DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

March 7, 2019

REPLY TO
ATTENTION OF

Operations and Technical Support Section

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Richard Hozak
Reno Beach-Howard Farms Conservancy District
643 Donovan Road
Curtice, OH 43412

Dear Mr. Hozak:

Transmitted herewith is the FY18 Inspection of Completed Works (ICW) Periodic Inspection report portion of the FY18 Periodic Assessment for the Flood Risk Management (FRM) Project at Reno Beach-Howard Farms, Lucas County, Ohio. Thank you for your agency's participation in this inspection. In accordance with USACE - Headquarters guidance, the rating for this project, as determined by the current inspection, is **"UNACCPETABLE" (U)**. The primary deficient conditions include unacceptable ratings for unwanted vegetation, encroachments, and lack of videotaping of project interior drainage pipes through, under, or above the dike system. Heavy vegetation and trees prevent proper inspection of significant portions of the dike system. This project is **"INACTIVE**" in the USACE Rehabilitation Program, per USACE letter dated 25 March 2009, included as Attachment "A" of this report. Please refer to the enclosed inspection report, that includes a Flood Damage Reduction Systems Inspection Report (Attachment "H"), for a description of project deficiencies, by category, requiring corrective action, if any.

A Periodic Assessment is a new USACE initiative that includes a Periodic Inspection and a Levee Screening for the FRM project levee system (Lake Erie – Reno Beach) and is performed on a periodic basis between 5 and 10 years. This transmittal only includes the report for the Periodic Inspection portion of the assessment. The draft Levee Screening has been completed and is currently being reviewed by USACE Headquarters to determine if revisions are necessary to the Levee Safety Action Classification (LSAC) and risk characterization. Upon finalization of the review, the Levee System Summary (LSS) will be updated, discussed with the Reno Beach-Howard Farms Conservancy District, and entered into the National Levee Database (NLD). Attachment "I" shows the current LSS for this project.

Please keep this office informed if there are changes to the project that would affect the design level of protection afforded by the project or if there are other changes that may alter or impact project features and operations and maintenance. Such changes require prior Section 408 written permission from USACE and no objection from the Reno Beach-Howard Farms Conservancy District.

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Questions pertaining to this matter should be directed to the undersigned, who can be contacted in writing at the above address, by telephone at 716-879-4277, or by e-mail at robert.w.remmers@usace.army.mil.

Sincerely,

REMMERS.ROBERT.W.1228673559

Digitally signed by REMMERS.ROBERT.W.1228673559
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=REMMERS.ROBERT.W.1228673559
Date: 2019.03.07 15:02:58 -05'00'

Robert W. Remmers, P.E., PMP
Levee Safety Program Manager
Chief, Operations and Technical Support Section

CF:

Sima Merick, Ohio Emergency Management Agency (e-copy)
Patricia Moomey, Lucas County Emergency Management Agency (e-copy)
Christine Gaynes, Federal Emergency Management Agency, Region V (e-copy)

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Lake Erie – Reno Beach

Lucas County, OH

FY 2018 PERIODIC INSPECTION REPORT

INSPECTED 22 AUGUST 2018

Prepared By:

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Table of Contents

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Attachments:

A Rehabilitation Program Inactive Status Letter (25 March 2009)
B Sign-In Sheet
C Project Map
D Pre-Inspection Package
E Summary of Deficiencies & Recommendations
F Levee Inspection Maps
G Rehabilitation Program Eligibility Determination Checklist
H Flood Damage Reduction System Inspection Report
I Levee System Summary

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Section 1.0 Executive Summary

The Reno Beach-Howard Farms Flood Risk Management (FRM) project is a federally authorized and non-federally operated and maintained rural flood damage reduction along the shores of Lake Erie, Cooley Canal, and Wards Canal. These protective structures consist of approximately 7,520 feet of reconstructed dike, generally involving large toe stone protection and reconstructed/repaired dikes, some foreslope work along Cooley Canal, and a portion of the Wards Canal levee. Approximately 4,278 feet of additional dike involved various levels of repair, including: 2,910 feet of berm underlayer stone and stone toe protection; 1,066 feet of berm containing underlayer stone and slope protection stone to the design crest elevation; and 302 feet of transition sections. Approximately 277 feet of work on Cooley Canal consisted of fill in areas of erosion with a layer of riprap. Wards Canal required 3,753 feet of levee rehabilitation involving bedding stone and a layer of riprap placed on the slope to the design crest elevation. Incorporated as part of the project interior drainage is a drainage ditch paralleling the inland side of the dike to collect interior runoff. Three pump stations, built, operated and maintained solely by the local sponsor, drain water from the drainage ditch. The Reno Beach-Howard Farms Conservancy District is the non-federal local sponsor responsible for operating and maintaining the project.

A Periodic Inspection (PI) of this FRM project was performed on 22 August 2018 by the United States Army Corps of Engineers (USACE) – Buffalo District and the Reno Beach-Howard Farms Conservancy District. PIs are performed on a 5-10 year cycle and are intended to verify proper operation and maintenance of the project by the local sponsor, evaluate operational adequacy and structural stability, review design criteria to identify changes in current design standards, identify features to monitor over time, and improve the ability to communicate the overall project condition to stakeholders and the public.

The PI process consists of three parts: review of existing project documentation, performing a detailed project field inspection, and review of project design criteria to determine if they meet current USACE standards. The resulting report documents and communicates the findings. This Periodic Inspection includes evaluation of the entire USACE-constructed project and incorporated features built by the sponsor consisting of a levee system, pump stations, interior drainage along Lake Erie, Cooley Canal, and Wards Canal.

Periodic Inspections are rated “ACCEPTABLE (A)”, “MINIMALLY ACCEPTABLE (M)”, or “UNACCEPTABLE (U)” and also include a Flood Damage Reduction System Inspection Report of individual items that follow the same rating format. An “ACCEPTABLE (A)” individual item is defined as having no deficiencies and/or needing no corrective action. A “MINIMALLY ACCEPTABLE (M)” individual item will require some corrective action; failure to perform corrective action for deficiencies rated as minimally acceptable may result in a downgrade of that individual item to an “UNACCEPTABLE (U)” rating during the next inspection. Individual items rated “UNACCEPTABLE (U)” will require prompt corrective action.

Individual items are furthermore grouped into Rated Items based on the type of deficiency. These Rated Items also receive “ACCEPTABLE (A)”, “MINIMALLY ACCEPTABLE (M)”, or

"UNACCEPTABLE (U)" ratings to represent their collection of individual items. An "UNACCEPTABLE (U)" individual item, or significant collection of "UNACCEPTABLE (U)" individual items within one Rated Item, may result in a Rated Item rating of "UNACCEPTABLE (U)".

The 2018 Periodic Inspection for this project noted various deficiencies and, in accordance with USACE - Headquarters guidance, the Reno Beach-Howard Farms FRM project is rated **"UNACCEPTABLE (U)"**. This project is "**INACTIVE**" in the USACE Rehabilitation Program (RP). The primary deficient conditions include unacceptable ratings for unwanted vegetation, encroachments, and lack of videotaping of project interior drainage pipes through, under, or above the dike system. Heavy vegetation and trees prevent proper inspection of significant portions of the dike system. These primary deficiencies require correction in order for the project to receive an active status in the USACE Rehabilitation Program.

The FY08 Routine Inspection, conducted 23 September 2008, originally made this FRM project "INACTIVE" in the USACE RP. Refer to Attachment A (Rehabilitation Program Inactive Status Letter) for a correpsondence, dated 25 March 2009, from USACE to the City of Toledo informing them of the project's "INACTIVE" status.

Section 2.0 Inspection Team and Date of Inspection

Section 2.1 Inspection Team

USACE – Buffalo District

1. Joseph Kasperski - Civil Engineer
2. Jason Doktor - Civil Engineer
3. Joshua Kennedy - Geotechnical Subject Matter Expert

Reno Beach-Howard Farms Conservancy District

1. Linds Rossler
2. Christine Fleitz
3. Richard Hozak

Refer to Attachment B (Sign In Sheet) for contact information.

Section 2.2 Date of Inspection

The Reno Beach-Howard Farms FRM project Periodic Inspection was conducted on 22 August 2018.

Section 2.3 Public Sponsor Pre-Inspection Report

The public sponsor did not submit a completed Public Sponsor Pre-Inspection Report. A Public Sponsor Pre-Inspection Report is required for an overall "ACCEPTABLE (A)" or "MINIMALLY ACCEPTABLE (M)" rating.

Section 2.4 Inaccessible Portions of Project

Throughout the inspection, there were inaccessible portions of the project due to unwanted vegetation, trees, and encroachments. These portions are identified in Attachment E (Summary of Deficiencies & Recommendations), Attachment F (Levee Inspection Maps), and Attachment H (Flood Damage Reduction System Inspection Report):

Inspection ID #	Location	Stationing
103	400' West of Wards Canal	0+91 to 2+00
104	West End of Lagoon Drive to La Course Drive	30+00 to 37+69
105	La Course Drive to Corduroy	49+14 to 44+35
106	West End of Dyke Road to Lakeway Drive	78+56 to 85+69

Section 3.0 System Background Information

Section 3.1 Levee System

Table 1: Levee System

Levee System	Levee Inspection System Code
Lake Erie – Reno Beach	OH29

Refer to Attachment C (Project Map) for information related to levee system locations.

Note: The terms "levee" and "dike" are used interchangeable in this report.

Section 3.2 Project Type

Federally authorized and constructed; non-federally operated and maintained, rural FRM project.

Section 3.3 Authority

Construction of flood protection project at Reno Beach – Howard Farms, Jerusalem, Ohio, was authorized under Section 203 of the Flood Control Act of 1948, Public Law 858 in accordance with House Document 554.

Section 3.4 Cost

The project construction cost was $4,052,694.

Section 3.5 Completion Date

October 1992

Section 3.6 Public Sponsors

Reno Beach-Howard Farms Conservancy District

Section 3.7 Points of Contact

The primary point of contact for the Reno Beach-Howard Farms Conservancy District is Richard Hozak. Other Conservancy District board members include Christine Fleitz and Prakash Thombre.

Section 3.8 Location

The project is located on the southwest shore of Lake Erie in the Jerusalem Township of Lucas County Ohio. This area is approximately 15 miles east of Toledo. The project is within Federal Emergency Management Agency (FEMA) - Region 5.

Section 3.9 Potential Consequences

The Reno Beach-Howard Farms Flood Risk Management project serves as flood damage reduction for rural residences, agriculture, and a Metropark. The consequences resulting from various modes of potential levee system failure were analyzed in the National Levee Database (NLD) and Levee Screening Tool (LST). The results of this risk assessment revealed the following leveed-area estimates in Table 2:

Table 2 - Leveed Area Consequence Data (as of 28 September 2018)

System	Lake Erie – Reno Beach
Daytime Population	513
Nighttime Population	1,064
Structures	518
Property Value	$115,595,570

Section 3.10 History of Remedial Measures

No significant naturally caused damages have occurred to the project or protected area since it was constructed, therefore, no remedial measures have been historically required.

Section 4.0 Pre-Inspection Packages & Design Criteria Review

Section 4.1 Pre-Inspection Packages

A Pre-Inspection Package (PIP) was prepared prior to performing the levee inspection and is included in this report as "Attachment D – Pre-Inspection Package".

This PIP contains the following information:

- Project Description
- References
- Geologic/Foundation Conditions
- Flood Insurance Study
- Operation and Maintenance Requirements
- Project Conditions Based on Previous Inspection
- Summary of Historical Periodic Inspections
- Significant Developments Since Last Periodic Inspection
- Emergency Action Plan
- Design Criteria Review
- Figures

Section 4.2 Design Criteria Review

Refer to Section 10 of the Pre-Inspection Package in Attachment D (Pre-Inspection Package) for the Design Criteria Review.

Section 5.0 Deficiencies & Recommendations

Section 5.1 Explanation of Attachments

Deficiencies, recommendations, inspection maps, eligibility checklists, and inspection reports are included within the following attachments of this report:

Attachment E – Summaries of Deficiencies and Recommendations:
Deficieny ID #s, deficiency descriptions, recommended actions, associated photo numbers, inspection categories, and ratings.

Attachment F – Levee Inspection Maps:
Aerial maps georeferencing inspection observation locations.

Attachment G - Rehabilitation Program Eligibility Determination Checklists:
Per USACE policy entitled "Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program" issued in March 2014, a subset of specific inspection Rated Items will be the only determining factor for making levee systems inactive in the USACE Rehabilitation Program. If one or more of these Rated Items receive an "Unacceptable (U)" rating, the overall project rating will be "Unacceptable (U)" and the entire project will be determined to be "INACTIVE" in the Rehabilitation Program.

Attachment H - Flood Damage Reduction System Inspections Reports:
Inspection Report, commonly referred to as a "Checklist", that includes a cover page with project information, sample Public Sponsor Pre-Inspection Form, general instructions, inspection categories, rated items, ratings, rating guidelines, locations/remarks/recommendations, photos, and photo captions.

Section 5.2 Deficiencies

The primary deficient conditions include unacceptable ratings for unwanted vegetation, encroachments, and lack of videotaping of project interior drainage pipes through, under, or above the dike system. Heavy vegetation and trees prevent proper inspection of significant portions of the dike system. Individual deficiencies are included in Attachment E (Summary of Deficiencies and Recommendations), Attachment F (Levee Inspection Maps), & Attachment H (Flood Damage Reduction System Inspection Report).

Section 5.3 Recommendations

The primary deficiencies identified in Section 5.2 require correction in order for the project to receive an active status in the USACE RP. Individual deficiency-specific recommendations are included in Attachment E (Summary of Deficiencies and Recommendations) & Attachment H (Flood Damage Reduction System Inspection Report).

Section 5.4 Observations

Pump Stations: Three pump stations service the project to relieve interior drainage within the leveed area: Toledo Metropark Alteration pump station @ STA. -21+00 on Wards Canal, drainage ditch pump station at the intersection of Dyke Road and Corduroy @ STA. 63+15, and drainage ditch pump station at Cooley Canal @ STA. 154+44. These pump stations are operated and maintained by the Conservancy District and, although they are not project features, are involved in ensuring the flood risk management project functions as designed. Therefore, observations related to these pump stations have been included in this Periodic Inspection Report under the Pump Stations category, but inspection ratings are "NOT APPLICABLE (N/A)". However, videotape inspection of the pump station pipes that go over, through, or under the levee system are still required every 5-years as per Section 6.3 Videotape Pipe Inspections of this report.

Section 6.0 Issues Requiring USACE Assistance

Section 6.1 Project Alterations

An alteration is a new or existing change (including encroachments) to a Federally-constructed, locally operated and maintained project, within the project's permanent easements. In accordance with 33 U.S.C. 408, all alterations must be reviewed and approved by USACE. Requests for alterations are initiated by the "Requestor", who can be any project stakeholder; including the sponsor, general public, or any other interested party. Sponsors must endorse requests from third party entities and ensure that proper operation and maintenance of the alteration is followed. To make an alteration request, the sponsor is required to submit USACE Buffalo District form entitled, "Section 408 Request to Alter, Impact, or Encroach upon a Buffalo District Inspection of Completed Works Project", to include design criteria, as-built drawings, operations and maintenance requirements, and other pertinent documents and information. A copy of the form, either hard copy or an electronic version (fillable pdf), may be obtained by contacting the USACE Buffalo District Levee Safety Program Manager. This form may be used for either existing or new (proposed) alteration requests. Use one form for each unique alteration type. Similar alterations may be combined on one form. New alterations shall be approved in advance of the work.

For existing unauthorized alterations, an after-the-fact review and approval will be required by USACE for each change to determine whether or not the change can be approved or correction/removal will be required. A rating of "M" or "U" will be assigned to existing unauthorized alterations under the "encroachments" item on the checklist, depending on potential impacts to the functioning of the project, until either approval by USACE has been granted or the alteration is removed or corrected. If any of the cited alterations have been previously approved by USACE, the local sponsor is required to submit approval documentation.

Section 6.2 Encroachments

Unauthorized encroachments by residents and businesses must continue to be jointly investigated by the City and USACE to determine whether after-the-fact approval may be granted or if the structures must be removed or altered. Encroachments must not structurally impact the dike, impede inspection of the dike, hinder flood fighting, or interfere with operations and maintenance. Encroachments are considered as project alterations and must either be removed or a request submitted and permission granted by USACE along with a Letter of No Objection from the sponsor.

Section 6.3 Videotape Pipe Inspections

Videotaping of gravity and discharge pipes (such as from pump stations) extending under, through, or over a levee or floodwall is required by USACE. Manual inspections may be done for where the pipes are large enough to physically enter safely (48" or greater). Videotaping or closed circuit TV must be utilized to document deficiencies and conditions for pipe inspections (including manual inspections). Video inspections will be rated in accordance with the description in the Flood Damage Reduction System Inspection Report and based on standard industry practices. National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification

Program (PACP) guidance for videotaping pipe inspections may be used at the sponsor's discretion. Note that taking videotape is only part of the requirement. Sponsors, or their representatives, must also interpret and evaluate pipe conditions based on what the videotape shows and include a written evaluation. A rating of "Acceptable" (A), "Minimally Acceptable" (M), or "Unacceptable" (U) will be assigned by the sponsor or their representative for each pipe. Inspections and written evaluation reports should be done by a qualified professional. Pipes must be essentially free from water when they are videotaped so that all potential deficiencies can be identified. Dewatering methods may be applied to accomplish this. If dewatering cannot be accomplished, sonar inspection (for non-metallic pipes) or other industry-wide standard methods may be used. Assessments of pressure pipes that extend under, through, or over a levee or floodwall (such as forced sewer lines, water mains, etc.) must also be done. USACE recommends contacting appropriate utility for assessment information and provide supporting documentation related to condition of such pipes.

