DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
PO BOX 2946
PORTLAND OR 97208-2946

REPLY TO
ATTENTION OF

19 MAR 2012

Engineering and Construction Division

Mr. Tim Couch, Manager
Sauvie Island Drainage Improvement Co.
29264 NW. Sauvie Island Rd.
Portland, OR 97231

Dear Mr. Couch:

A routine inspection of the Sauvie Island Flood Damage Reduction System (Sauvie Island FDR System) was conducted September 27 and 28, and October 5, 2011. A copy of the inspection report is enclosed for your information.

Based on the findings of our inspection, Sauvie Island FDR System has received a "MINIMALLY ACCEPTABLE" maintenance rating. A maintenance rating of "ACCEPTABLE" or "MINIMALLY ACCEPTABLE" is required for eligibility in the Public Law 84-99 levee Rehabilitation and Inspection Program (RIP). Because your levee has received a minimally acceptable rating, the structure is eligible for Federal repair assistance if damaged by flooding and other program requirements are met. However, damages due to existing deficiencies are not eligible for Federal assistance.

The findings from this inspection should be used to supplement those from Chapter 5.1 of the 2010 PI. Deficiencies related to your O&M obligations are detailed in the REMARKS section of both the 2011 inspection checklist and the inspection checklist in Appendix C of the 2010 periodic inspection report. The Animal Control rating item was re-evaluated and changed from "Unacceptable" to "Minimally Acceptable". The drainage improvement company needs to adopt a Levee Embankment O&M manual and needs to update its Emergency Response Plan. A document entitled, "LEVEE OWNER'S MANUAL FOR NON-FEDERAL FLOOD CONTROL WORKS" is available on-line at https://eportal.usace.army.mil/sites/ENGLink/FCCE/Shared%20Documents/LeveeOwnersManual.pdf and can serve as your Levee Embankment O&M manual.

Listed below are system components with one or more deficiencies that received an "UNACCEPTABLE" rating and require immediate correction. Although these deficiencies are serious, the levee system should perform as intended in the next flood event. Maintenance deficiencies must be corrected for continued RIP eligibility. It is recommended that you develop a detailed corrective action plan for accomplishing required maintenance.

Feature	**Rated Item**
Levee Embankments	Unwanted vegetation growth
Levee Embankments	Encroachments
Levee Embankments	Depressions/rutting
Levee Embankments	Culverts/discharge pipes
Levee Embankments	Underseepage Relief Wells/Toe Drainage Systems
Pump Stations	Megger Tests

This inspection rating represents the U.S. Army Corps of Engineers' (USACE) 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" USACE inspection rating alone does not equate to a certifiable levee for the NFIP. For levee systems that are accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes and receive a USACE "MINIMALLY ACCEPTABLE" or "UNACCEPTABLE" rating, it is recommended that the system be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Current contact information for the U.S. Army Corps of Engineers, Portland District is as follows:

	Emergency Operations Center	Preparedness	Technical Assistance
	E.O.C. Operations Division	Les Miller, P.E. Readiness Branch	Guy Fielding, P.E. Engineering & Construction.
Phone:	(503) 808-4402	(503) 808-4400	(503) 808-4909
Fax:	(503) 808-4405	(503) 808-4405	(503) 808-4905
E-Mail:	cenwp-eoc@usace.army.mil	d.les.miller@usace.army.mil	guy.j.fielding@usace.army.mil

Maintenance requirements for the project may require Federal, State and local permits. The Portland District Regulatory Branch evaluates permits for proposed activities in "Waters of the United States" (including wetlands) throughout the state of Oregon, under the authorities of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act. Other related laws affecting the Corps' Regulatory Program include, but are not limited to, the Endangered Species Act, the National Environmental Policy Act, and the Fish and Wildlife Coordination Act. If the maintenance requires placement of structures or fill into the waterway below the ordinary or mean high water line, or placing dredged or fill material into the wetlands adjacent to the

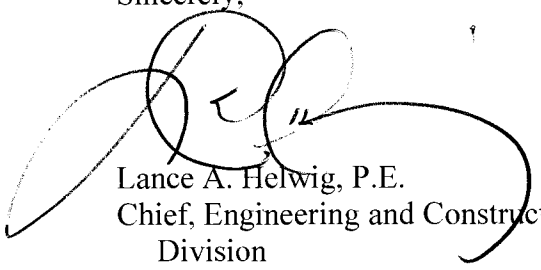
waterway, a Department of the Army permit will be required. For additional information pertaining to permits, please contact the Portland District Regulatory Branch at (503) 808-4373.

If we can assist you further with the operation and maintenance of your flood damage reduction project, or with your emergency preparedness program, please refer to the appropriate contact above. For questions related to the Inspection of Complete Works or the Levee Safety Program, contact Kyle McCune, P.E., of this office at (503) 808-4906.

