permits

The work will not include any excavation or fill below the mean high water level for Lake Erie, which is 573.40 feet above mean sea level. Therefore, a NYSDEC Protection of Waters permit is not required for this project.

Schedule

It is anticipated that the interim corrective measures will be implemented in the summer of 2021, pending approval of this work plan. The work will progress until complete and should take approximately one month to complete. We also anticipate having a shoreline erosion specialist provide a preliminary assessment of the site condition in summer of 2021. After that initial assessment is completed, we will advise NYSDEC of any additional studies that are required, preliminary thoughts on shoreline protection alternatives and a timeline for preparing a detailed plan for a more permanent solution.

Reporting

Following completion of the restoration work, LiRo will prepare a letter report to summarize the interim repair field activities. The report will include photographs showing the restored work areas.

If you have any questions regarding this CMWP, feel free to contact us at (716) 882-5476 ext. 438.

Sincerely,
LiRo Engineers, Inc.

Martin Wesolowski, PE, CCM
Project Manager

LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT SITE LOCATION MAP

FIGURE NO.

1

V:\ECHDC\18-015-0132 - 2018 Outer Harbor\Design\TASK 2 - GREENBELT PRR\GREENBELT PRR SITE LOC MAP.AI

V:\ECHDC\18-015-0132 - 2018 Outer Harbor\Design\TASK 2 - GREENBELT PRR\GREENBELT PRR CORRECTIVE MEASURES.AI

LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

PORT-GREENBELT SHORELINE IMPROVEMENT PROJECT CORRECTIVE MEASURES WORK PLAN

FIGURE NO.

2

Inspection Photos

Photo No. 1 – Stumps left behind following tree removal by beavers. East side of Bell Slip.

Site Photos

Photo No. 2 – Damage to tree trunk by beavers. East side of Bell Slip.

Site Photos

Photo No. 3 - Stumps left behind following tree removal by beavers. East side of Bell Slip.

Site Photos

Photo No. 4 - Damage to tree trunk by beavers. East side of Bell Slip.

Site Photos

Photo No. 5 – Group of trees at top of armor stone, untouched by beavers. East side of Bell Slip.

Site Photos

Photo No. 6 – Beaver damage to trees at top of armor stone. North side of Bell Slip.

Site Photos

Photo No. 7 – Stump left behind following tree removal by beavers and damage to embankment. North side of Bell Slip.