Refer to the following Inspection ID #'s for information related to this levee system's videotape pipe inspection requirements: 107, 108, & 109.

Section 6.4 Emergency Action Plan

The project sponsor is required to have a written system-specific flood Emergency Action Plan (EAP) to document that they have a thorough understanding of how to operate, maintain, and staff the Flood Risk Management project during a flood or storm event. General guidance for preparing this document may be obtained by contacting the USACE Buffalo District Levee Safety Program Manager. The project sponsor must physically produce a copy of the written EAP for USACE review during future project inspections.

Section 6.5 Trees and Vegetation Removal Priority

USACE acknowledges the Conservancy District's limited resources for the removal of trees and vegetation from the dike system, however, USACE recommends that the Conservancy District follow the following priority sequence:

a) Remove trees and vegetation from the entire crest to facilitate routine and emergency inspections and dike maintenance.

b) Remove trees and vegetation from the waterside slope to protect the integrity of the stone protection and to facilitate routine and emergency inspections and dike maintenance.

c) Remove heavy trees and vegetation from the landside slope to facilitate maintenance and routine and emergency inspections for seepage.

d) Remove single trees and isolated brush on landside slope.

Section 7.0 Conclusions

Section 7.1 Rating

The overall project rating is **"**UNACCEPTABLE (U)".

Section 7.2 Levee Certification

The levee system for the Reno Beach-Howard Farms Flood Risk Management project has not been certified by the sponsor and is not accredited by FEMA.

Section 7.3 Next Periodic Inspection

The next periodic inspection of the project is tentatively scheduled for FY23.

Section 8.0 Report Approval

Prepared By:

KASPERSKI.JOSEPH.B.1396426095

Digitally signed by KASPERSKI.JOSEPH.B.1396426095
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=KASPERSKI.JOSEPH.B.1396426095
Date: 2019.03.06 17:35:41 -05'00'

Joseph B. Kasperski, IE — Date
Civil Engineer
Operations and Technical Support Section

Reviewed By:

REMMERS.ROBERT.W.1228673559

Digitally signed by REMMERS.ROBERT.W.1228673559
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=REMMERS.ROBERT.W.1228673559
Date: 2019.03.07 15:03:38 -05'00'

Robert W. Remmers, P.E., PMP — Date
Levee Safety Program Manager
Chief, Operations and Technical Support Section

Attachment A

Rehabilitation Program Inactive Status Letter (25 March 2009)

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF

March 25, 2009

Operations and Technical Support Section

CERTIFIED MAIL

SUBJECT: Unacceptable Rating for FY08 Joint Routine Inspection of Completed Works, Flood Damage Reduction Project, Reno Beach/Howard Farms, Lucas County, Ohio

Mr. Harold Stanton
Lake Erie Conservancy District Number 1 and
Howard Farms Conservancy District
c/o Joyce Schmitz
643 Donovan Road
Curtice, OH 43412

Dear Mr. Stanton:

This is to notify you that upon receipt of this correspondence, and the inspection report transmitted herewith, the Flood Damage Reduction Project for Reno Beach/Howard Farms, Lucas County, Ohio will be placed on an "Inactive" status in the U.S. Army Corps of Engineers (USACE) Rehabilitation and Inspection Program (RIP). Under the current policy in Engineer Pamphlet (EP 500-1-1), Section 5.8, for Federal and non-Federal projects, a project that receives an overall condition rating of "Unacceptable" (U), shall be immediately placed in an inactive status in the RIP. If this occurs, the project becomes ineligible for Federal funding assistance under Public Law (PL 84-99) in the event that a severe storm or flood event damages the project, until the serious deficiencies have been corrected and the project has been re-inspected and made active again.

As recently discussed with you, this project has been given a rating of "Unacceptable" (U) based upon the findings of a joint project inspection undertaken with you on September 23, 2008. The condition rating of "Unacceptable" has primarily been based upon: (1) the existence of heavy vegetation and substantial tree growth on approximately 50% of the dike system; (2) the presence of unauthorized encroachments which could impact the structural integrity of the dike, hinder floodfighting, inhibit inspections, and impede operations and maintenance; (3) missing/displaced stone protection over an approximately 225 lineal foot reach; and (4) excessive trees and heavy vegetation on the Wards Canal dike impede inspection, making it difficult to assess the potential for failure should a portion of the steel plate bulkheading along the shoreline suddenly fail. These deficient conditions could prevent the project from functioning as designed and result in increased risk to the public. A complete list of project deficiencies is included in the enclosed inspection report.

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Operations and Technical Support Section
SUBJECT: Unacceptable Rating for FY08 Joint Routine Inspection of Completed Works, Flood Damage Reduction Project, Reno Beach/Howard Farms, Lucas County, Ohio

In order for the project to be reinstated into an active status in the RIP, all serious project deficiencies must be satisfactorily addressed by the Sponsor and be given at least a "Minimally Acceptable" (M) rating by the USACE – Buffalo District. The District recognizes the Conservancy District's continuing efforts to maintain this project and desires to work with you in a partnering capacity, to the fullest extent of our authority. We will continue to provide technical assistance should you wish to develop and implement corrective actions necessary to return the project to an active status in the RIP.

We are providing a copy of this letter and the 2008 inspection report to the Lucas County Emergency Management Agency, Ohio Emergency Management Agency, FEMA Region V, and the local Congressional delegation, as required by our regulations (ER1130-2-530, paragraph 3-3.g; or ER 500-1-1, paragraph 5-5.c).

The Buffalo District looks forward to working with you to develop a path forward. Questions pertaining to this matter should be directed to the Buffalo District Levee Safety Program Manager, Mr. Robert W. Remmers, P.E., who can be contacted in writing at the above address, by telephone at 716-879-4277, or via e-mail at robert.w.remmers@usace.army.mil.

Sincerely,

Daniel B. Snead, P.E.
Lieutenant Colonel, Corps of Engineers
District Engineer

Enclosure

CF:
William Halsey, Lucas County Emergency Management Agency
Mark Patchen, Ohio Emergency Management Agency
Mike Hanke, Federal Emergency Management Agency; Region V
Sen. George Voinovich (R-OH)
Sen. Sherrod Brown (D-OH)
Rep. Marcy Kaptur (D-9th-OH)

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Attachment B

Sign In Sheet

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Sign In Sheet

Project: Reno Beach

Date: 8/22/18

___ EPP

___ O&M Manual

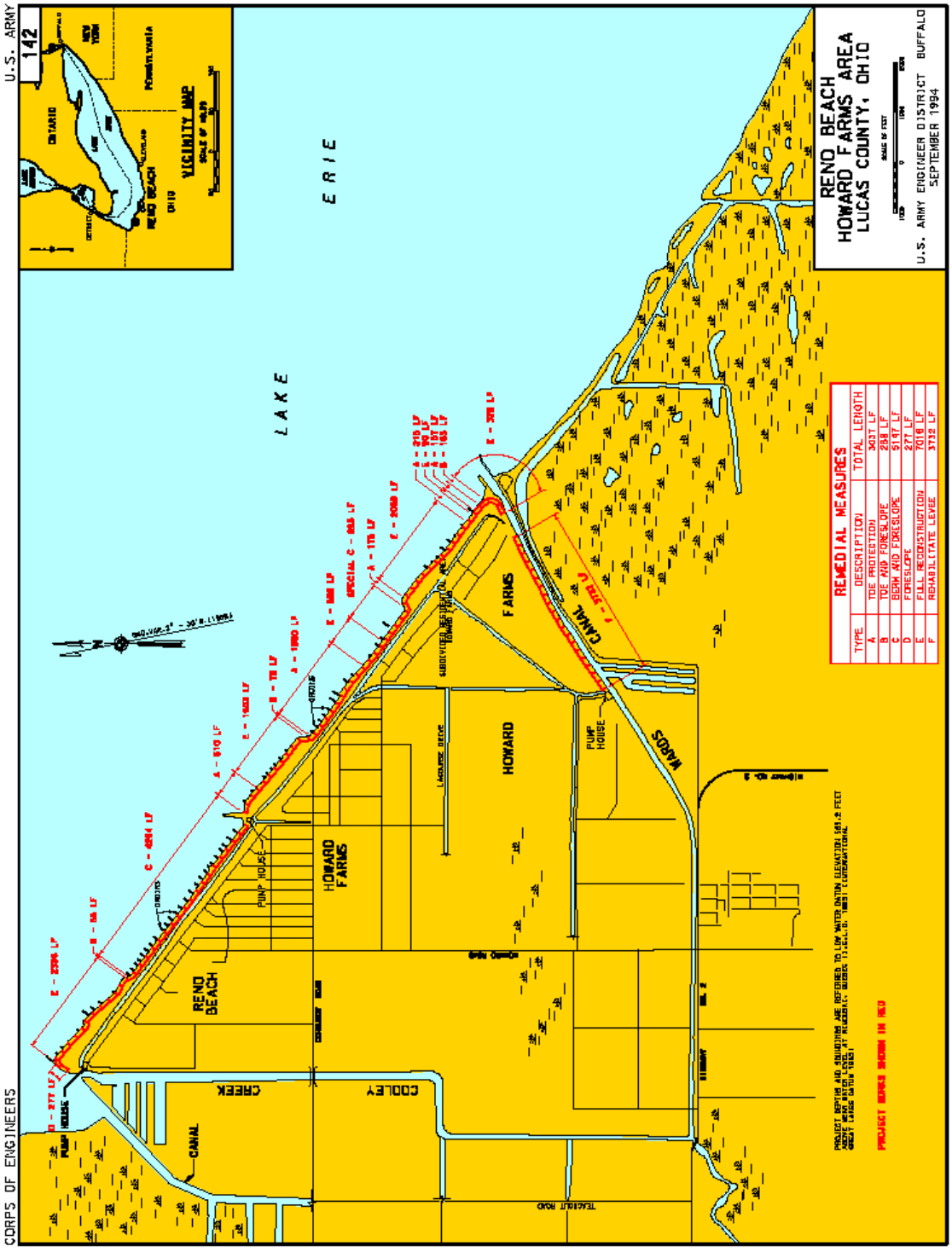
___ Public Sponsor Pre-Inspection Report

Name	Organization	Phone Number	Email
Joseph Kasperski	USACE-Buffalo	(716) 879-4313	joseph.b.kasperski@usace.army.mil
Josh Hennedy	USACE - Buffalo	716 879 4417	joshua.m.kennedy@usace.army.mil
Linda Rossler	Jerusalem Twp	419.260.4299	lrossler76@gmail.com
Christine Fleitz	RBHFC	419 836 8206	cfleitz@Roadrunner.com
RICHARD F. HOZAK	RBHFC	419-836-1210	RICHARDINRENO@EARTHLINK.NET
Jason Doktor	USACE-Buffalo	(716) 879-4385	jason.p.doktor@usace.army.mil

Attachment C

Project Map

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)



SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Attachment D

Pre-Inspection Package

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Levee Periodic Inspection

Reno Beach – Howard Farms Shoreline and Wards Canal Jerusalem, Ohio

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PRE – INSPECTION PACKAGE

Prepared By:

USACE Buffalo District
1776 Niagara Street
Buffalo, New York 14020

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

August 2018

FOR OFFICIAL USE ONLY

TABLE OF CONTENTS

Contents

1 Project Description

The Reno Beach – Howard Farms project is located along the southwest shore of Lake Erie in the Jerusalem Township, Lucas County, Ohio approximately 15 miles east of Toledo.

The project was designed to provide flood protection against high lake levels and wave action by reconstructing/repairing the shoreline revetment built under "Operation Foresight". The project protects 2,120 acres of agricultural land and residential development from flood damage caused by wind storms and high water stages on Lake Erie.

The project consists of the reconstructed/repaired dikes, some foreslope work on the Cooley Canal, and a portion of the Wards Canal levee which now provides a permanent level of protection. The lakeshore dikes in existence at the time the project was authorized were found in various stages of deterioration requiring repair or reconstruction, as necessary, to convert them to a permanent project. The project consists of approximately 7,520 feet of reconstructed dike generally involving large stone toe protection. Approximately 4,278 feet of additional dike involved various levels of repair, including: 2,910 feet of berm underlayer stone and stone toe protection; 1,066 feet of berm containing underlayer stone and slope protection stone to the design crest elevation; and 302 feet of transition sections. Approximately 277 feet of work on Cooley Canal consisted of fill in areas of erosion with a layer of riprap. 3,753 feet of levee rehabilitation of the Wards Canal which involved bedding stone and a layer of riprap placed on the slope to the design crest elevation. Also part of the project is a drainage ditch, which parallels the inland side of the dike and collects interior runoff. Three pump stations, built, operated and maintained solely by the local sponsor, drain water from the drainage ditch. See Figure 1.

Construction of flood protection project at Reno Beach – Howard Farms, Jerusalem, Ohio, was authorized under Section 203 of the Flood Control Act of 1948, Public Law 858 in accordance with House Document 554. Construction of the project was initiated by contract in September 1990 and completed in October 1992 and had an original project cost of $4,052,694.

1.1 Lakeshore Dike

Type A dike consisted of berm with a 2.5-foot layer of underlayer stone and a 3.3-foot layer of toe stone protection, See Figure 2. Type B dike consists of large stones for toe protection, filter cloth, a 2.5-foot layer of underlayer stone, and a 3.3-foot layer of large armor stone up to the design crest elevation, See Figure 3. Type C dike consists of berm containing underlayer and toe stone up to 5.0 feet above L.W.D., and large armor stone up to the design crest elevation on a 1V:2H slope, See Figures 4 and 5. Type E dike or new work dike along Reno Beach and Howard Farms constists of an underlayer with large toe stone, foreslope armor stone up to design crest elevation, and an impervious core, see Figures 7 and 8. The design crest elevation for all Lakeshore Dikes was at 13.6 feet above L.W.D.

Approximately 277 feet of work was done on the Cooley Canal and it consisted of fill material in those areas where the slope had been eroded and placement of a 4.4-foot layer of riprap on top of a 2.5-foot layer of underlayerstone up to 12.3 feet above L.W.D. on the design slope of 1V:2H. This work was Type "D", See Figure 6.

1.2 Wards Canal Levee

Approximately 3,753 feet of levee rehabilitation on the Wards Canal involved a 12-inch riprap layer on top of a 6-inch bedding layer up to the design crest elevation. This work was Type "F", See Figure 9. The design crest elevation for the Wards Canal levee was at 11.0 feet above L.W.D.

1.3 Interior Drainage System and Pump Stations

Three existing pump stations were incorporated into the project to provide interior drainage. The Lake Erie Conservancy District owns two of the pumping stations. The largest is located at the west end of the project near the dike and discharges into Cooley Canal and it has three 5,000 gpm pumps. The other pump station is located near the dike, about a mile to the east, at Rialto Drive and has one 3,000 gpm pump. A third pump station is located on the at the Corduroy Road bridge over Cooley Canal and has one 5,000 gpm pump.

Interior drainage from the Howard Farms area is pumped into the Wards Canal by two diesel powered pumps, each having a capacity of 10,000 gpm. This plant is located near the southern end of the Wards Canal levee improvement and is operated by the Manager of the Howard Farms. The local sponsors will continue with their responsibility for operation and maintenance of the pumping stations and interior drainage systems.

2 References

The following is a list of documents used to prepare the Pre-Inspection Packet:

- FY13 Joint Periodic Inspection of Completed Works
- Operation and Maintenance Manual, dated January 1994
- General Design Memorandum, dated June 1985
- General Design Memorandum, dated October 1986
- As-Constructed Drawings, dated July 1990

Significant documentation that was not available for review and analysis included the following:

- Easement Drawings

3 Geologic/Foundation Conditions

The reference documents listed in Section 2 – References was reviewed for information regarding the foundation conditions and analysis that was performed in designing the levee. This information is summarized below.

The project site is located within the Lake Plains section of the Central Lowlands Province. It is characterized by essentially flat topography, veneered with glacial lake deposits. The bedrock in northwest Ohio consists of limestones, dolomites and shales. Bedrock is generally 50 to 60 feet below the ground surface. Further information can be found in Appendix B of the 1986 Design Memorandum.

Multiple drilling programs were performed in 1945, 1950, and the 1980s. Test results can be found in Appendix B of the 1986 Design Memorandum. The project area was submerged by glacial lakes which upon receding deposited silts and clays onto the existing glacial till. Melt water carrying sand and gravel was also deposited over this area. Surficial deposits in the vicinity of the lakefront dike generally consist of glacial till, glaciolacustrine clay, and lake deposits and fill. The lake deposits include clays and sand with some peat material. The glaciolacustrine clay is approximately 20 feet thick and is generally clay, sand clay and gravelly sandy clay. The underlying glacial till consists of sandy clay and gravelly sandy clay. Under the glacial till is bedrock. The glaciolacustrine soils and glacial till soils are all classified as CL material according to the Unified Soil Classification system (USCS).

The surficial geology near Wards Canal is typically alluvial clay covering the glaciolacustrine clay which is underlain by glacial till. Around the mouth of the canal, the sediments (lacustrine deposits) are generally silty sand, sand and gravelly sand resulting from wave activity. The materials are classified as SP and SM according to the USCS. The alluvial clay which occurs further upstream is generally fine grained and soft approximately 4 to 9 feet thick. It is classified as ML, CL, and OH. The glaciolacustrine clay is composed of clay with some sandy clay, silty clay and silt. It is approximately 10 to 15 feet thick and is primarily CL with some CH and OH clays and ML silts. The underlying glacial till occurs near elevation 550' throughout the project site and varies from a dense sandy clay to gravelly sandy clay which are both CL soils.