Please note the periodic inspection report is For Official Use Only (FOUO) and dissemination is prohibited except as authorized by Army Regulation 20-1. In accordance with USACE notification requirements, a copy of this letter has been forwarded to:

County EM: David Houghton, Director, Multnomah County Emergency Management
County EM: Peter Tassoni – Director, Columbia County Dept. of Emergency Management
State EM: Mike Caldwell – Acting Agency Director, Oregon Emergency Management
FEMA Region X: Mark Carey – Division Director, Mitigation Division

Sincerely,



Lance A. Helwig, P.E.
Chief, Engineering and Construction Division

Enclosure

CENWP-EC-DC 5 MARCH 2012

MEMORANDUM FOR RECORD

SUBJECT: Routine Inspection Results, Sauvie Island Flood Damage Reduction System, U.S. Army Corps of Engineers (USACE) Assigned System Rating.

1. A routine inspection of the above listed levee system was conducted September 27, 28, and October 5, 2011, by U.S. Army Corps of Engineers, Portland District. This memorandum documents satisfactory completion of the inspection and establishes the operation and maintenance (O&M) segment and system ratings for the levee based on inspection findings.

2. Based on the findings associated with the inspection report, the following ratings are assigned:

	NLD PKI	Name	Rating
System:	5005000004	Sauvie Island	Minimally Acceptable
Segment(s):	5004290001	Multnomah Channel Levee	Minimally Acceptable
	5004290002	Willamette River Levee	Minimally Acceptable
	5004290003	Sturgeon Lake Levee	Minimally Acceptable
	5004290004	Columbia River Levee	Minimally Acceptable

Lance A. Helwig, P.E.
Levee Safety Officer
Chief, Engineering and Construction Division

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: Sauvie - Multnomah Channel Levee

Public Sponsor(s): Sauvie Island Drainage Improvement Company

Public Sponsor Representative: Tim Couch, District Manager

Sponsor Phone: 503-621-3397

Sponsor Email: tim@sidrainage.org

Corps of Engineers Inspector: Guy Fielding Date of Inspection: 09/27/2011

Inspection Report Prepared By: Dick Gamble Date Report Prepared: 11/16/2011

Internal Technical Review (for Periodic Inspections) By: Guy Fielding Date of ITR: 11/16/2011

Final Approved By: ~~xxxxxx~~ Date Approved: 11/16/2011

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) Multnomah Channel Segment, Sauvie Island Flood Damage Reduction Project, Sauvie Island Drainage Improvement Company
2. Reporting period: (month/day/year to month/day/year) 3/17/2010 to 10/05/2011
3. Summary of maintenance required by last inspection report: Removal of unwanted vegetation, visual inspection of pipes, review and process permits for encroachments, Meggar testing of pumps
4. Summary of maintenance performed this reporting period: Removal of a portion of the undesirable vegetation, mowing, established a new pump control pannel with electronic forebay and communication system
5. Summary of maintenance planned next reporting period: Continued vegetation removal, work on processing encroachment permits, mowing, complete development of O&M Mannual, update emergency response plan
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
Tim Couch	District Manager	29264 NW Sauvie Island Rd, Portland, OR 97231	503-621-3397	tim@sidrainage.org

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.	O&M Mannuals for Pumping Plant are currently being updated. Sponsor needs to adopt a General Manual for Levee Embankment operation and maintenance
		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.	Sandbags and sand are located at the Sauvie Island School
		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.	The sponsors Emergency Response Plan needs to be updated
		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.	SAUA_2011_a_0028: Arborvita on land side levee and crown: Comply with vegetation maintenance plan (M) SAUA_2011_a_0033: 20" diam. cherry tree 10ft from land side levee toe.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0035: One pine tree at land side levee toe under powerlines, Three clusters of trees(apple) on land side levee slope and toe.: Comply with vegetation maintenance plan. (U) SAUA_2011_a_0038: 2-3' diam. bifurcated cottonwood 12 feet from toe.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0049: One 36-42" diam. deciduous tree on the land side levee slope: Comply with vegetation maintenance plan (U) SAUA_2011_a_0051: Blackberry bushes on land side levee slope have been removed.: None. (A) SAUA_2011_a_0057: 24-30" diam. pear tree at land side levee toe, fence on land side levee slope at same location, Tree has been noted in previous inspections.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0068: Heavy brush growth on land side levee toe and slope.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0069: Three to four cottonwood stumps each approximately 3" diam. 14-20 ft from toe.: Monitor as stumps decay. (A) SAUA_2011_a_0072: Stumps 15 feet or farther from riverward levee toe.: No action req'd. (A) SAUA_2011_a_0073: Cut trees, debris,and brush on land side slope.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0078: Two cottonwood stumps (24" diam) were chipped. Some debris and trees remain at 15' from toe.: No action required. (A) SAUA_2011_a_0086: Heavy brush growth on land side levee slope. Toe was cleared in 2011, however heavy growth remains on mid-upper slope.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0088: Brush and trees adjacent land side toe of levee.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0092: Two large trees and dense blackberry within 15 feet of the landward levee toe.: Comply with vegetation maintenance plan (U)
		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

