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

REPLY TO
ATTENTION OF

Operations and Technical Support Section 25 February 2008

SUBJECT: FY07 Joint Routine Inspection of Completed Works, Flood Damage Reduction Project, Owasco Outlet, Auburn, New York (9/12/07)

Kevin D. Delaney, P.E.
New York State Department of Environmental Conservation Region 7
615 Erie Blvd. West
Syracuse, NY 13204-2400

Dear Mr. Delaney:

Transmitted herewith is the FY07 Inspection of Completed Works (ICW) inspection report for the Flood Damage Reduction Project at Owasco Outlet, Auburn, New York. I would like to thank you for your participation in this inspection. The rating for this project as determined by the current inspection is **"ACCEPTABLE" (A)**. Please refer to the enclosed inspection report, which includes an inspection checklist (Attachment "B"), for a description of project deficiencies requiring corrective action, if any.

Inspection checklist items rated "ACCEPTABLE" (A) have no deficiencies or, may have one or more concerns which could lead to potential minor deficiencies. These concerns are indicated in the report as "POTENTIAL DEFICIENCIES". Corrective action of potential deficiencies is not mandatory; however, failure to address them promptly may lead to designation of these items as deficient during the next inspection.

Inspection checklist items rated "MINIMALLY ACCEPTABLE" (M) have one or more minor deficiencies. These are indicated in the report as "MINOR DEFICIENCIES". Corrective action is required by the indicated date(s). Failure to perform corrective action for these deficiencies by the specified dates will result in an automatic downgrade of that particular inspection checklist item(s) to UNACCEPTABLE ("U") during the first inspection following the correction date, possibly resulting in a downgrade of the overall project rating.

Inspection checklist items rated "UNACCEPTABLE" (U) have deficiencies considered to be serious and will require corrective action. These are indicated in the report as "SERIOUS DEFICIENCIES". Corrective action should be initiated as soon as possible. An individual checklist item rated as "UNACCEPTABLE" (U) will likely, but not necessarily, result in an overall project rating of "UNACCEPTABLE" (U).

Projects receiving "ACCEPTABLE" (A) and "MINIMALLY ACCEPTABLE" (M) ratings will remain active in the Corps of Engineers Rehabilitation and Inspection Program (RIP) and will continue to be eligible for Federal funding to repair the project in the event of damage by a storm event. Projects receiving an "UNACCEPTABLE" (U) rating will be designated as

inactive in the Corps of Engineers RIP and will not be eligible for Federal funding to rehabilitate the project in the event of damage by a storm event. Effective date for unsatisfactory projects to be considered inactive will be date of receipt by the local sponsor of the inspection report. For these projects to become active again all serious deficiencies must be satisfactorily addressed and, the project re-inspected by the Corps with at least a minimally acceptable rating.

For projects rated “ACCEPTABLE” (A), a copy of the report will be forwarded to the local sponsor and county emergency management agency. For projects rated “MINIMALLY ACCEPTABLE” (M), a copy of the report will be forwarded to the local sponsor, county emergency management agency, state emergency management agency, and the local FEMA region. For projects rated “UNACCEPTABLE” U, a copy of the report will be forwarded to the local sponsor, county emergency management agency, state emergency management agency, local FEMA region and the local Congressional delegation.

The inspection checklist (Attachment "B") includes a two page section labeled "Public Sponsor Pre-Inspection Report". The local sponsor should complete this section just prior to the next scheduled inspection and provide to Corps inspector upon his arrival. The "Reporting Period is the timeframe between inspections (i.e. inspection date of this report and date of next scheduled inspection).

Please keep this office informed if there are any changes to the project that would affect the design level of protection afforded by the project, or if there are any other changes which may alter or impact any project features. Such changes require prior written approval from the Corps of Engineers and NYSDEC.

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,

Robert W. Remmers, P.E.
Chief, Operations and Technical Support Section

Enclosure:
Project Inspection Report w/Checklist

CF:
Michael Stankiewicz
NYSDEC, Division of Water, Flood Control Project Unit
625 Broadway, 4th Floor
Albany, NY 12233

CF (cont'd):

Brian Dahl, Director
Cayuga County Office of Emergency Management
County Office Building
160 Genesee Street
Cayuga, NY 13021

Subject: FY07 Joint Routine Inspection of Completed Works, Flood Damage Reduction Project, Owasco Outlet, Auburn, New York (9/12/07)

1. **OBJECTIVE**: The objective of this inspection is to assess the current condition of the project and to ensure that the local sponsor is fulfilling operations and maintenance requirements as specified in the project Operations and Maintenance (O&M) manual.