4 Flood Insurance Study

The FEMA Effective FIRM map, as of 8/16/2011, shows "Zone AE" as being contained entirely within the project (FEMA Panel Number Panel Number 39095C0145E). A flood zone designation of AE indicates that the area is at high risk of being flooded with a 1% annual chance of flooding in any given year where base flood elevations have been determined.

5 Operation and Maintenance Requirements

Per the project Local Cooperation Agreement (LCA), the Lake Erie Conservancy District Number 1 and the Howard Farms Conservancy District, have assumed joint responsibility for the operation and maintenance of the project, to be done in accordance with the project O&M Manual.

6 Project Conditions Based on Previous Inspection

Although the project was inspected during FY15, 16, and 17, official reports were not transmitted to the project sponsor. The last inspection report transmitted to the sponsor was the 2013 PI. Based on this inspection in accordance with USACE - Headquarters guidance, the project system received an "Unacceptable" (U) rating and remained "Inactive" in the USACE Rehabilitation and Inspection Program (RIP). The project is ineligible for Public Law (PL84-99) rehabilitation assistance until the serious (unacceptable) deficiencies are corrected.

The following paragraphs summarize the results of the 2013 Periodic Inspection (PI):

a. Levee Embankment: There are no significant issues related to slope stability, erosion, settlement, or cracking of the levee. The deficiencies are related to unwanted vegetation growth and encroachments on or within 15' of the levee. No significant issues were identified during the inspection that would prevent this levee from performing as intended during the next flood event.

b. Trees and Vegetation: There were significant trees and unwanted vegetation observed on the levee crown, slope, and within 15 feet of the levee toe. The Wards Canal dike in the vicinity of La Pointe Drive, it was observed that several portions of steel plate wall bulkheading constructed along the Wards Canal shoreline, were in a state of failure. The Wards Canal dike is situated adjacent to the bulkheading along the shoreline. While the Wards Canal dike did not appear to be impacted by these failures at this time, it was difficult to verify its structural integrity due to the extensive heavy vegetation and trees on this dike. This item is rated as Unacceptable (U).

c. Sod Cover: Sod cover where it exists is in good condition and appears to be well maintained. However, various reaches have trees and vegetation on the levee crest and landside slope and no sod cover is present in those areas. This item is rated as Minimally Acceptable (M).

d. Encroachments: There were significant encroachments noted during the inspection which include 2 recently constructed houses encroaching on the landside slope, fill, debris, decks, ramps, pools, flagpoles, sheds, launches, etc. These encroachments are located on the levee crown, landside and riverside\slopes, and within 15' of the levee toes. This item is rated as Unacceptable (U).

e. Culverts / Discharge Pipes: There are two culverts/discharge pipes associated with the levee. No video tape inspections have been performed on these pipes. This item was rated as Unacceptable (U). Aside from videotaping, the overall condition of the interior drainage system is good. There are no known significant issues that would prevent the interior drainage features from performing as intended during the next flood event.

f. Riprap: There were numerous areas of heavy unwanted vegetation observed in the riprap. Approximately 75 LF of armor and underlayer stone at Corduroy Rd. is completely missing along the entire waterslope. Armor and underlayer stone is missing/displaced from the top of the waterside slope in the approx. 150 LF reach immediately to the east of the 75 LF reach at Corduroy Rd.. The top of the dike embankment is beginning to erode at this location. This item is rated as Unacceptable (U).

Note: A number of rated inspection items were changed from "Acceptable" (A) and "Minimally Acceptable" (M) in the 2013 P.I. Report to "Unacceptable" (U) in the 2018 P.I. Report due to new policy guidance received from HQ USACE in 2014.

7 Summary of Historical Periodic Inspections

The Reno Beach Project was given a rating of "Unacceptable" (U) based upon the findings of a joint PI undertaken with representatives of USACE and the Reno Beach – Howard Farms Conservancy District, on August 20, 2013. The inspection noted various serious deficiencies resulting in a continued overall rating of UNACCEPTABLE (U). A majority of the deficiencies were minimally acceptable but there were several unacceptable items that include: heavy vegetation and trees; various encroachments such as decks, trees, stairways, patios, gardens etc., including 2 houses encroaching on the landside slope; missing/displaced armor and underlayer stone along 225 LF of levee near Corduroy Road; failing steel plate wall bulkheading along Wards Canal; and lack of videotaping for two pump station outfall pipes. A complete list of project deficiencies is included in the 2013 PI report.

8 Significant Developments Since Last Periodic Inspection

The non-Federal sponsor has stated that they have completed upgrades to the interior pump stations.

Permission was granted 9 December 2016 to the Metroparks of the Toledo Area to construct features related to a large wetland restoration project adjacent to, and at, the Howard Farms portion of the ICW project. The overall Metroparks wetland restoration project, now completed, included restoration of approximately 700 acres of wetlands on farm property in the Howard Farms sub-division. The lead agency for this project was Toledo Metroparks, which was the Requestor for the Section 408 Alteration Review, and worked in partnership with the Reno Beach – Howard Farms Conservancy (ICW project sponsor), Lucas County Engineers, Ohio Coastal Zone Management, Ohio EPA, and the USGS. Toledo Metroparks also had this project reviewed and approved by ODNR's Dam Safety Unit.

Only the Wards Canal dike portion (between Toulon Drive and the existing community pump station) of the ICW project, and related interior drainage facilities, were impacted by the proposed Howard Farms Metropark project The main features of the Metropark project which impact the ICW project are as follows:

a. Addition of riprap along the landside face of the Wards Canal dike from the toe to the crest, for its entire length (Toulon Drive at the north end to the existing pump station at the south end).

b. Construction of a fish passage/pump station structure in the Wards Canal dike (required removal of a portion of the dike to build the structure). This is to allow fish to enter/leave the wetland/Wards Canal and to allow for pumping of water into and out of the wetland facility.

c. Construction of a new community interior drainage pump station at the north end of the Wards Canal dike near Toulon Drive. The ditch to the existing community interior drainage pump station (at the south end of the Wards Canal dike) was cutoff by a new interior wetland dike, requiring a new pump station to be built and a 24" RCP outfall pipe to go through the Wards Canal dike.

d. Construction of new ditch (parallel to and just south of Toulon Drive) to divert interior drainage from the Howard Farms sub-division to the new community pump station.

e. Construction of a backup community pump facility near the west end of the interior drainage ditch, just south of Toulon Drive.

f. Removal of the existing pump station structures, located at the south end of the Wards Canal dike (ICW project). Removal of existing pipes through the Wards Canal dike was required.

9 Emergency Action Plan

The Lake Erie Conservancy District Number 1 and the Howard Farms Conservancy District do not have an Emergency Action Plan (EAP) for this project and is a noted deficiency from the 2013 Periodic Inspection report.

10 Design Criteria Review

This section provides details on specific design criteria for the Reno Beach – Howard Farms Flood Risk Management Project. This section was developed from the review of available documentation from the USACE – Buffalo District and USACE design criteria guidance and policies.

10.1 Hydrology and Hydraulics

A coincidental frequency analysis of lake over topping and rainfall was not performed since the overtopping volume due to lake flooding greatly exceeds the rainfall contributions to interior flooding. In addition, with the minimum elevation of the lake side dike for existing conditions at 575.0 feet IGLD, the interior elevation becomes the lake level for events with a return period of about 10 years and greater. Hence rainfall would not have any additional effect upon the interior elevation. The historic high water level in Lake Erie was recorded to be 574.3 feet in June of 1987, which is just below what is considered the 500 year instantaneous maximum lake level of 576.2 feet.

According to the General Design Memorandum Main Report for the Reno Beach Howard Farms, Ohio Flood Protection Project June 1985, Revised October 1986, personal conversations with Reno Beach-Howard Farms pump operators disclosed that the existing pumping and drainage system is sufficient to handle rainfall runoff. Runoff resulting from a July 1969 rainfall event, which had a return interval of greater than 100 years, was adequately discharged by the existing pumps and no flood damage occurred. Additionally the pump operators knew of no flood damage occurring due to rainfall runoff in the past 50 years of their residency in the Reno beach project area.

Wave information for the Great Lakes has been developed by a numerical hindcast model utilizing historical wind data. Significant wave heights were calculated for 5, 10, 20, 50, and 100 year return periods along with the corresponding mean significant wave period. The information is presented for the four seasons of the year. Table 1 presents the 1% exceedence wave for each of the four seasons. Utilizing the wave information developed at Cedar Point Ohio, the annual deepwater significant wave height and wave period frequency curves were determined for all approach directions to the Reno Beach – Howard Farms dike.

Table 1

Season	Wave Height (feet)
Winter	16
Fall	14.8
Spring	14.4
Summer	8.8

The significant incident annual wave height at the flood control structure was found to range between 1.3 feet for a 1.02 year lake level and 1.43 year wave and 3.7 feet for a 500 year lake level and 50 year wave. The maximum incident annual wave height was found to vary

between1.8 feet and 4.8 feet, and the wave setup ranged between 0.313 feet and 0.699 feet, respectively for the lake level and wave conditions.

Maximum Wave Run-up for the Reno Beach-Howard Farms lakefront dike with a 1:1.5 side slope was determined. The maximum run-up elevations are the summation of the lake level, wave setup, and maximum wave run-up and form a set of elevations for various lake level probabilities and wave frequencies. From the total probability of a given maximum run-up elevations, the 500 year maximum run-up elevation of 580.5 feet IGLD was obtained.

According to the 1986 Design documents the Dike was designed to have an internal impervious core top elevation of 576.2 feet IGLD, which corresponds to a 500 year instantaneous maximum lake level. The Toe was excavated to 569.8feet IGLD and consists of one stone ranging from 3 to 6 tons. The dike composition proposed is presented in the Table 2 below. The values presented specifically take into consideration the wave analysis and include a factor of safety in order to remain stable with wave action.

Table 2

Layer	Number of Layers	Size	Layer Thickness (feet)	Top of Layer Elevation (feet, IGLD)
Toe Stone	One Stone	3-6 ton	4.6	576.7
Foreslope Armor	2	1-2 ton	5.4	-
Crest Armor	1	¼-2 ton	2.2	580.9
Underlayer	2	100-400 lbs	2.5	578.7
Impervious Core	-	-	-	576.2

10.2 Levee Embankment

Based on a review of the As-Constructed drawings and the October 1986 General Design Memorandum, the Design Criteria findings with respect to the levee embankment are discussed in the following paragraphs and summarized in Table 1 below.

The lakefront dike is unlikely to experience excessive settlement as a result of the proposed remedial construction since the rebuilt dike will be no longer or heavier than the existing dike and the existing structure has not settled due to the presence of any soft foundation layers. Slope stability calculations for the lakefront dike resulted in adequate minimum factors of safety. Through seepage and underseepage were both considered. Neither posed a problem according to the computations in Appendix B of the design memorandum.

The Wards Canal Levee is unlikely to experience excessive settlement as a result of the proposed remedial construction since the work only involves flattening the canal side slope and protecting the slope with riprap and toe stone. The height and length of the levee will remain the same and since the existing structure has not settled due to the presence of soft foundation soils, settlement of the repaired levee is not anticipated. Adequate minimum factors of safety were obtained for the slope stability of Wards Canal Levee. Through seepage and underseepage were both considered, but neither seemed to pose an issue due to the levee material and subsurface materials that are present.

Current *ER 1110-2-1806, Earthquake Design and Evaluation for Civil Works Projects,* Paragraph 9, dated July 1995, states that evaluation of embankment, slope, and/or foundation susceptibility to liquefaction or excessive deformation will be performed for all projects located in seismic zones 3 and 4 and those projects in zone 2 where materials exist that are suspected to be susceptible to liquefaction or excessive deformation. Such evaluation and analysis should also be performed regardless of the seismic zone location of the project, where capable faults or recent earthquakes have occurred.

The Reno Beach – Howard Farms flood control project is located in seismic zone 1 based on the Uniform Building Code Seismic Zone Map located in Appendix C of the ER. No recent earthquakes or fault activity have been documented in close proximity to the area; therefore, the need for seismic design analysis is not required, and this is also consistent with local and regional building codes. Most recent earthquake of magnitude 2.3 was many miles away near Garden View, Pennsylvania and occurred on February 19, 2013 as reported on the United States Geological Survey's website.

Table 3: Design Criteria for Levee Embankment

Design Criteria Parameter	Current Design Criteria	Design or As-Constructed Condition	Meets Current Design Criteria (Yes,No,N/A)
Slope Stability (EM 1110-2-1902)	10 – 12 feet	12 feet minimum	Yes
1. Crown Width	1 (V): 2 (H) or flatter	1 (V): 3 (H)	Yes
2. River Side Slope	1 (V): 2 (H) or flatter	1 (V): 2 (H) and 1 (V) : 1 (H)	* Yes / No
3. Land Side Slope			
Seepage Analysis and Control (EM 1110-2-1901)	Based on subsoil conditions and levee materials; project specific	There are about a half dozen locations in the dike system, particularly along the Howards Farms reach, where seepage has been reported during high levels. Amounts of seepage are not significant, but are noticeable.	No

Settlement Analysis (EM 1110-1-1904)	Based on subsoil conditions; project specific	No significant settlement has occurred since the dike system has been constructed.	Yes
Design, Construction and Maintenance of Relief Wells (EM 1110-2-1914)	N/A	N/A	N/A
Earthquake Design and Evaluation (ER 1110-2-1806)	Seismic Probability coefficient for Zone 1 is 0.05.	Not required per ER 1110-2-1806.	N/A
Conduits, Culverts, and Pipes (EM 1110-2-2902)	Project specific	There are 3 active pump station discharge pipes that go through the dike: a PVC at Cooley Canal, a 24" CMP at East Ave., and a 12" CMP. CMP can have a life of up to 50 years if properly coated. Since the CMP remained in place during the remedial construction in 1990, it may be beyond its current life.	No
Instrumentation of Embankment Dams and Levees (EM 1110-2-1908)	N/A	N/A	N/A

* Portions of the dike have landside slopes steeper than 1 (V) : 2 (H).

Figures

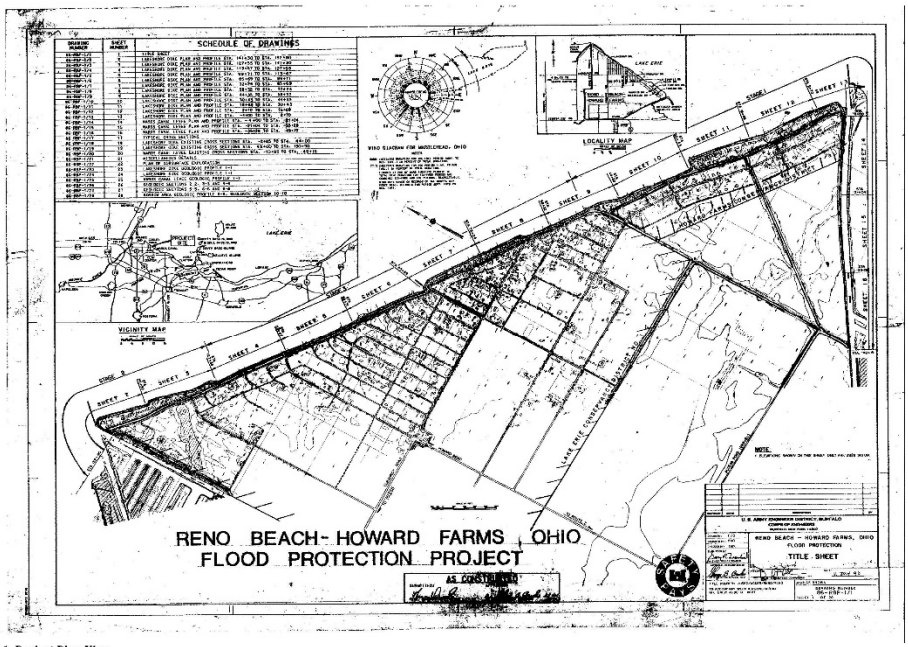


Figure 1: Project Plan View

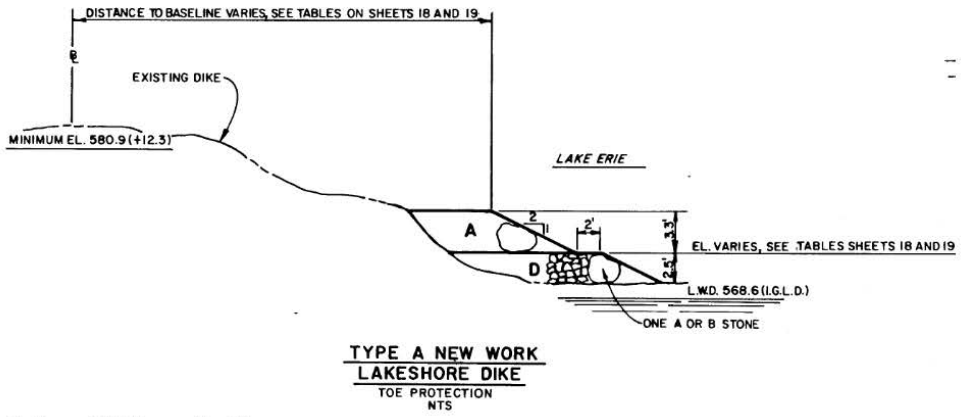


Figure 2: Type "A" Cross Section

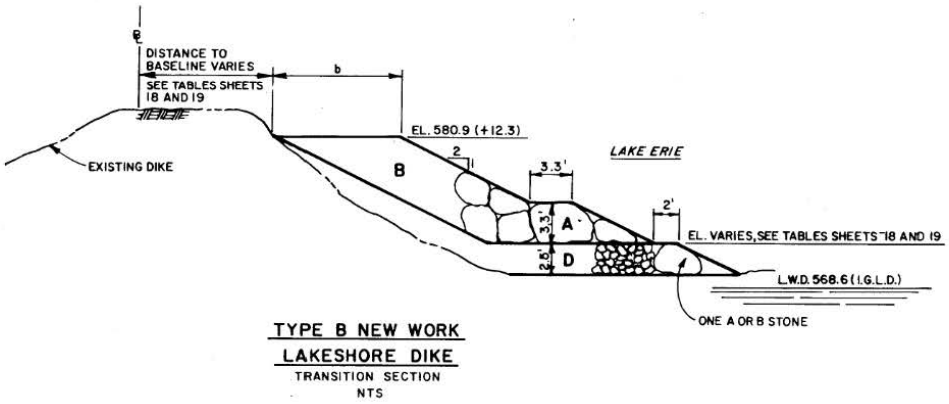


Figure 3: Type "B" Cross Section

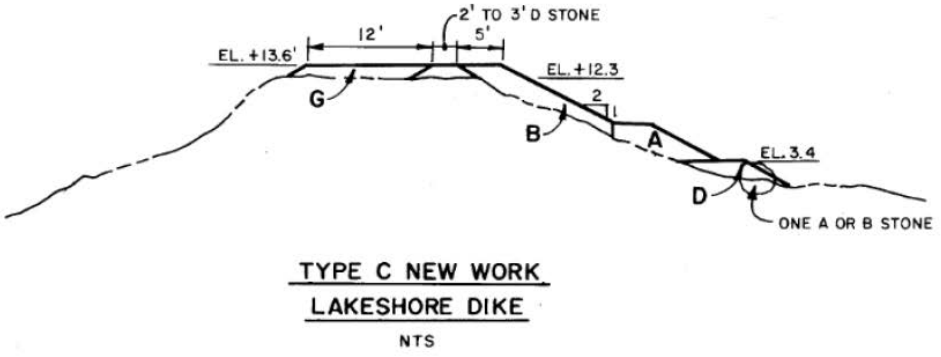


Figure 4: Type "C" Cross Section

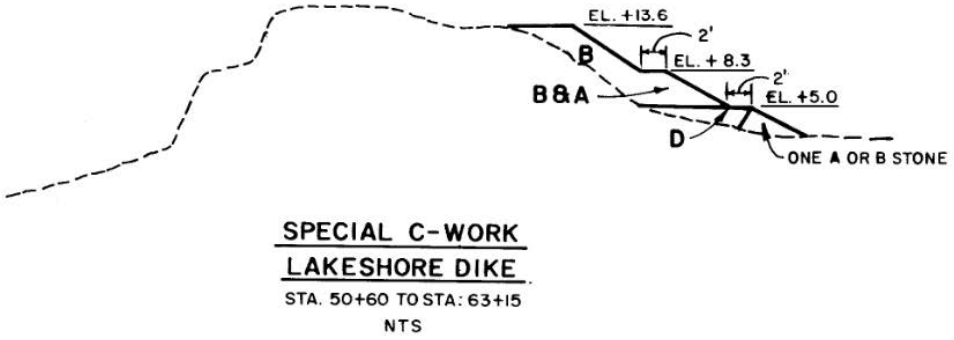


Figure 5: Type "C" Special

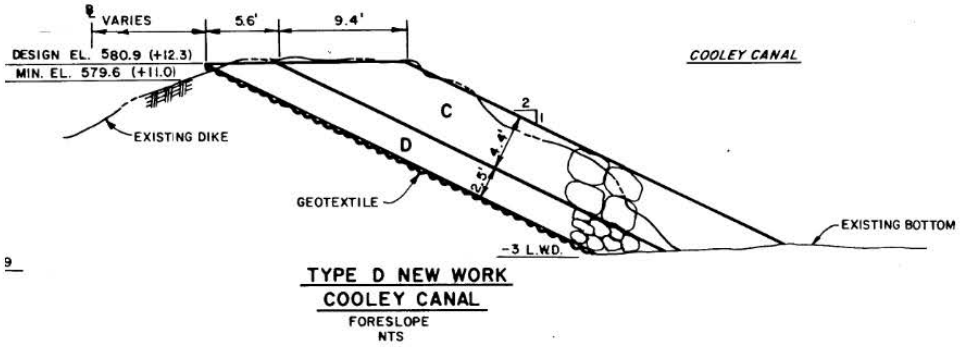


Figure 6: Type "D" Cross Section

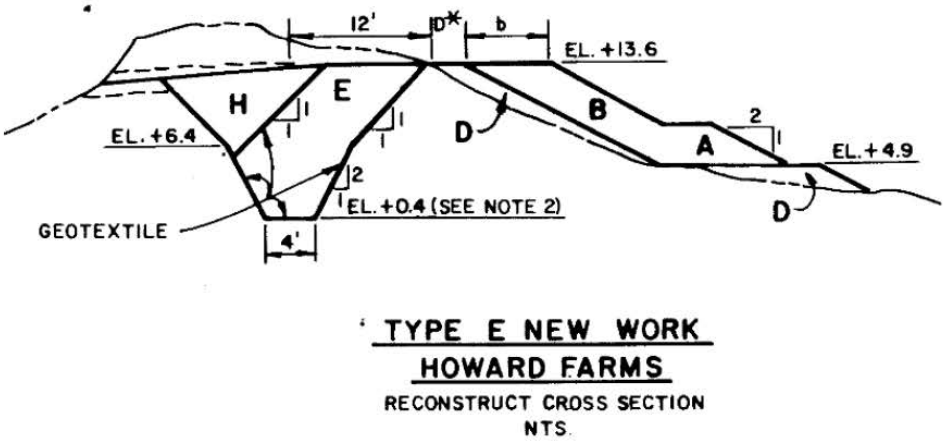


Figure 7: Type "E" Howard Farms Cross Section

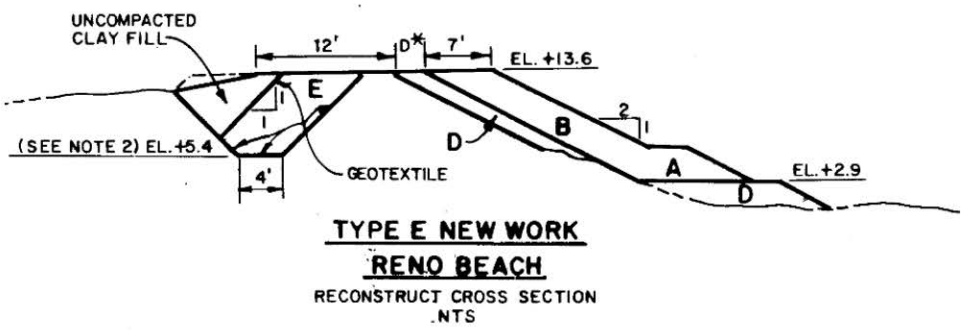


Figure 8: Type "E" Reno Beach Cross Section

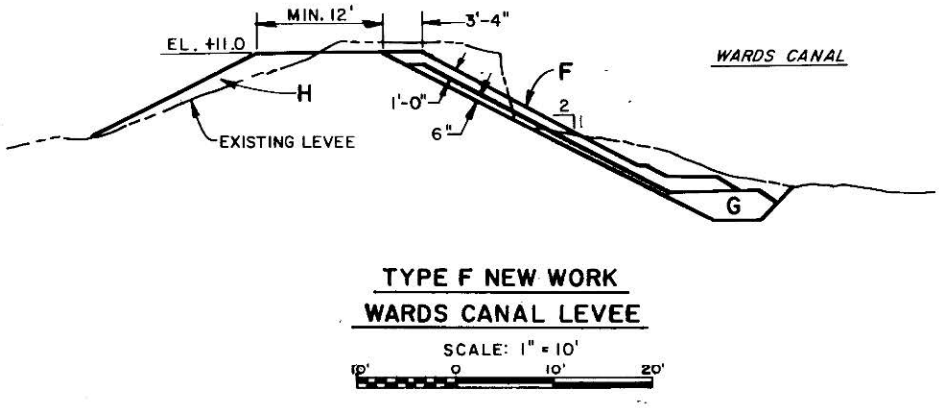


Figure 9: Type "F" Wards Canal Cross Section

Attachment E

Summary of Deficiencies & Recommendations

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Project: Reno Beach-Howard Farms - Shoreline and Wards Canal, Jerusalem

Inspect ID	Rating	Deficiency	Recommendations	Photo #	Category	Rated Item	Due Date	Station 1	Station 2
1	M	Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.	Coordinate sub-agreement for O&M of Wards Canal levee with USACE.	01_1.jpg 01_2.jpg 01_3.jpg 01_4.jpg 01_5.jpg 01_6.jpg 01_7.jpg 01_8.jpg	Levee Embankments	Encroachments	NA	-21+00	NA
2	U	Heavy unwanted vegetation and trees on landside and waterside slopes, crown is clear.	Remove unwanted vegetation within the vegetation free zone (toe to toe). Perform regular maintenance to prevent further unwanted vegetation development.	02_1.jpg 02_2.jpg 02_3.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	-11+00	-46+24
10	U	Significant unwanted vegetation and trees on landside and waterside.	Remove unwanted vegetation and trees.	10_1.jpg 10_2.jpg 10_3.jpg 10_4.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	-1+53	-11+00
12	U	SSP wall failure at Wards Canal levee waterside toe threatens dike integrity 300' upstream of canal entrance.	Repair and stabilize SSP wall.	12_1.jpg	Levee Embankments	Revetments other than Riprap	NA	-4+00	NA
13	M	Encroachments on both slopes and crown along Lagoon Drive. Examples include: decks, docks, stairs, retaining walls, wooden and brick walkways, and a patio.	Submit Section 408 Alteration Request to USACE or remove encroachments.	13_1.jpg 13_2.jpg	Levee Embankments	Encroachments	NA	28+76	-0+55
16	U	Significant trees and unwanted vegetation on both slopes and crown along Lagoon Drive.	Remove trees and unwanted vegetation.	16_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	27+24	-0+55
19	M	Residents and Conservancy District indicate seepage for group of residential homes along Lagoon Drive.	Coordinate with USACE to mitigate seepage.	19_1.jpg	Levee Embankments	Seepage	NA	3+62	NA
20	M	Crown settling into levee and sporadic holes near transition from stone levee to soil levee 750' west of Wards Canal along Lagoon Drive.	Repair settlement and fill holes with suitable material using compaction methods according to original plans and specifications.	20_1.jpg	Levee Embankments	Settlement	NA	5+07	NA
22	M	Residents and Conservancy District indicate seepage between two residential homes along Lagoon Drive.	Coordinate with USACE to mitigate seepage.	22_1.jpg	Levee Embankments	Seepage	NA	9+57	NA
24	M	Unauthorized alteration - satellite dish encroachment w conduit running through levee crown.	Submit Section 408 Alteration Request to USACE or remove encroachment.	24_1.jpg	Levee Embankments	Encroachments	NA	16+68	NA
25	U	Unauthorized alteration - two house encroachments on landside slope of levee along Lagoon Drive East near Marais Drive. See photos 29-32, FY08 Inspection Report.	Submit Section 408 Alteration Request to USACE or remove encroachments.	25_1.jpg	Levee Embankments	Encroachments	NA	20+00	NA
26	M	Large tree on levee landside toe.	Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	26_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	21+50	NA
29	M	Large tree on levee landside.	Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	29_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	25+86	NA
30	U	Trees and heavy vegetation on crown and both slopes from west end of Lagoon Drive to La Course Drive.	Remove trees and heavy vegetation from levee (toe to toe) and reestablish adequate sod cover. Perform regular maintenance to prevent further unwanted vegetation development.	30_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	38+88	30+00
33	M	Unauthorized alteration - encroachments on both slopes and crown along La Course Drive.	Submit Section 408 Alteration Request to USACE or remove encroachments.	33_1.jpg 33_2.jpg	Levee Embankments	Encroachments	NA	44+35	38+88
34	U	Minor unwanted vegetation in riprap on waterside slope.	Remove unwanted vegetation within the vegetation free zone.	34_1.jpg	Levee Embankments	Encroachments	NA	44+35	38+88
35	U	Trees and unwanted vegetation both slopes and crown from La Course Drive to Corduroy.	Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.		Levee Embankments	Unwanted Vegetation Growth	NA	49+14	44+35
36	M	Minor 2" settlement ring with 5' radius around well standpipe encroachment on crown.	Repair settlement.	36_1.jpg	Levee Embankments	Settlement	NA	43+00	NA
38	U	Trees and unwanted vegetation on levee landside at residential home on Corduroy.	Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	38_1.jpg 38_2.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	50+60	NA
39	M	Soft and woody unwanted vegetation in riprap on the levee waterside from along Corduroy to 600 feet west of the pump station along Dyke Road.	Remove unwanted vegetation within the vegetation free zone. Perform regular maintenance to prevent further unwanted vegetation development.	39_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	68+64	50+60

40	M	Deteriorated concrete revetment on waterside of levee, shown on As-Built Sheet 9 of 28 on Drawing Number 86-RBP-1/9, is incorporated into the project. The failing concrete is starting to expose the toe of the waterside slope.	Repair concrete revetment or replace with suitable material to protect levee.	40_1.jpg 40_2.jpg 40_3.jpg	Levee Embankments	Revetments other than Riprap	NA	50+60	NA
41	M	Soft vegetation on levee landside slope along Corduroy.	Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	41_1.jpg 41_2.jpg 41_3.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	63+32	63+43
44	U	Missing 150' of underlayer and armor stone along top of waterside slope east of Corduroy.	Replace missing stone.	44_1.jpg 44_2.jpg	Levee Embankments	Riprap Revetments & Bank Protection	NA	64+00	NA
46	U	Trees and unwanted vegetation on levee landside along Dyke Road.	Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	46_1.jpg 46_2.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	72+24	63+54
47	M	Unauthorized alerations - encroachments on levee waterside and crown along Dyke Road. Examples include: wooden decks, boat launchs, concrete pad, debris, flag pole, large light house, and concrete rubble.	Submit Section 408 Alteration Request to USACE or remove encroachments.	47_1.jpg 47_2.jpg	Levee Embankments	Encroachments	NA	78+56	64+34
48	M	Minor 6" depression on crown with 3'-4' circumference 650' west of Dyke Road Pump Station.	Repair depression.	48_1.jpg	Levee Embankments	Depressions/ Rutting	NA	70+00	NA
51	M	3 trees on levee landside toe 500' east of the west end of Dyke Road.	Remove trees within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	51_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	72+24	NA
52	M	Unathorized alteration - stairs encroaches on crown from new house on Dyke Street. House is beyond 15' from toe and not an encroachment.	Submit Section 408 Alteration Request to USACE or remove encroachment.	52_1.jpg 52_2.jpg	Levee Embankments	Encroachments	NA	75+00	NA
54	U	Large conifer tree on levee crown at west-most house on Dyke Road.	Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	54_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	78+56	NA
55	U	Significant trees and unwanted vegetation on both sideslopes and crown along Lakeway Drive between Dyke Roads.	Remove unwanted vegetation within the vegetation free zone (toe to toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	55_1.jpg 55_2.jpg 55_3.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	122+43	78+56
56	U	Levee inaccessible from west end of Dyke Road to Lakeway Drive.	Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.	56_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	85+69	78+56
57	M	Unauthorized alteration - stairs encroachment on levee landside slop 900' east of Dyke Road.	Submit Section 408 Alteration Request to USACE or remove encroachment.	57_1.jpg	Levee Embankments	Encroachments	NA	124+82	NA
58	M	Unauthorzed alteration - deck and ramp on levee waterside and crown 900' east of Dyke Road.	Submit Section 408 Alteration Request to USACE or remove encroachment.	58_1.jpg	Levee Embankments	Encroachments	NA	124+82	NA
61	M	Debris on riprap at east-most property on Dyke Road.	Remove debris.	61_1.jpg	Levee Embankments	Encroachments	NA	128+74	NA
63	M	Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.	Submit Section 408 Alteration Request to USACE or remove encroachments.	63_1.jpg 63_2.jpg 63_3.jpg 63_4.jpg 63_5.jpg 63_6.jpg 63_7.jpg	Levee Embankments	Encroachments	NA	128+74	149+73
64	M	Unauthorized alteration - encroachments on levee waterside slope. Examples include: concrete pad, bench, decks, fills on riprap, walkways, poles, debris, boats, launch, shed, stairs, concete rubble, ornamental anchor, ramps, and porch.	Submit Section 408 Alteration Request to USACE or remove encroachments.	64_1.jpg 64_2.jpg	Levee Embankments	Encroachments	NA	149+73	128+74
69	U	Levee inaccessible at west end of Dyke Road due to heavy vegetation and trees.	Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.	69_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	128+59	NA
70	M	Sporadic unwanted vegetation exists within riprap along Dyke Road. Examples include: small trees, shrubs, bushes.	Remove unwanted vegetation.	70_1.jpg	Levee Embankments	Riprap Revetments & Bank Protection	NA	148+05	130+00