2. **PROJECT CLASSIFICATION:** Flood Damage Reduction - Flood Protection

3. **REPORTING PERIOD:** 5/9/06 – 9/12/07

4. **INSPECTION TEAM**: The inspection team met at the project site on 9/12/07. The following representatives from the New York State Department of Environmental Conservation (NYSDEC), City of Auburn, and U.S. Army Corps of Engineers (USACE - Buffalo District), participated in the inspection.

Name	Organization	Phone
Robert Remmers	USACE - Buffalo District	(716) 879-4277
David Swiatek	USACE - Buffalo District	(716) 879-4371
Mike Stankiewicz	NYSDEC Albany	(518) 402-8127
Kevin Delaney	NYSDEC Region 7	(315) 426-7501
Larry Lepak	NYSDEC Region 7	(607) 775-2545
Richard Wojcik	NYSDEC Region 7	(607) 775-2545
Dan Fuller	NYSDEC Region 7	(607) 775-2545
Gary Woolschlager	NYSDEC Region 7	(315) 635-6801
Anthony DeCaro	Chief, Foreman, City of Auburn	(315) 253-8254
Brian Polcoviex	Dam Operator	(315) 253-3121

5. **OVERALL PROJECT RATING:** In accordance with Headquarters, USACE guidance, this project is rated "**Acceptable" (A)**. No reportable deficiencies were identified during this inspection.

   Prior to this evaluation, the project was last inspected on 5/9/06. The condition of the project at the time of that inspection was rated as "Excellent" (C-1), which roughly compares to "Acceptable" (A) under the current rating system.

5. **PROJECT LOCATION, DESCRIPTION, AND LOCAL SPONSOR:**

   a. **Project Location:** The project is located on Owasco Outlet within the towns of Fleming and Owasco, and the City of Auburn, New York. The project is 1.8 miles in length and extends from the outer end of the confined channel (between piers extending into Owasco Lake), downstream to the first dam, called the State Dam.

   b. **Project Description:** The project consists of channel enlargement, protection of bridges, and minor bank protection. The channel was deepened throughout to a uniform bottom grade, and widened to a minimum width of 30 feet except through the bridge openings and transitions thereto. The project was designed so that, with the improved channel and proper operation of the State Dam, damaging floods will occur less than once in 100

years downstream of the dam and, once in 20 years on Owasco Lake (with 85% of average annual damages being eliminated). Between the lake and the dam (project area), flooding has not been a problem.

c. **Local Sponsor:** In accordance with the project O&M manual, NYSDEC Region 7 has assumed responsibility for the operation and maintenance of the project.

6. **INSPECTION FINDINGS:** Deficiencies found during this inspection are noted below. Deficiency categories are described in the report transmittal letter. Refer to Attachment "A" for project inspection photographs, Attachment "B" for project inspection ratings of individual inspection items, Attachment "C" for a project map, and Attachment "D" for Emergency Response Plan guidelines.

a. **Potential Deficiencies**:

(1) Minor debris in trash rack at State Dam (see photo 11).

(2) There are several small holes in the chain link fence at the State Dam (see photo 9).

b. **Minor Deficiencies**: None

c. **Serious Deficiencies**: None

7. **SUMMARY OF MAINTENANCE REQUIRED BY LAST INSPECTION REPORT:**

(1) Reference was made to trees on private property that had fallen into the channel approximately 400 years from the State Dam. During the FY07 inspection it was determined that these fallen trees do not occur within the project limits or otherwise impair the project. As such, no action is mandated by USACE – Buffalo District. See photo 7.

(2) Reference was made to streambank erosion concerns near an outlet structure adjacent to public school property. During the FY07 inspection it was determined that this minor erosion area is not within the limits of the project and has no impact on the project. As such, no maintenance action is required by USACE – Buffalo District. See photo 5.

8. **SUMMARY OF MAINTENANCE PERFORMED AFTER LAST INSPECTION:**

(1) Clearing and snagging maintenance in channel and, removal of debris at State Dam has been undertaken in accordance with the requirements of the project O&M manual.

9. **SUMMARY OF CHANGES TO PROJECT SINCE LAST INSEPECTION:** None.

10. **PROBLEMS/ISSUES REQUIRING ASSISTANCE OF USACE**: None.

11. **ADDITIONAL OBSERVATIONS:**

(1) Overall, the project's main features (channelway, bridge protection, and maintenance of State Dam) are in satisfactory condition. The channel and State Dam are clear of shoaling

and obstructions, and the bridges have adequate riprap protection. The State Dam gates are in good working order. See photos 1-4, 6, and 8-12.

(2) Mr. DeCaro requested a copy of the project O&M manual from NYSDEC.