71	U	Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.	Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	71_1.jpg 71_2.jpg 71_3.jpg 71_4.jpg 71_5.jpg 71_6.jpg 71_7.jpg 71_8.jpg 71_9.jpg 71_10.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	146+37	130+00
72	M	Minor depression on crown 150' west of Park Colony Boulevarde.	Fill depression.	72_1.jpg	Levee Embankments	Depressions/ Rutting	NA	134+38	NA
81	M	Minor depression on crown 300' east of Riceland Road.	Fill depression.	81_1.jpg	Levee Embankments	Depressions/ Rutting	NA	141+30	NA
86	M	Minor depression on levee crown across from Riceland Road.	Fill depression.	86_1.jpg	Levee Embankments	Depressions/ Rutting	NA	144+68	NA
90	M	Minor depression in levee crown 300' east of Cooley Canal.	Repair depression.	90_1.jpg	Levee Embankments	Depressions/ Rutting	NA	148+05	NA
91	M	Conservancy District does not maintain flood-fighting supplies.	Maintain flood-fighting supplies in accordance with USACE requirements.		General Items for All Flood Damage Reduction Systems	Emergency Supplies and Equipment (A or M only)	NA	150+00	NA
92	M	Sponsor does not have an Emergency Action Plan (EAP).	Develop an EAP in accordance with USACE requirements.		General Items for All Flood Damage Reduction Systems	Flood Preparedness and Training (A or M only)	NA	150+00	NA
93	U	Vegetation in on riprap at levee tie into Cooley Canal east jetty.	Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	93_1.jpg	Levee Embankments	Riprap Revetments & Bank Protection	NA	151+02	149+73
94	U	Unwanted vegetation on crown as levee wraps around Cooley Canal.	Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.	94_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	152+90	149+73
96	M	Unauthorized alteration - multiple encroachments on levee landside slope at levee wrap around at Cooley Canal.	Submit Section 408 Alteration Request to USACE or remove encroachments.	96_1.jpg	Levee Embankments	Encroachments	NA	149+73	NA
97	M	Operations & Maintenance (O&M) Manual was not presented at the inspection.	Conservancy District to ensure possession of a copy of the O&M Manual and bring to future inspections.		General Items for All Flood Damage Reduction Systems	Operations and Maintenance Manuals	NA	150+00	NA
98	U	Significant vegetation and trees in riprap on Cooley Canal levee.	Remove unwanted vegetation within the vegetation free zone and reestablish adequate riprap. Perform regular maintenance to prevent further unwanted vegetation development.	98_1.jpg	Levee Embankments	Riprap Revetments & Bank Protection	NA	152+90	151+02
102	M	Failing SSP wall bulkheading along Ward's Canal shoreline threatens dike integrity. There is a concrete gravity wall on the waterside slope with unwanted vegetation that appears to be showing signs of tilting.	Repair and stabilize bulkheading.	102_1.jpg 102_2.jpg 102_3.jpg	Levee Embankments	Revetments other than Riprap	NA	-9+00	-11+00
103	U	Levee inaccessible 400' west of Wards Canal due to unwanted vegetation and encroachments.	Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.	103_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	0+91	2+00
104	U	Levee inaccessible from west end of Lagoon Drive to La Course Drive due to heavy vegetation and trees.	Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.	104_1.jpg	Levee Embankments	Unwanted Vegetation Growth	NA	30+00	37+69
105	U	Levee inaccesible from La Course Drive to Corduroy due to heavy vegetation and trees.	Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.		Levee Embankments	Unwanted Vegetation Growth	NA	49+14	44+35
106	U	Inadequate sod cover on levee landside slope due to unauthorized alterations and unwanted vegetation.	Remove unauthorized alterations and unwanted vegetation. Repair sod cover and maintain in accordance with USACE requirements.	106_1.jpg 106_2.jpg	Levee Embankments	Sod Cover	NA	146+37	146+37
107	U	Drainage ditch pump station discharge at intersection of Dyke Road and Corduroy penetrates through the levee system and has not been videotape inspected within last 5-years.	Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.	107_1.jpg 107_2.jpg 107_3.jpg	Levee Embankments	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	NA	63+15	NA
108	U	Drainage ditch pump station discharge to Cooley Canal penetrates through the levee system and has not been videotape inspected within last 5-years.	Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.	108_1.jpg 108_2.jpg	Levee Embankments	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	NA	154+44	NA

Note 1: Since the Reno Beach-Howard Farms Levee system is currently INACTIVE in the USACE Rehabilitation Program, no deficiency correction due dates are listed. Deficiency correction due dates will be included if the project becomes ACTIVE again.

Attachment F

Levee Inspection Maps

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Levee Inspection Map

Reno Beach-Howard Farms - Shoreline and Wards Canal, Jerusalem

Location: Reno Beach, OH
Year/cycle: 2018 p
Inspection type: Periodic
Inspected by: USACE - Buffalo District
Inspection date(s): 08/22/2018
Observation ID prefix: USACE_CELRB_OH29_2018_p
Map created: 06 March 2019

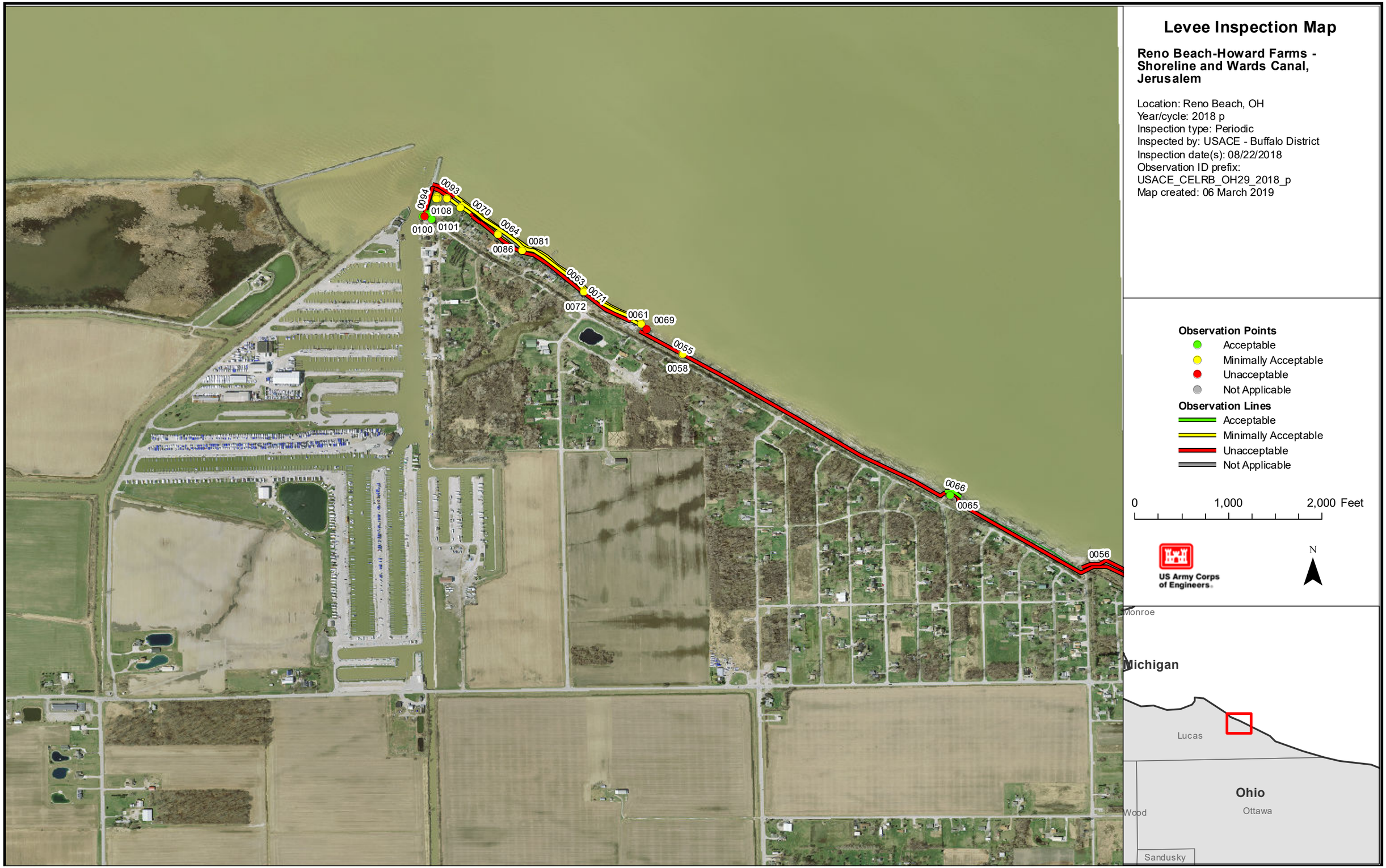
Observation Points
- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

Observation Lines
- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 1,000 2,000 Feet

US Army Corps of Engineers

N



Levee Inspection Map

Reno Beach-Howard Farms - Shoreline and Wards Canal, Jerusalem

Location: Reno Beach, OH
Year/cycle: 2018 p
Inspection type: Periodic
Inspected by: USACE - Buffalo District
Inspection date(s): 08/22/2018
Observation ID prefix: USACE_CELRB_OH29_2018_p
Map created: 06 March 2019

Observation Points
- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

Observation Lines
- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 1,000 2,000 Feet

US Army Corps of Engineers

N

Attachment G

Rehabilitation Program Eligibility Determination Checklist

Attachment G - Rehabilitation Program Eligibility Determination Checklist

Rehabilitation Program Eligibility Determination	
Yes ☐ No ☑	Public sponsor provided maintenance information per the Public Sponsor Pre-Inspection Form.
Yes ☐ No ☐ N/A ☑	Non-federal levee system meets Initial Eligibility criteria.
If either of the above items is marked "No" the levee system is not eligible.	
Rating	**Rated Item**
Levee Embankments	
A ☐ M ☐ U ☑	3. Encroachments
A ☐ U ☐ N/A ☑	4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures)
A ☐ M ☐ U ☑	5. Slope Stability
A ☐ M ☐ U ☑	6. Erosion/ Bank Caving
A ☐ M ☐ U ☑	10. Animal Control
A ☐ M ☐ U ☑ N/A ☐	11. Culverts/Discharge Pipes (This item includes both concrete and corrugated metal pipes.)
A ☐ M ☐ U ☐ N/A ☑	14. Underseepage Relief Wells/Toe Drainage Systems
~~**Floodwalls (Not Applicable)**~~	
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐	~~2. Encroachments~~
~~A~~ ☐ ~~U~~ ☐ ~~N/A~~ ☐	~~3. Closure Structures (Stop Log Closures and Gates)~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐	~~5. Tilting, Sliding, or Settlement of Concrete Structures~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐	~~6. Foundation of Concrete Structures~~

~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☐	~~8. Underseepage Relief Wells/Toe Drainage Systems~~
~~Interior Drainage System (Not Applicable)~~	
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~9. Culverts/Discharge Pipes~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~10. Sluice/Slide Gates~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~11. Flap Gates/Flap Valves/Pinch Valves~~
~~Pump Stations (Not Applicable)~~	
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~17. Intake and Discharge Pipelines~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~18. Sluice/Slide Gates~~
~~A~~ ☐ ~~M~~ ☐ ~~U~~ ☐ ~~N/A~~ ☑	~~19. Flap Gates/Flap Valves/Pinch Valves~~
Rehabilitation Program Status	
Active ☐	System meets all interim eligibility criteria, including having received a rating of A, M, N/A or Yes for all subset items and is therefore eligible for rehabilitation assistance.
Inactive ☑	System does not meet interim eligibility requirements.
Comments: Items 3. (Encroachments), 5. (Slope Stability), 6. (Erosion/Bank Caving), and 10. (Animal Control) are all rated "Unacceptable" (U) due to heavy trees and vegetation in various locations on the landside, waterside, and crest of the dike system preventing adequate inspection. Item 11. (Culverts/Discharge Pipes) is rated "Unacceptable" (U) due to three pump station discharge pipes, which extend through the dike system, that have not been videotape inspected in past 5 years.	

Note: Item numbers listed above refer to their placement in the Inspection Checklist
In order to be eligible, all of the following items must be rated A, M, N/A or Yes.

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Attachment H

Flood Damage Reduction Systems Inspection Report

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: Reno Beach-Howard Farms - Shoreline and Wards Canal, Jerusalem

Public Sponsor(s): Reno Beach/Howard Farms Conservancy District

Public Sponsor Representative: Mr. Richard Hozak

Sponsor Phone: (419)836-7650

Sponsor Email: N/A

Corps of Engineers Inspector: USACE - Buffalo District

Inspection Start Date: 8/22/2018

Inspection End Date: 8/22/2018

Inspection Report Prepared By: Joseph B. Kasperski, IE

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approved By:

Date Approved:

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☐ **Continuing Eligibility Inspection (Routine)**
- ☒ **Continuing Eligibility Inspection (Periodic)**

Overall Segment / System Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☒ **Unacceptable**

Contents of Report:

- ☒ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☒ **General Items for All Flood Control Works**
- ☒ **Levee Embankment**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☒ **Pump Stations**
- ☐ **FDR System Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

US Army Corps
of Engineers®

Flood Damage Reduction Segment / System Public Sponsor Pre-Inspection Form

The following information is to be provided by the levee district sponsor prior to an inspection. This information will be used to help evaluate the organizational capability of the levee district to manage the levee segment / system maintenance program.

1. Levee segment / system and district: (name of the segment / system and levee district) Reno Beach-Howard Farms - Shoreline and Wards Canal, Jerusalem for CELRB
2. Reporting period: (month/day/year to month/day/year)
3. Summary of maintenance required by last inspection report:
4. Summary of maintenance performed this reporting period:
5. Summary of maintenance planned next reporting period:
6. Summary of changes to segment / system since last inspection:
7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Public Sponsor Pre-Inspection Report

The following information is to be provided by the levee district sponsor prior to an inspection

8. Levee district organization: (elected or appointed levee district officials and key employees)

Name	Position	Mailing Address	Phone Number	Email Address

General Instructions for the Inspection of Flood Damage Reduction Segments / Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate each Flood Damage Reduction "Segment" of the system. The overall system rating will be the lowest segment rating in the system.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall Segment / System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the segment / system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the segment / system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)

b. Photos of the general system condition and noted deficiencies.

c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.

d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.

e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Segments / Systems

For use during all inspections of all Flood Damage Reduction Segments / Systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Operations and Maintenance Manuals	**M**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	OH29_2018_p_0097: Station_1 150+00: Operations & Maintenance (O&M) Manual was not presented at the inspection.: Conservancy District to ensure possession of a copy of the O&M Manual and bring to future inspections. (M)
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**M**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	OH29_2018_p_0091: Station_1 150+00: Conservancy District does not maintain flood-fighting supplies.: Maintain flood-fighting supplies in accordance with USACE requirements. (M)
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**M**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	OH29_2018_p_0092: Station_1 150+00: Sponsor does not have an Emergency Action Plan (EAP).: Develop an EAP in accordance with USACE requirements. (M)
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	OH29_2018_p_0002: Station_1 -11+00: Station_2 -46+24: Heavy unwanted vegetation and trees on landside and waterside slopes, crown is clear.: Remove unwanted vegetation within the vegetation free zone (toe to toe). Perform regular maintenance to prevent further unwanted vegetation development. (U) OH29_2018_p_0010: Station_1 -1+53: Station_2 -11+00: Significant unwanted vegetation and trees on landside and waterside.: Remove unwanted vegetation and trees. (U) OH29_2018_p_0016: Station_1 27+24: Station_2 -0+55: Significant trees and unwanted vegetation on both slopes and crown along Lagoon Drive.: Remove trees and unwanted vegetation. (U) OH29_2018_p_0026: Station_1 21+50: Large tree on levee landside toe.: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (M) OH29_2018_p_0029: Station_1 25+86: Large tree on levee landside.: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (M) OH29_2018_p_0030: Station_1 38+88: Station_2 30+00: Trees and heavy vegetation on crown and both slopes from west end of Lagoon Drive to La Course Drive.: Remove trees and heavy vegetation from levee (toe to toe) and reestablish adequate sod cover. Perform regular maintenance to prevent further unwanted vegetation development. (U) OH29_2018_p_0035: Station_1 49+14: Station_2 44+35: Trees and unwanted vegetation both slopes and crown from La Course Drive to Corduroy.: Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0038: Station_1 50+60: Trees and unwanted vegetation on levee landside at residential home on Corduroy.: Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0039: Station_1 68+64: Station_2 50+60:
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				Soft and woody unwanted vegetation in riprap on the levee waterside from along Corduroy to 600 feet west of the pump station along Dyke Road.: Remove unwanted vegetation within the vegetation free zone. Perform regular maintenance to prevent further unwanted vegetation development. (M) OH29_2018_p_0041: Station_1 63+32: Station_2 63+43: Soft vegetation on levee landside slope along Corduroy.: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (M) OH29_2018_p_0046: Station_1 72+24: Station_2 63+54: Trees and unwanted vegetation on levee landside along Dyke Road.: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0051: Station_1 72+24: 3 trees on levee landside toe 500' east of the west end of Dyke Road.: Remove trees within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (M) OH29_2018_p_0054: Station_1 78+56: Large conifer tree on levee crown at west-most house on Dyke Road.: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0055: Station_1 122+43: Station_2 78+56: Significant trees and unwanted vegetation on both sideslopes and crown along Lakeway Drive between Dyke Roads.: Remove unwanted vegetation within the vegetation free zone (toe to toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0056: Station_1 85+69: Station_2 78+56: Levee inaccessible from west end of Dyke Road to Lakeway Drive.: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting. (U) OH29_2018_p_0069: Station_1 128+59: Levee inaccessible at west end of Dyke Road due to heavy vegetation and trees.: Remove vegetation and encroachments to provide a clear

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Levee Embankments

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				path for operations and maintenance, inspection, emergency patrols, and flood-fighting. (U) OH29_2018_p_0071: Station_1 146+37: Station_2 130+00: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0094: Station_1 152+90: Station_2 149+73: Unwanted vegetation on crown as levee wraps around Cooley Canal.: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0103: Station_1 0+91: Station_2 2+00: Levee inaccessible 400' west of Wards Canal due to unwanted vegetation and encroachments.: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting. (U) OH29_2018_p_0104: Station_1 30+00: Station_2 37+69: Levee inaccessible from west end of Lagoon Drive to La Course Drive due to heavy vegetation and trees.: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting. (U) OH29_2018_p_0105: Station_1 49+14: Station_2 44+35: Levee inaccesible from La Course Drive to Corduroy due to heavy vegetation and trees.: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting. (U)
2. Sod Cover	**U**	**A**	There is good coverage of sod over the levee.	OH29_2018_p_0106: Station_1 146+37: Station_2 146+37: Inadequate sod cover on levee landside slope due to unauthorized alterations and unwanted vegetation.: Remove unauthorized alterations and unwanted vegetation. Repair sod cover and maintain in accordance with USACE requirements. (U)
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	

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3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	OH29_2018_p_0001: Station_1 -21+00: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.: Coordinate sub-agreement for O&M of Wards Canal levee with USACE. (M) OH29_2018_p_0007: Station_1 -14+00: Toledo Metroparks Alteration - 24" outfall with flapgate on waterside of Wards Canal levee.: NA (A) OH29_2018_p_0008: Station_1 -14+00: Toledo Metroparks Alteration - Metroparks levee ties into Wards Canal levee.: NA (A) OH29_2018_p_0009: Station_1 -14+00: Toledo Metroparks Alteration - Pump station to be operated by Conservancy District per sub-agreement.: NA (A) OH29_2018_p_0013: Station_1 28+76: Station_2 -0+55: Encroachments on both slopes and crown along Lagoon Drive. Examples include: decks, docks, stairs, retaining walls, wooden and brick walkways, and a patio.: Submit Section 408 Alteration Request to USACE or remove encroachments. (M) OH29_2018_p_0014: Station_1 -1+53: 12763 Lagoon Drive levee repair of toe and slope deemed acceptable by USACE per FY17 RI Report.: NA (A) OH29_2018_p_0024: Station_1 16+68: Unauthorized alteration - satellite dish encroachment w conduit running through levee crown.: Submit Section 408 Alteration Request to USACE or remove encroachment. (M) OH29_2018_p_0025: Station_1 20+00: Unauthorized alteration - two house encroachments on landside slope of levee along Lagoon Drive East near Marais Drive. See photos 29-32, FY08 Inspection Report.: Submit Section 408 Alteration Request to USACE or remove encroachments. (U) OH29_2018_p_0033: Station_1 44+35: Station_2 38+88: Unauthorized alteration - encroachments on both slopes and crown along La Course Drive.: Submit Section 408 Alteration Request to USACE or remove encroachments. (M) OH29_2018_p_0034: Station_1 44+35: Station_2 38+88: Minor unwanted vegetation in riprap on waterside slope.: Remove unwanted vegetation within the vegetation free
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	

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				zone. (U) OH29_2018_p_0047: Station_1 78+56: Station_2 64+34: Unauthorized alerations - encroachments on levee waterside and crown along Dyke Road. Examples include: wooden decks, boat launchs, concrete pad, debris, flag pole, large light house, and concrete rubble.: Submit Section 408 Alteration Request to USACE or remove encroachments. (M) OH29_2018_p_0052: Station_1 75+00: Unathorized alteration - stairs encroaches on crown from new house on Dyke Street. House is beyond 15' from toe and not an encroachment.: Submit Section 408 Alteration Request to USACE or remove encroachment. (M) OH29_2018_p_0057: Station_1 124+82: Unauthorized alteration - stairs encroachment on levee landside slop 900' east of Dyke Road.: Submit Section 408 Alteration Request to USACE or remove encroachment. (M) OH29_2018_p_0058: Station_1 124+82: Unauthorzed alteration - deck and ramp on levee waterside and crown 900' east of Dyke Road.: Submit Section 408 Alteration Request to USACE or remove encroachment. (M) OH29_2018_p_0061: Station_1 128+74: Debris on riprap at east-most property on Dyke Road.: Remove debris. (M) OH29_2018_p_0063: Station_1 128+74: Station_2 149+73: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.: Submit Section 408 Alteration Request to USACE or remove encroachments. (M) OH29_2018_p_0064: Station_1 149+73: Station_2 128+74: Unauthorized alteration - encroachments on levee waterside slope. Examples include: concrete pad, bench, decks, fills on riprap, walkways, poles, debris, boats, launch, shed, stairs, concete rubble, ornamental anchor, ramps, and porch.: Submit Section 408 Alteration Request to USACE or remove encroachments. (M) OH29_2018_p_0065: Station_1 98+64: Pre-project cottages along Lakeway Drive at end of Waterway Road; one remains, one removed (foundation remains).: NA (A) OH29_2018_p_0096: Station_1 149+73: Unauthorized alteration - multiple encroachments on levee landside slope at levee wrap around at Cooley Canal.: Submit Section 408

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For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				Alteration Request to USACE or remove encroachments. (M)
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	**U**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	OH29_2018_p_0006: Station_1 -48+49: Project limit at Wards Canal, levee ties into non-project segment.: NA (A); The visible portions of the levee appears to be stable and no signs of stability issues were present. This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	No erosion or bank caving observed in the visible portions of the levee. This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[2]	**U**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	OH29_2018_p_0020: Station_1 5+07: Crown settling into levee and sporadic holes near transition from stone levee to soil levee 750' west of Wards Canal along Lagoon Drive.: Repair settlement and fill holes with suitable material using compaction methods according to original plans and specifications. (M) OH29_2018_p_0036: Station_1 43+00: Minor 2" settlement ring with 5' radius around well standpipe encroachment on crown.: Repair settlement. (M); This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	

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8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	OH29_2018_p_0048: Station_1 70+00: Minor 6" depression on crown with 3'-4' circumference 650' west of Dyke Road Pump Station.: Repair depression. (M) OH29_2018_p_0072: Station_1 134+38: Minor depression on crown 150' west of Park Colony Boulevarde.: Fill depression. (M) OH29_2018_p_0081: Station_1 141+30: Minor depression on crown 300' east of Riceland Road.: Fill depression. (M) OH29_2018_p_0086: Station_1 144+68: Minor depression on levee crown across from Riceland Road.: Fill depression. (M) OH29_2018_p_0090: Station_1 148+05: Minor depression in levee crown 300' east of Cooley Canal.: Repair depression. (M); This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**U**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	No cracking was seen on the visible portions of the levee. This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	No animal burrows were located in the visible portions of the levee during the inspection. This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)	**U**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	OH29_2018_p_0107: Station_1 63+15: Drainage ditch pump station discharge at intersection of Dyke Road and Corduroy penetrates through the levee system and has not been videotape inspected within last 5-years.: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE. (U) OH29_2018_p_0108: Station_1 154+44: Drainage ditch

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		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	pump station discharge to Cooley Canal penetrates through the levee system and has not been videotape inspected within last 5-years.: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE. (U) OH29_2018_p_0109: Station_1 -14+00: Toledo Metropark Alteration pump station discharge pipe to Wards Canal penetrates through the levee system. Therefore, it will require videotape inspection every 5-years.: NA (A)
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	**U**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	OH29_2018_p_0044: Station_1 64+00: Missing 150' of underlayer and armor stone along top of waterside slope east of Corduroy.: Replace missing stone. (U) OH29_2018_p_0066: Station_1 98+64: Station_2 96+73: Stone revetment recharged and potentially raised to a higher elevation of protection round cottage on levee crown at Lakeway Drive, considered acceptable maintenance.: NA (A) OH29_2018_p_0070: Station_1 148+05: Station_2 130+00: Sporadic unwanted vegetation exists within riprap along Dyke Road. Examples include: small trees, shrubs, bushes.: Remove unwanted vegetation. (M) OH29_2018_p_0093: Station_1 151+02: Station_2 149+73: Vegetation in on riprap at levee tie into Cooley Canal east jetty.: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development. (U) OH29_2018_p_0098: Station_1 152+90: Station_2 151+02: Significant vegetation and trees in riprap on Cooley Canal levee.: Remove unwanted vegetation within the vegetation free zone and reestablish adequate riprap. Perform regular maintenance to prevent further unwanted vegetation development. (U); This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	

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				significant portions of the levee system.
13. Revetments other than Riprap	**U**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	OH29_2018_p_0012: Station_1 -4+00: SSP wall failure at Wards Canal levee waterside toe threatens dike integrity 300' upstream of canal entrance.: Repair and stabilize SSP wall. (U) OH29_2018_p_0028: Station_1 23+42: Retaining wall is stable on landside at west end of Lagoon Drive.: NA (A) OH29_2018_p_0040: Station_1 50+60: Deteriorated concrete revetment on waterside of levee, shown on As-Built Sheet 9 of 28 on Drawing Number 86-RBP-1/9, is incorporated into the project. The failing concrete is starting to expose the toe of the waterside slope.: Repair concrete revetment or replace with suitable material to protect levee. (M) OH29_2018_p_0102: Station_1 -9+00: Station_2 -11+00: Failing SSP wall bulkheading along Ward's Canal shoreline threatens dike integrity. There is a concrete gravity wall on the waterside slope with unwanted vegetation that appears to be showing signs of tilting.: Repair and stabilize bulkheading. (M)
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**NA**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage	**U**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	OH29_2018_p_0019: Station_1 3+62: Residents and Conservancy District indicate seepage for group of residential homes along Lagoon Drive.: Coordinate with USACE to mitigate seepage. (M) OH29_2018_p_0022: Station_1 9+57: Residents and
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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				Conservancy District indicate seepage between two residential homes along Lagoon Drive.: Coordinate with USACE to mitigate seepage. (M); This item is rated "U" due to significant heavy vegetation and trees preventing adequate inspection of significant portions of the levee system.

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.
[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.
[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

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For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0002 **Title:** USACE_CELRB_OH29_2018_p_0002_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Heavy unwanted vegetation and trees on landside and waterside slopes, crown is clear.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe). Perform regular maintenance to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0002 **Title:** USACE_CELRB_OH29_2018_p_0002_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Heavy unwanted vegetation and trees on landside and waterside slopes, crown is clear.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe). Perform regular maintenance to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0002 **Title:** USACE_CELRB_OH29_2018_p_0002_3.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Heavy unwanted vegetation and trees on landside and waterside slopes, crown is clear.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe). Perform regular maintenance to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0010 **Title:** USACE_CELRB_OH29_2018_p_0010_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant unwanted vegetation and trees on landside and waterside.; Action: Remove unwanted vegetation and trees.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0010 **Title:** USACE_CELRB_OH29_2018_p_0010_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant unwanted vegetation and trees on landside and waterside.; Action: Remove unwanted vegetation and trees.
	**Inspect ID:** OH29_2018_p_0010 **Title:** USACE_CELRB_OH29_2018_p_0010_3.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant unwanted vegetation and trees on landside and waterside.; Action: Remove unwanted vegetation and trees.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0010 **Title:** USACE_CELRB_OH29_2018_p_0010_4.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant unwanted vegetation and trees on landside and waterside.; Action: Remove unwanted vegetation and trees.
	**Inspect ID:** OH29_2018_p_0016 **Title:** USACE_CELRB_OH29_2018_p_0016_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees and unwanted vegetation on both slopes and crown along Lagoon Drive.; Action: Remove trees and unwanted vegetation.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0026 **Title:** USACE_CELRB_OH29_2018_p_0026_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Large tree on levee landside toe.; Action: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0029 **Title:** USACE_CELRB_OH29_2018_p_0029_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Large tree on levee landside.; Action: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0030 **Title:** USACE_CELRB_OH29_2018_p_0030_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Trees and heavy vegetation on crown and both slopes from west end of Lagoon Drive to La Course Drive.; Action: Remove trees and heavy vegetation from levee (toe to toe) and reestablish adequate sod cover. Perform regular maintenance to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0038 **Title:** USACE_CELRB_OH29_2018_p_0038_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Trees and unwanted vegetation on levee landside at residential home on Corduroy.; Action: Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0038 **Title:** USACE_CELRB_OH29_2018_p_0038_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Trees and unwanted vegetation on levee landside at residential home on Corduroy.; Action: Remove unwanted vegetation within the vegetation free zone (15 feet from the levee toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0039 **Title:** USACE_CELRB_OH29_2018_p_0039_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Soft and woody unwanted vegetation in riprap on the levee waterside from along Corduroy to 600 feet west of the pump station along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone. Perform regular maintenance to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0041 **Title:** USACE_CELRB_OH29_2018_p_0041_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Soft vegetation on levee landside slope along Corduroy.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0041 **Title:** USACE_CELRB_OH29_2018_p_0041_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Soft vegetation on levee landside slope along Corduroy.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0041 **Title:** USACE_CELRB_OH29_2018_p_0041_3.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: Soft vegetation on levee landside slope along Corduroy.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0046 **Title:** USACE_CELRB_OH29_2018_p_0046_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Trees and unwanted vegetation on levee landside along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0046 **Title:** USACE_CELRB_OH29_2018_p_0046_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Trees and unwanted vegetation on levee landside along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0051 **Title:** USACE_CELRB_OH29_2018_p_0051_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Minimally Acceptable; Remarks: 3 trees on levee landside toe 500' east of the west end of Dyke Road.; Action: Remove trees within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0054 **Title:** USACE_CELRB_OH29_2018_p_0054_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Large conifer tree on levee crown at west-most house on Dyke Road.; Action: Remove tree within the vegetation free zone and reestablish adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0055 **Title:** USACE_CELRB_OH29_2018_p_0055_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees and unwanted vegetation on both sideslopes and crown along Lakeway Drive between Dyke Roads.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0055 **Title:** USACE_CELRB_OH29_2018_p_0055_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees and unwanted vegetation on both sideslopes and crown along Lakeway Drive between Dyke Roads.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0055 **Title:** USACE_CELRB_OH29_2018_p_0055_3.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees and unwanted vegetation on both sideslopes and crown along Lakeway Drive between Dyke Roads.; Action: Remove unwanted vegetation within the vegetation free zone (toe to toe) and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0056 **Title:** USACE_CELRB_OH29_2018_p_0056_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Levee inaccessible from west end of Dyke Road to Lakeway Drive.; Action: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.
	**Inspect ID:** OH29_2018_p_0069 **Title:** USACE_CELRB_OH29_2018_p_0069_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Levee inaccessible at west end of Dyke Road due to heavy vegetation and trees.; Action: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_3.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_4.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_5.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_6.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_7.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_8.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_9.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0071 **Title:** USACE_CELRB_OH29_2018_p_0071_10.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Significant trees, unwanted vegetation, and gardens on levee landside slope along Dyke Road.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0094 **Title:** USACE_CELRB_OH29_2018_p_0094_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Unwanted vegetation on crown as levee wraps around Cooley Canal.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0103 **Title:** USACE_CELRB_OH29_2018_p_0103_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Levee inaccessible 400' west of Wards Canal due to unwanted vegetation and encroachments.; Action: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0104 **Title:** USACE_CELRB_OH29_2018_p_0104_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Rating: Unacceptable; Remarks: Levee inaccessible from west end of Lagoon Drive to La Course Drive due to heavy vegetation and trees.; Action: Remove vegetation and encroachments to provide a clear path for operations and maintenance, inspection, emergency patrols, and flood-fighting.
	**Inspect ID:** OH29_2018_p_0106 **Title:** USACE_CELRB_OH29_2018_p_0106_1.jpg **Rated Item:** 2. Sod Cover **Caption:** Rating: Unacceptable; Remarks: Inadequate sod cover on levee landside slope due to unauthorized alterations and unwanted vegetation.; Action: Remove unauthorized alterations and unwanted vegetation. Repair sod cover and maintain in accordance with USACE requirements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0106 **Title:** USACE_CELRB_OH29_2018_p_0106_2.jpg **Rated Item:** 2. Sod Cover **Caption:** Rating: Unacceptable; Remarks: Inadequate sod cover on levee landside slope due to unauthorized alterations and unwanted vegetation.; Action: Remove unauthorized alterations and unwanted vegetation. Repair sod cover and maintain in accordance with USACE requirements.
	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.