12. RECOMMENDATIONS AND MAINTENANCE REQUIRED AS A RESULT OF THIS INSPECTION:

(1) The project sponsor needs to have a written system-specific flood Emergency Response Plan to document that they have a solid understanding of how to operate, maintain, and staff the Flood Damage Reduction project during a flood. General guidance for preparing this document is presented in Attachment "D. The project sponsor must physically produce a copy of the project Operations and Maintenance manual and the written Emergency Response Plan for Corps review during all future project inspections beginning in 2008. Failure to provide these required documents will result in a **"Minimally Acceptable" (M)** rating for these specific items and an overall project rating that will also be no better than **"Minimally Acceptable" (M)**.

(2) Continue to monitor the channelway for obstructions and, the bridge abutments for signs of erosion and riprap deterioration.

(3) Continue to ensure that the dam gates are in good working order and, debris is cleared from gates and trash rack. Make repairs to damaged chain link fence to enhance security/safety at dam facility.

(3) NYSDEC should provide Mr. DeCaro with a copy of the project O&M manual as requested during the inspection.

13. INSPECTION REPORT PREPARED BY:

_____

David M. Swiatek, E.I.T.
Civil Engineer

14. INSPECTION REPORT REVIEWED BY:

_____

Robert W. Remmers, P.E.
Chief, Operations and Technical Support Section

15. LIST OF ATTACHMENTS:

A. Project Inspection Photographs
B. Project Inspection Checklist
C. Project Map
D. Emergency Response Plan Guidelines

Subject: FY07 Joint Routine Inspection of Completed Works, Flood Damage Reduction Project, Owasco Outlet, Auburn, New York (9/12/07)

Attachment "A" - Project Inspection Photographs

Photo 1: Owasco Outlet near Owasco Lake.

Photo 2: Owasco Outlet upstream of Island Park bridge.

Photo 3: Upstream side of Island Park bridge over Owasco Outlet.

Photo 4: Riprap at White Bridge Road bridge.

Photo 5: Outfall and gabion baskets on left bank at school (not part of project).

Photo 6: Owasco Outlet near downstream end of project.

Photo 7: Downed trees, right bank of Owasco Outlet, near downstream limit of project (does not impact project).

Photo 8: State Dam at downstream end of project.

Photo 9: Top of State Dam – note holes in fence.

Photo 10: Control gates at State Dam.

Photo 11: Minor debris in trash rack of State Dam.

Photo 12: Downstream of State Dam.

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Attachment "B"
Flood Damage Reduction Systems
Inspection Report

Name of System: Flood Damage Reduction Project, Owasco Outlet, Auburn, New York

Public Sponsor(s): NYSDEC Region 7

Public Sponsor Representative: Kevin D. Delaney

Sponsor Phone: (315) 426-7501

Sponsor Email: kddelane@gw.dec.state.ny.us

Corps of Engineers Inspector: Robert Remmers, David Swiatek Date of Inspection: 9/12/07

Inspection Report Prepared By: David Swiatek Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By: N/A Date of ITR: N/A

Final Approval By: N/A Date Approved: N/A

Type of Inspection:

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

Overall System Rating:

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

Contents of this Report:

- ☒ **Instructions**
- ☒ **Public Sponsor Pre-Inspection Report**
- ☒ **General Items**
- ☐ **Levee Embankments**
- ☐ **Floodwalls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☒ **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.

Instructions - Inspection of Flood Damage Reduction 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 Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

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 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 system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the 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.

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Flood Damage Reduction Systems
Public Sponsor Pre-Inspection Report

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

1. Project name and local sponsor:
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 system since last inspection:
7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Public Sponsor Pre-Inspection Report

8. Sign-in sheet for inspection attendees				
Name	Position	Mailing Address	Phone Number	Email Address

General Items - Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Refer to Section 13.(1), FY07 Inspection Report
		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)	**A**	**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.	
		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)	*****	**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.	*Refer to Sectin 13.(1), FY07 Inspection Report
		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

Channels - Flood Damage Reduction Systems

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**A**	**A**	No trash, debris, unauthorized 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 channel.	
		M	Trash, debris, unauthorized 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 channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Channels - Flood Damage Reduction Systems

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Channels - Flood Damage Reduction Systems