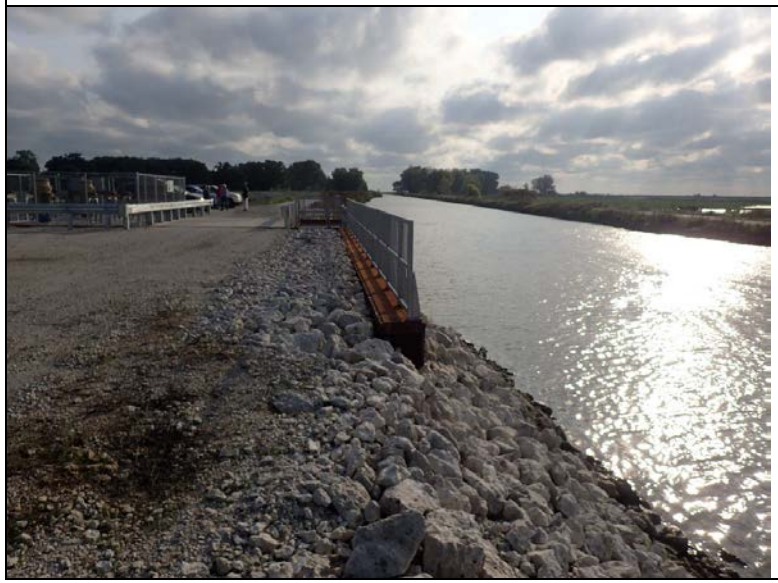
Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.
	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_3.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_4.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.
	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_5.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_6.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.
	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_7.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0001 **Title:** USACE_CELRB_OH29_2018_p_0001_8.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Toledo Metropark Alteration includes sub-agreement for transfer of maintenance on crown and landside slope of Wards Canal levee from Conservancy District to Metroparks. Requires inspection and guidance from USACE.; Action: Coordinate sub-agreement for O&M of Wards Canal levee with USACE.
	**Inspect ID:** OH29_2018_p_0007 **Title:** USACE_CELRB_OH29_2018_p_0007_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Toledo Metroparks Alteration - 24" outfall with flapgate on waterside of Wards Canal levee.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0008 **Title:** USACE_CELRB_OH29_2018_p_0008_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Toledo Metroparks Alteration - Metroparks levee ties into Wards Canal levee.; Action: NA
	**Inspect ID:** OH29_2018_p_0009 **Title:** USACE_CELRB_OH29_2018_p_0009_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Toledo Metroparks Alteration - Pump station to be operated by Conservancy District per sub-agreement.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0013 **Title:** USACE_CELRB_OH29_2018_p_0013_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Encroachments on both slopes and crown along Lagoon Drive. Examples include: decks, docks, stairs, retaining walls, wooden and brick walkways, and a patio.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0013 **Title:** USACE_CELRB_OH29_2018_p_0013_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Encroachments on both slopes and crown along Lagoon Drive. Examples include: decks, docks, stairs, retaining walls, wooden and brick walkways, and a patio.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0014 **Title:** USACE_CELRB_OH29_2018_p_0014_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: 12763 Lagoon Drive levee repair of toe and slope deemed acceptable by USACE per FY17 RI Report.; Action: NA
	**Inspect ID:** OH29_2018_p_0024 **Title:** USACE_CELRB_OH29_2018_p_0024_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - satellite dish encroachment w conduit running through levee crown.; Action: Submit Section 408 Alteration Request to USACE or remove encroachment.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0025 **Title:** USACE_CELRB_OH29_2018_p_0025_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Unacceptable; Remarks: Unauthorized alteration - two house encroachments on landside slope of levee along Lagoon Drive East near Marais Drive. See photos 29-32, FY08 Inspection Report. ; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0033 **Title:** USACE_CELRB_OH29_2018_p_0033_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - encroachments on both slopes and crown along La Course Drive.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0033 **Title:** USACE_CELRB_OH29_2018_p_0033_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - encroachments on both slopes and crown along La Course Drive.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0034 **Title:** USACE_CELRB_OH29_2018_p_0034_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Unacceptable; Remarks: Minor unwanted vegetation in riprap on waterside slope.; Action: Remove unwanted vegetation within the vegetation free zone.

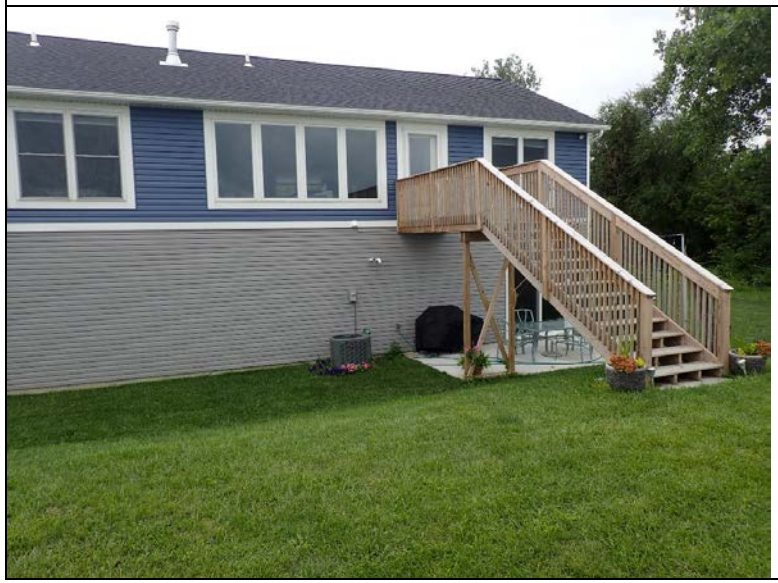
Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0047 **Title:** USACE_CELRB_OH29_2018_p_0047_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alerations - encroachments on levee waterside and crown along Dyke Road. Examples include: wooden decks, boat launchs, concrete pad, debris, flag pole, large light house, and concrete rubble.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0047 **Title:** USACE_CELRB_OH29_2018_p_0047_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alerations - encroachments on levee waterside and crown along Dyke Road. Examples include: wooden decks, boat launchs, concrete pad, debris, flag pole, large light house, and concrete rubble.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0052 **Title:** USACE_CELRB_OH29_2018_p_0052_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unathorized alteration - stairs encroaches on crown from new house on Dyke Street. House is beyond 15' from toe and not an encroachment.; Action: Submit Section 408 Alteration Request to USACE or remove encroachment.
	**Inspect ID:** OH29_2018_p_0052 **Title:** USACE_CELRB_OH29_2018_p_0052_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unathorized alteration - stairs encroaches on crown from new house on Dyke Street. House is beyond 15' from toe and not an encroachment.; Action: Submit Section 408 Alteration Request to USACE or remove encroachment.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0057 **Title:** USACE_CELRB_OH29_2018_p_0057_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - stairs encroachment on levee landside slop 900' east of Dyke Road.; Action: Submit Section 408 Alteration Request to USACE or remove encroachment.
	**Inspect ID:** OH29_2018_p_0058 **Title:** USACE_CELRB_OH29_2018_p_0058_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorzed alteration - deck and ramp on levee waterside and crown 900' east of Dyke Road.; Action: Submit Section 408 Alteration Request to USACE or remove encroachment.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0061 **Title:** USACE_CELRB_OH29_2018_p_0061_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Debris on riprap at east-most property on Dyke Road.; Action: Remove debris.
	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_3.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_4.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_5.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_6.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0063 **Title:** USACE_CELRB_OH29_2018_p_0063_7.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alterations - encroachments on levee landside slope and crown along Dyke Road. Examples include: metal platform, ramps, flag poles, stone, swimming pool, stairs, decks, landscaping, poles, ornaments, birdhouses, debris, and sheds.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0064 **Title:** USACE_CELRB_OH29_2018_p_0064_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - encroachments on levee waterside slope. Examples include: concrete pad, bench, decks, fills on riprap, walkways, poles, debris, boats, launch, shed, stairs, concete rubble, ornamental anchor, ramps, and porch.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0064 **Title:** USACE_CELRB_OH29_2018_p_0064_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - encroachments on levee waterside slope. Examples include: concrete pad, bench, decks, fills on riprap, walkways, poles, debris, boats, launch, shed, stairs, concete rubble, ornamental anchor, ramps, and porch.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0065 **Title:** USACE_CELRB_OH29_2018_p_0065_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Pre-project cottages along Lakeway Drive at end of Waterway Road; one remains, one removed (foundation remains).; Action: NA
	**Inspect ID:** OH29_2018_p_0065 **Title:** USACE_CELRB_OH29_2018_p_0065_2.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Pre-project cottages along Lakeway Drive at end of Waterway Road; one remains, one removed (foundation remains).; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0065 **Title:** USACE_CELRB_OH29_2018_p_0065_3.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Pre-project cottages along Lakeway Drive at end of Waterway Road; one remains, one removed (foundation remains).; Action: NA
	**Inspect ID:** OH29_2018_p_0065 **Title:** USACE_CELRB_OH29_2018_p_0065_4.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Acceptable; Remarks: Pre-project cottages along Lakeway Drive at end of Waterway Road; one remains, one removed (foundation remains).; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0096 **Title:** USACE_CELRB_OH29_2018_p_0096_1.jpg **Rated Item:** 3. Encroachments **Caption:** Rating: Minimally Acceptable; Remarks: Unauthorized alteration - multiple encroachments on levee landside slope at levee wrap around at Cooley Canal.; Action: Submit Section 408 Alteration Request to USACE or remove encroachments.
	**Inspect ID:** OH29_2018_p_0006 **Title:** USACE_CELRB_OH29_2018_p_0006_1.jpg **Rated Item:** 5. Slope Stability **Caption:** Rating: Acceptable; Remarks: Project limit at Wards Canal, levee ties into non-project segment.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0006 **Title:** USACE_CELRB_OH29_2018_p_0006_2.jpg **Rated Item:** 5. Slope Stability **Caption:** Rating: Acceptable; Remarks: Project limit at Wards Canal, levee ties into non-project segment.; Action: NA
	**Inspect ID:** OH29_2018_p_0020 **Title:** USACE_CELRB_OH29_2018_p_0020_1.jpg **Rated Item:** 7. Settlement **Caption:** Rating: Minimally Acceptable; Remarks: Crown settling into levee and sporadic holes near transition from stone levee to soil levee 750' west of Wards Canal along Lagoon Drive.; Action: Repair settlement and fill holes with suitable material using compaction methods according to original plans and specifications.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0036 **Title:** USACE_CELRB_OH29_2018_p_0036_1.jpg **Rated Item:** 7. Settlement **Caption:** Rating: Minimally Acceptable; Remarks: Minor 2" settlement ring with 5' radius around well standpipe encroachment on crown.; Action: Repair settlement.
	**Inspect ID:** OH29_2018_p_0048 **Title:** USACE_CELRB_OH29_2018_p_0048_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Rating: Minimally Acceptable; Remarks: Minor 6" depression on crown with 3'-4' circumference 650' west of Dyke Road Pump Station.; Action: Repair depression.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0072 **Title:** USACE_CELRB_OH29_2018_p_0072_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Rating: Minimally Acceptable; Remarks: Minor depression on crown 150' west of Park Colony Boulevarde.; Action: Fill depression.
	**Inspect ID:** OH29_2018_p_0081 **Title:** USACE_CELRB_OH29_2018_p_0081_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Rating: Minimally Acceptable; Remarks: Minor depression on crown 300' east of Riceland Road.; Action: Fill depression.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0086 **Title:** USACE_CELRB_OH29_2018_p_0086_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Rating: Minimally Acceptable; Remarks: Minor depression on levee crown across from Riceland Road.; Action: Fill depression.
	**Inspect ID:** OH29_2018_p_0090 **Title:** USACE_CELRB_OH29_2018_p_0090_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Rating: Minimally Acceptable; Remarks: Minor depression in levee crown 300' east of Cooley Canal.; Action: Repair depression.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0107 **Title:** USACE_CELRB_OH29_2018_p_0107_1.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Unacceptable; Remarks: Drainage ditch pump station discharge at intersection of Dyke Road and Corduroy penetrates through the levee system and has not been videotape inspected within last 5-years.; Action: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.
	**Inspect ID:** OH29_2018_p_0107 **Title:** USACE_CELRB_OH29_2018_p_0107_2.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Unacceptable; Remarks: Drainage ditch pump station discharge at intersection of Dyke Road and Corduroy penetrates through the levee system and has not been videotape inspected within last 5-years.; Action: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0107 **Title:** USACE_CELRB_OH29_2018_p_0107_3.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Unacceptable; Remarks: Drainage ditch pump station discharge at intersection of Dyke Road and Corduroy penetrates through the levee system and has not been videotape inspected within last 5-years.; Action: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.
	**Inspect ID:** OH29_2018_p_0108 **Title:** USACE_CELRB_OH29_2018_p_0108_1.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Unacceptable; Remarks: Drainage ditch pump station discharge to Cooley Canal penetrates through the levee system and has not been videotape inspected within last 5-years.; Action: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0108 **Title:** USACE_CELRB_OH29_2018_p_0108_2.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Unacceptable; Remarks: Drainage ditch pump station discharge to Cooley Canal penetrates through the levee system and has not been videotape inspected within last 5-years.; Action: Videotape inspect condition of discharge pipe and submit, with engineering evaluatioin and ratings, to USACE.
	**Inspect ID:** OH29_2018_p_0109 **Title:** USACE_CELRB_OH29_2018_p_0109_1.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Acceptable; Remarks: Toledo Metropark Alteration pump station discharge pipe to Wards Canal penetrates through the levee system. Therefore, it will require videotape inspection every 5-years.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0109 **Title:** USACE_CELRB_OH29_2018_p_0109_2.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Rating: Acceptable; Remarks: Toledo Metropark Alteration pump station discharge pipe to Wards Canal penetrates through the levee system. Therefore, it will require videotape inspection every 5-years.; Action: NA
	**Inspect ID:** OH29_2018_p_0044 **Title:** USACE_CELRB_OH29_2018_p_0044_1.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Unacceptable; Remarks: Missing 150' of underlayer and armor stone along top of waterside slope east of Corduroy.; Action: Replace missing stone.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0044 **Title:** USACE_CELRB_OH29_2018_p_0044_2.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Unacceptable; Remarks: Missing 150' of underlayer and armor stone along top of waterside slope east of Corduroy.; Action: Replace missing stone.
	**Inspect ID:** OH29_2018_p_0066 **Title:** USACE_CELRB_OH29_2018_p_0066_1.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Acceptable; Remarks: Stone revetment recharged and potentially raised to a higher elevation of protection round cottage on levee crown at Lakeway Drive, considered acceptable maintenance.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0066 **Title:** USACE_CELRB_OH29_2018_p_0066_2.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Acceptable; Remarks: Stone revetment recharged and potentially raised to a higher elevation of protection round cottage on levee crown at Lakeway Drive, considered acceptable maintenance.; Action: NA
	**Inspect ID:** OH29_2018_p_0070 **Title:** USACE_CELRB_OH29_2018_p_0070_1.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Minimally Acceptable; Remarks: Sporadic unwanted vegetation exists within riprap along Dyke Road. Examples include: small trees, shrubs, bushes.; Action: Remove unwanted vegetation.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0093 **Title:** USACE_CELRB_OH29_2018_p_0093_1.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Unacceptable; Remarks: Vegetation in on riprap at levee tie into Cooley Canal east jetty.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish levee prism with adequate sod cover. Perform regular mowing to prevent further unwanted vegetation development.
	**Inspect ID:** OH29_2018_p_0098 **Title:** USACE_CELRB_OH29_2018_p_0098_1.jpg **Rated Item:** 12. Riprap Revetments & Bank Protection **Caption:** Rating: Unacceptable; Remarks: Significant vegetation and trees in riprap on Cooley Canal levee.; Action: Remove unwanted vegetation within the vegetation free zone and reestablish adequate riprap. Perform regular maintenance to prevent further unwanted vegetation development.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0012 **Title:** USACE_CELRB_OH29_2018_p_0012_1.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Unacceptable; Remarks: SSP wall failure at Wards Canal levee waterside toe threatens dike integrity 300' upstream of canal entrance.; Action: Repair and stabilize SSP wall.
	**Inspect ID:** OH29_2018_p_0028 **Title:** USACE_CELRB_OH29_2018_p_0028_1.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Acceptable; Remarks: Retaining wall is stable on landside at west end of Lagoon Drive.; Action: NA

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0040 **Title:** USACE_CELRB_OH29_2018_p_0040_1.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Deteriorated concrete revetment on waterside of levee, shown on As-Built Sheet 9 of 28 on Drawing Number 86-RBP-1/9, is incorporated into the project. The failing concrete is starting to expose the toe of the waterside slope.; Action: Repair concrete revetment or replace with suitable material to protect levee.
	**Inspect ID:** OH29_2018_p_0040 **Title:** USACE_CELRB_OH29_2018_p_0040_2.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Deteriorated concrete revetment on waterside of levee, shown on As-Built Sheet 9 of 28 on Drawing Number 86-RBP-1/9, is incorporated into the project. The failing concrete is starting to expose the toe of the waterside slope.; Action: Repair concrete revetment or replace with suitable material to protect levee.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0040 **Title:** USACE_CELRB_OH29_2018_p_0040_3.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Deteriorated concrete revetment on waterside of levee, shown on As-Built Sheet 9 of 28 on Drawing Number 86-RBP-1/9, is incorporated into the project. The failing concrete is starting to expose the toe of the waterside slope.; Action: Repair concrete revetment or replace with suitable material to protect levee.
	**Inspect ID:** OH29_2018_p_0102 **Title:** USACE_CELRB_OH29_2018_p_0102_1.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Failing SSP wall bulkheading along Ward's Canal shoreline threatens dike integrity. There is a concrete gravity wall on the waterside slope with unwanted vegetation that appears to be showing signs of tilting.; Action: Repair and stabilize bulkheading.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0102 **Title:** USACE_CELRB_OH29_2018_p_0102_2.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Failing SSP wall bulkheading along Ward's Canal shoreline threatens dike integrity. There is a concrete gravity wall on the waterside slope with unwanted vegetation that appears to be showing signs of tilting.; Action: Repair and stabilize bulkheading.
	**Inspect ID:** OH29_2018_p_0102 **Title:** USACE_CELRB_OH29_2018_p_0102_3.jpg **Rated Item:** 13. Revetments other than Riprap **Caption:** Rating: Minimally Acceptable; Remarks: Failing SSP wall bulkheading along Ward's Canal shoreline threatens dike integrity. There is a concrete gravity wall on the waterside slope with unwanted vegetation that appears to be showing signs of tilting.; Action: Repair and stabilize bulkheading.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** OH29_2018_p_0019 **Title:** USACE_CELRB_OH29_2018_p_0019_1.jpg **Rated Item:** 15. Seepage **Caption:** Rating: Minimally Acceptable; Remarks: Residents and Conservancy District indicate seepage for group of residential homes along Lagoon Drive.; Action: Coordinate with USACE to mitigate seepage.
	**Inspect ID:** OH29_2018_p_0022 **Title:** USACE_CELRB_OH29_2018_p_0022_1.jpg **Rated Item:** 15. Seepage **Caption:** Rating: Minimally Acceptable; Remarks: Residents and Conservancy District indicate seepage between two residential homes along Lagoon Drive.; Action: Coordinate with USACE to mitigate seepage.

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Pump Stations Operating, Maintenance, Training, & Inspection Records	**NA**	**A**	Operation, maintenance and inspection records are present at the pump station and are being used and updated, and personnel have been trained in pump station operations. Names and last training date shown in the record book.	OH29_2018_p_0042: Station_1 63+54: Project Pump Station at east end of Dyke Road. Records of operation are tracked hourly. 150-200 million gallons per year. Pump Station exercised during inspection.: NA (A)
		M	Operation, maintenance and inspection records are present but not adequately used and updated.	
		U	No operation, maintenance and inspection records are present, or refresher training for personnel has not been conducted.	
2. Pump Station Operations and Maintenance Equipment Manuals	**NA**	**A**	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent pump station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent pump station features. However, they are incomplete and the necessary updates have not been made.	
		U	Operation and Maintenance Equipment Manuals are not available.	
3. Safety Compliance	**NA**	**A**	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	**NA**	**A**	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	**NA**	**A**	The building is in good structural condition with no major foundation settlement problems. The roof is not leaking, intake & exhaust louvers are clear of debris, fans are operational, etc.	
		M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
		U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates[1]	**NA**	**A**	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
		M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
		U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		N/A	There are no features noted that require safety fencing.	
7. Pumps[1]	**NA**	**A**	All pumps are properly maintained and lubricated. Systems are periodically tested and documented for review. No vibration, cavitation noises or unusual sounds are noted when the pump is operated. Bearing temperature sensor records don't indicate any problems.	OH29_2018_p_0101: Station_1 154+44: Cooley Canal Pump Station in adequate condition.: NA (A)
		M	Minor deficiencies noted that need to be closely monitored or repaired, such as the presence of slight vibrations, leakage of packing gland, bearing temperature sensors are inoperable or no record is present. However, the pumps are operational and are expected to perform through the next period of usage.	
		U	Major deficiencies identified that may significantly reduce pumping operations. For example, bearing sensor records indicate problems, excessive vibration noted, impellers are badly corroded, or there are eroded or missing blades.	
8. Motors, Engines, Fans, Gear Reducers, Back Stop Devices, etc.	**NA**	**A**	All items are operational. Preventative maintenance and lubrication is being performed and the system is periodically subjected to performance testing. Instrumentation, alarms, bearing sensors and auto shutdowns are operational.	
		M	Systems have minor deficiencies, but are operational and will function adequately through the next flood. Bearing sensors are not operational.	
		U	One or more of the primary motors or systems is not operational, or noted deficiencies have not been corrected.	
9. Sumps / Wet well	**NA**	**A**	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	
		M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
		U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes[1]	**NA**	**A**	Drive chain, bearing, gear reducers, and other components are in good operating condition and are being properly maintained.	
		M	The trash rake is in need of maintenance, but is still operational.	
		U	Trash rake not operational or deficiencies will inhibit operations during the next flood event.	
		N/A	There are no mechanical trash rakes.	
11. Non-Mechanical Trash Racks	**NA**	**A**	Trash racks are fastened in place and properly maintained.	
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station, bars are corroded to the point that up to 10% of the sectional area may be lost. Repair or replacement is required.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Trash racks are missing or damaged to the extent that they are no longer functional and must be replaced. (For example, more than 10% of the sectional area may be lost.)	
		N/A	There are no trash racks, or they are covered in the pump stations section of the report.	
12. Fuel System for Pump Engines	**NA**	**A**	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	
		M	Fuel system is operational and of adequate capacity, but day tank is missing or fuel is not fresh and rotated regularly.	
		U	Fuel system not functional.	
		N/A	No fuel system.	
13. Power Source	**NA**	**A**	The normal power source and backup generators, if installed, are operational, properly exercised and well maintained. Surge protection, grounding, lightning protection, transformers, and automatic/manual transfer of main power to backup system is working.	
		M	Normal power source and backup units, if applicable, are operational with minor discrepancies or maintenance, inspection and exercising record is present but not up to date. Preventative maintenance or repairs are required.	
		U	Normal power source or generators are not operational and must be repaired; or generator, if required, is not on site.	
14. Electrical Systems[2]	**NA**	**A**	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	
		M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
		U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	**NA**	**A**	Results of megger tests on pump motors or critical power cables show that the insulation meets manufacturer's or industry standards. Tested within the last year.	
		M	Megger testing not conducted within the past year. If megger tests on pump motors indicate that insulation resistance is below the manufacturer's or industry standard, but the resistance can be corrected with proper application of heat, this is minimally acceptable. (The application of heat does not relate to critical power cables.)	
		U	Megger tests not conducted within past two years, or tests indicate that insulation resistance is low enough that the equipment will not be able to meet design standards of operation; or evidence of arcing or shorting is detected visually.	

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Pump Stations

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
16. Enclosures, Panels, Conduit and Ducts	NA	A	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
		M	Minor surface corrosion which appears to be maintainable. Cleaning and painting required.	
		U	Severely corroded and must be replaced to prevent failure, equipment damage, or safety issues.	
17. Intake and Discharge Pipelines	NA	A	Intake and discharge pipelines have no corrosion and paint is intact, except for minor touch up required. Pipe couplings and anchors have no leakage or corrosion.	OH29_2018_p_0043: Station_1 63+15: Discharge pipe for pump station completely shoaled in. Sponsor digs out sand with shovel. Typically clears out during operation but could be serious issue. Headwall appears to be installed backwards. 2 pumps: big and small. 24" outfall pipe.: NA (A) OH29_2018_p_0099: Station_1 154+44: Cooley Canal Pump Station Outfall in acceptable condition.: Perform videotape inspection. (A) OH29_2018_p_0100: Station_1 154+44: Cooley Canal Pump Station intake in acceptable condition.: NA (A)
		M	Intake and discharge pipelines have minor corrosion and repair and painting is required. Pipe coupling with anchors have minor leakage, corrosion and require bolts to be tightened.	
		U	Intake and discharge pipelines have major corrosion and replacement is required. Pipe coupling with anchors have major leakage and is heavily corroded and requires replacement.	
18. Sluice/ Slide Gates[3]	NA	A	Gates open and close freely to a tight seal or minor leakage. Gate operators are in good working condition and are properly maintained. Sill is free of sediment and other obstructions. Gates and lifters have been maintained and are free of corrosion. Documentation provided during the inspection.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves[1]	NA	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no gates on discharge lines from pump station.	

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Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
20. Cranes[1]	NA	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
		M	Cranes have not been inspected or operationally tested within the past year, or there are visible signs of corrosion, oil leakage, etc, requiring maintenance.	
		U	Cranes are not operational, and this may prevent the pump station from functioning as required. No documentation available on cranes.	
		N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	NA	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
		M	Corrosion seen on metallic parts appears to be maintainable.	
		U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
		N/A	There are no other significant metallic items.	

[1] Proper operation of this item must be demonstrated during the inspection.
[2] Check motor control center, circuit breakers, pilot lights, volt meters, ammeters, sump level indicator, gate position indicators, remote operating systems, including SCADA and telemetry systems. Also, check interior and exterior lighting; especially lighting near trash rack screens, ladders, walkways, etc.
[3] Proper operation of the gates (full open and closed) must be demonstrated during the inspection if no documentation is available. Be aware of both manual and electrical operators.

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Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0042 **Title:** USACE_CELRB_OH29_2018_p_0042_1.jpg **Rated Item:** 1. Pump Stations Operating, Maintenance, Training, & Inspection Records **Caption:** Rating: Acceptable; Remarks: Project Pump Station at east end of Dyke Road. Records of operation are tracked hourly. 150-200 million gallons per year. Pump Station exercised during inspection. ; Action: NA
	**Inspect ID:** OH29_2018_p_0101 **Title:** USACE_CELRB_OH29_2018_p_0101_1.jpg **Rated Item:** 7. Pumps **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station in adequate condition.; Action: NA

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0101 **Title:** USACE_CELRB_OH29_2018_p_0101_2.jpg **Rated Item:** 7. Pumps **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station in adequate condition.; Action: NA
	**Inspect ID:** OH29_2018_p_0101 **Title:** USACE_CELRB_OH29_2018_p_0101_3.jpg **Rated Item:** 7. Pumps **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station in adequate condition.; Action: NA

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0101 **Title:** USACE_CELRB_OH29_2018_p_0101_4.jpg **Rated Item:** 7. Pumps **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station in adequate condition.; Action: NA
	**Inspect ID:** OH29_2018_p_0101 **Title:** USACE_CELRB_OH29_2018_p_0101_5.jpg **Rated Item:** 7. Pumps **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station in adequate condition.; Action: NA

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0043 **Title:** USACE_CELRB_OH29_2018_p_0043_1.jpg **Rated Item:** 17. Intake and Discharge Pipelines **Caption:** Rating: Acceptable; Remarks: Discharge pipe for pump station completely shoaled in. Sponsor digs out sand with shovel. Typically clears out during operation but could be serious issue. Headwall appears to be installed backwards. 2 pumps: big and small. 24" outfall pipe. ; Action: NA
	**Inspect ID:** OH29_2018_p_0043 **Title:** USACE_CELRB_OH29_2018_p_0043_2.jpg **Rated Item:** 17. Intake and Discharge Pipelines **Caption:** Rating: Acceptable; Remarks: Discharge pipe for pump station completely shoaled in. Sponsor digs out sand with shovel. Typically clears out during operation but could be serious issue. Headwall appears to be installed backwards. 2 pumps: big and small. 24" outfall pipe. ; Action: NA

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0099 **Title:** USACE_CELRB_OH29_2018_p_0099_1.jpg **Rated Item:** 17. Intake and Discharge Pipelines **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station Outfall in acceptable condition.; Action: Perform videotape inspection.
	**Inspect ID:** OH29_2018_p_0099 **Title:** USACE_CELRB_OH29_2018_p_0099_2.jpg **Rated Item:** 17. Intake and Discharge Pipelines **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station Outfall in acceptable condition.; Action: Perform videotape inspection.

Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	**Inspect ID:** OH29_2018_p_0100 **Title:** USACE_CELRB_OH29_2018_p_0100_1.jpg **Rated Item:** 17. Intake and Discharge Pipelines **Caption:** Rating: Acceptable; Remarks: Cooley Canal Pump Station intake in acceptable condition.; Action: NA

Attachment I

Levee System Summary

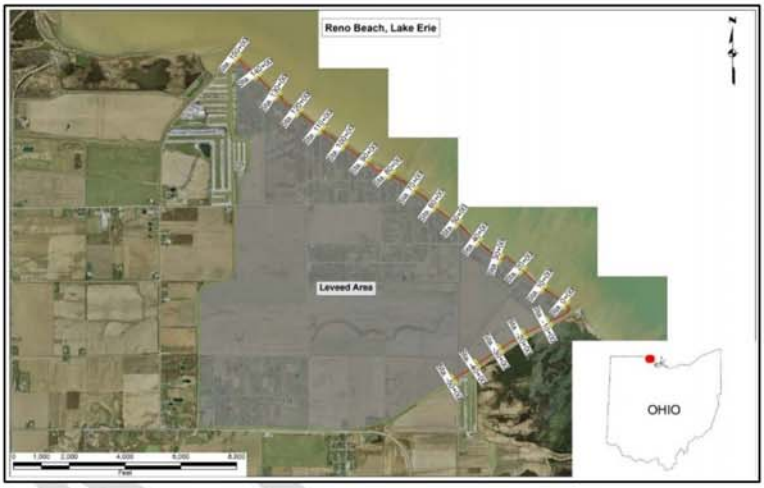
SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

Levee System Summary
Lake Erie – Reno Beach
Ohio

U.S. Army Corps of Engineers **Building Strong**

October 29, 2018

Why Communicate Risk?
Levees provide flood risk management for communities, however, they do not completely eliminate flood risk. Communicating risk increases community awareness while allowing citizens and businesses to be prepared. The risk for each levee system is unique and is based on the system's hazards, performance, and consequences of failure or overtopping during a flood.



Project Description: This levee system was completed in 1992 to manage flood risk from Lake Erie. It includes 15,700 feet of earthen and rubblemound stone levee along Lake Erie, 3,750 feet of partially riprapped earthen tieback levee along the west bank of Wards Canal, and 277 feet of riprapped embankment along the east side of Cooley Canal. The Lake Erie – Reno Beach levee system was constructed by the United States Army Corps of Engineers in agreement with the Reno Beach/Howard Farms Conservancy District as the Local Sponsor. Once completed, it was turned-over to the Conservancy District for operations and maintenance (O&M) contingent on the requirements of an agreed-upon O&M Manual. The levee system is located along the shoreline of Lake Erie and includes a rehabilitated Operation Foresight dike constructed in the 1970s. The shaded area in the graphic shows flooding that could occur due to levee failure or overtopping during a flood. This shaded area is referred to as the leveed area. The Reno Beach/Howard Farms Conservancy District also operates and maintains interior drainage ditches and 3 pump stations within the levee area.

Levee Data:
Total Levee Length = 3.93 miles
Average Levee Height = 9 feet
Leveed Area = 2,204 acres
People at Risk = 1,018
Structures at Risk = 459
Property Value = $171,000,000

Performance: Since construction, the levee system has been moderately tested by water levels rising more than 2 feet (25%) up the levee once and more than 4 feet (50%) up the levee once. According to the National Oceanic and Atmospheric Administrator's (NOAA's) Nation Data Buoy Center, the nearest lake level data source is Station THRO1 – 9063085 – Toledo, OH. This station indicated that the highest lake levels on record were associated to high-water in June 1997. The levee system has prevented an estimated $33,906,600 of flood damages since completion.

Risk Characterization: Based on the condition of the system at the time of this publication, this levee system has a relatively low risk and is expected to perform as designed. However, there is some uncertainty: the levee has not been fully (100%) loaded, the levee has significant unwanted vegetation, the levee is significantly obstructed by encroachments, and the levee system does not have an acceptable Emergency Action Plan that details the procedures necessary for effective response to a flood event. The storm events have short durations, temporary high-water levels have low head pressure on the levee, and breaching impacts are localized. Water could overtop the levee during a greater than 500-year event (less than 0.2% chance of occurring in any given year). If flooding occurred within the leveed area, there would be moderate risk to life safety. Residents are therefore encouraged to pay attention to local media reports and follow flood warnings or evacuation orders during times of high water.

U.S. ARMY CORPS OF ENGINEERS – BUFFALO DISTRICT
1776 Niagara Street, Buffalo, New York 14207-3199
www.lrb.usace.army.mil

SUBJECT: FY18 Periodic Inspection, Flood Risk Management Project, Reno Beach-Howard Farms, Lucas County, Ohio (08/22/18)

What is driving the risk?	What is being done about it?
• Unauthorized encroachments, alterations, and unwanted vegetation on or adjacent to the levee could impede flood fighting, prevent adequate operation and maintenance activities, and create seepage paths. • Without pipe video inspections beneath the levee embankment, the pipe conditions are unknown and their integrity is at risk. • Levee system does not have an acceptable Emergency Action Plan.	• Reno Beach / Howard Farms Conservancy District is working to address and mitigate the identified risk drivers. • Reno Beach / Howard Farms Conservancy District is continuously maintaining the levee system.

Latest Inspection and Rating:	August 2018 (Periodic Inspection) Rating = Unacceptable "U" The system was rated "U" specifically due to the lack of pipe video inspection, numerous unauthorized encroachments, vegetation/trees on the levee embankment, and the inability to properly inspect the levee embankment. A brief Periodic Inspection Executive Summary (from 2018 Periodic Inspection) is available on the USACE National Levee Database (NLD) at the link provided below.
Rehabilitation Program Eligibility Status:	The system is Inactive in the Rehabilitation Program (RP) due to the lack of pipe video inspections and existing encroachments that could impede routine inspections, emergency inspections, and flood fighting efforts during a serious flood event. Projects that are inactive in the RP are ineligible for federal assistance under Public Law 84-99 if damaged by a flood or storm event. Active project are eligible for federal assistance.
National Flood Insurance Program (NFIP) Status:	NFIP flood hazard mapping products, including Flood Insurance Rate Maps, are available at the FEMA Flood Map Service Center website: https://msc.fema.gov/.

Who Can I Contact? Information concerning this levee system may be obtained by contacting the following entities:

Levee Local Sponsor	Reno Beach/Howard Farms Conservancy District: 1-419-836-2225
Local Emergency Management Agency	Lucas County, Emergency Management Agency: 1-419-213-6503
State Emergency Management Agency	Ohio Emergency Management Agency: 1-614-889-7150
Federal Emergency Management Agency (FEMA) National Flood Insurance Program	For general questions about the NFIP, contact the FEMA Map Information eXchange (FMIX): 1-877-336-2627 (toll-free), or email at: FEMAMapSpecialist@riskmapcds.com. For questions about FEMA flood hazard mapping for this levee system, contact FEMA Region V: 1-312-408-5501
United States Army Corps of Engineers (USACE)	USACE – Buffalo District Public Affairs Office: 1-800-833-6390 (Option 3) public.affairs@lrb01.usace.army.mil
National Levee Database (NLD)	https://levees.sec.usace.army.mil/#/

LIVING WITH LEVEES IS A SHARED RESPONSIBILITY
Know your risk, know your role, and take action!

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