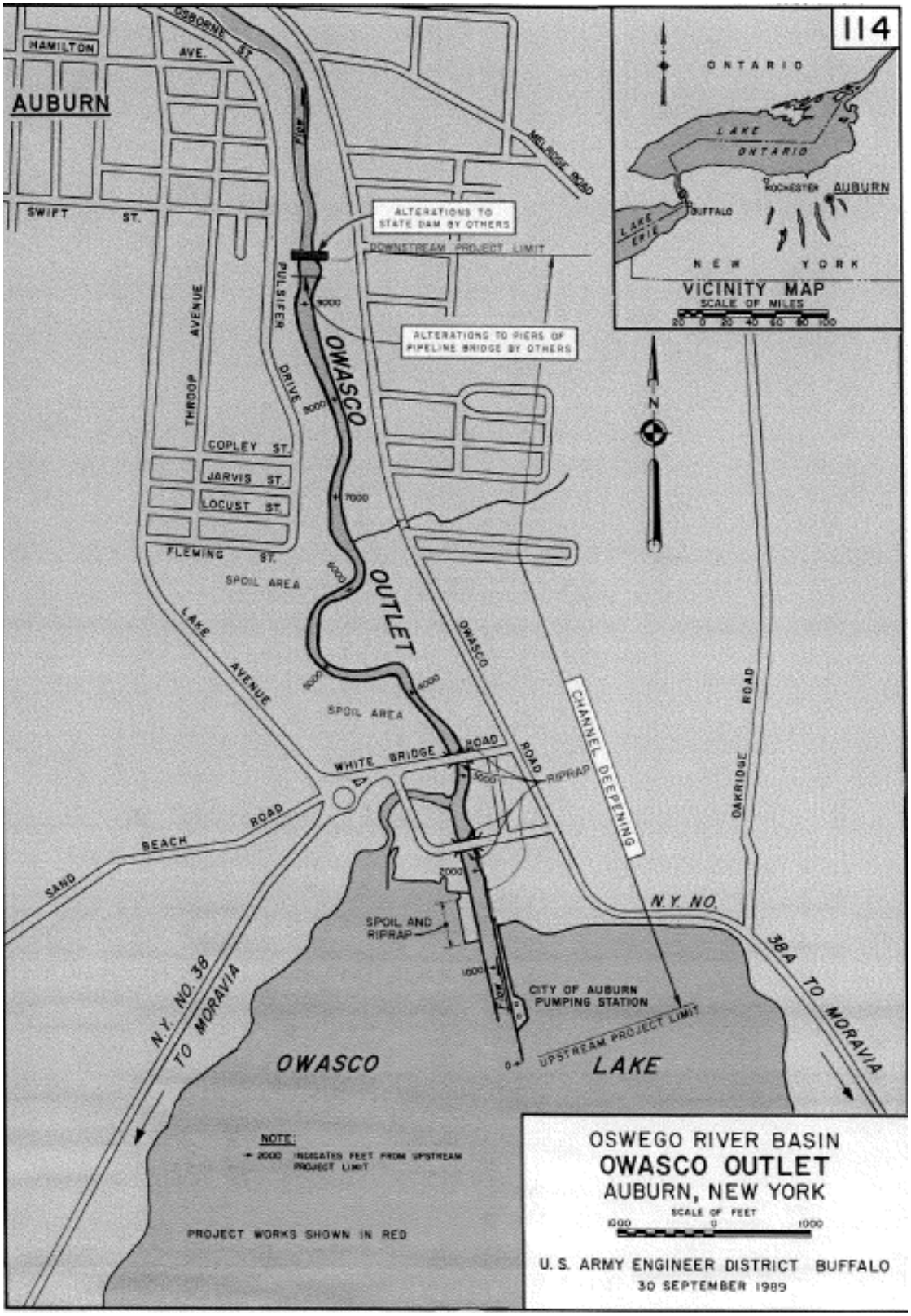
For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	**N/A**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	**N/A**	**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 flap gates.	
10. Riprap Revetments & Banks	**A**	**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.	
		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 system, or riprap is discussed in another section.	
11 Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		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 system.	

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

[1] Proper operation of this item must be demonstrated during the inspection.

Attachment "C" – Project Map



Attachment "D" - Emergency Response Plan Guidelines

The local sponsor must develop and maintain a written system specific response plan for emergency preparedness and have a solid understanding of how to operate, maintain, and staff the project during an emergency flooding event. These plans should addresses, at minimum, the following key elements:

1. Organizational Chart/Roster: A chain of command that indicates who will be contacted during a flood emergency.

2. List of Important Project Features: A bullet point list or annotated map that identifies: potentially critical weak points; locations of important structures such as gates, drains, closures; alternate access points, should areas become impassible; available sources of emergency supplies.

3. Flood Plan Response: The written plan does not need to be long or wordy, but should indicate what needs to be done during a flood fight and when. The plan should identify the hierarchy of responsibility, procedures, and equipment. Evacuation plans should be included in the flood plan response.

4. Short Term Planning Elements: Provisions to address temporary situations. For example, what to do in case of flooding during short term construction or replacement of critical elements.

5. Continued Plan Management: Plan should be reviewed annually and amended or revised as necessary; updates to critical information and contacts should be included.

Refer to pages 35 through 52 of Levee Owner's Manual for Non-Federal Flood Control Works, for additional specific information. This document is available for download via the following link:

http://www.usace.army.mil/cw/cecwhs/em/fcw/lom/pdf_files/Levee%20Owner%27s%20Manual.pdf