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUA_2011_a_0095: Small trees and vegetation on river side of levee. Appoximate upstream 1/2 of parking lot is in district.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0096: Small tree on riverward levee slope.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0104: Trees at landward toe of the levee.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0116: Patch of blackberries on riverward slope was mowed and will be sprayed.: Comply with vegetation maintenance plan (A) SAUA_2011_a_0117: Trees (15-18" diam.) at landward levee toe: Comply with vegetation maintenance plan (U) SAUA_2011_a_0119: Trees and brush along toe of levee. Drawings CLW-99-42/3 and CLW-99-42/22 shows the ROW line to be above the toe of the levee.: NA (A) SAUA_2011_a_0121: Blackberries have been mowed and will be sprayed. Reccomend removing old gate opening that hinders mowing..: No action required. (A) SAUA_2011_a_0122: Bush and trees (up to 4 ft diam) at land side toe of levee. Drawings CLW-99-42/22 and CLW-99-42/3 show the ROW line to be above the toe of the levee.: NA (A) SAUA_2011_a_0130: Blackberry bushes (approx 150 feet in length) and tree along toe of land side levee. Mowed in 2011, needs spray to prevent regrowth.: Comply with vegetation maintenance plan (M) SAUA_2011_a_0134: Trees cut to within 3" of rock revetment. Not removing stumps due to rock. District will spray but can not mow due to rock.: Comply with vegetation maintenance plan. Increase spray effort or clear manually. (U) SAUA_2011_a_0139: Brush and trees at land side toe. Scattered, 8-16" diam tree groups. To be removed in 2012 as part of mitigation project: NA (U) SAUA_2011_a_0149: Brush and tree groups at land side toe of levee, 18-24" diam. trees. To be removed in 2012 as part of mitigation project.: Comply with vegetation maintenance plan (U) SAUA_2011_a_0150: Significant vegetation to be removd as part of mitigation project.: Comply with vegetation management plan. (U) SAUA_2011_a_0151: Tree (12" diam.) on river side of levee.: Comply with vegetation maintenance plan. (U)

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUA_2011_a_0154: 16" diam. tree at land side toe of levee. To be removed during 2012 as part of mitigation project.: Comply with vegetation maintenance plan (U)
2. Sod Cover	**A**	**A**	There is good coverage of sod over the levee.	
		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.	
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.	SAUA_2011_a_0025: Fence along levee crest on river side: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0026: Fence along land side levee crest.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0029: Old metal fence posts and brush on land side levee slope.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0031: Power panel along fence line on river side of levee,: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0037: Fence along land side levee toe. Majority of fence is 15 ft from toe and vegetation is maintained.: None. (A) SAUA_2011_a_0039: Access road on land side levee slope.: Review and permit per current guidelines (M) SAUA_2011_a_0041: Fence on land side levee slope at shoulder.: Review and permit per current guidelines (M) SAUA_2011_a_0042: Fence along landward shoulder.: Review and permit per current guidelines (M) SAUA_2011_a_0043: Access road from land side levee slope.: Review and permit per current guidelines (M) SAUA_2011_a_0045: Fence on land side levee slope at same location as pipeline crossing.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0050: Old wire fence along land side levee toe: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0052: Fence on land side levee slope running perpendicular to barn.: Remove or review and
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				permit per current guidelines. (M) SAUA_2011_a_0053: Driveway to house (27662 Sauvie Island Rd), Vinyl fence on south side of driveway.: Review and permit per current guidelines (M) SAUA_2011_a_0055: Fence on land side levee slope and toe.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0056: House at land side levee toe.: Review and permit per current guidelines (U) SAUA_2011_a_0058: Small shed (well house) in slope of land side levee; driveway to house (27238 Sauvie Is. Rd.); two small power poles are at the toe of the levee; road to base of levee on river side.: Review and permit per current guidelines (U) SAUA_2011_a_0060: Old fence with vegetation both sides of levee: Remove or review and permit per current guidelines (M) SAUA_2011_a_0059: Fence along land side levee shoulder.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0061: Two access roads on river side of levee slope, both are sod covered and appear to be constructed from fill rather than excavation. No signs of erosion issues.: Review and permit per current guidelines (M) SAUA_2011_a_0063: Fence along landward shoulder.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0064: Ramp to farm driveway (26750 Sauvie Island Rd).: Review and permit per current guidelines (M) SAUA_2011_a_0065: Minor brush and tree debris along land side levee toe.: Remove brush and debris (M) SAUA_2011_a_0067: Fence along land side levee toe and intermittent fence along levee landward shoulder. Fencing at toe and shoulder prevents mower access resulting in overgrown blackberry and grass.: Review and permit per current guidelines, resolve access for mowing. (M) SAUA_2011_a_0070: Paved access road on land side levee slope.: Review and permit per current guidelines (M) SAUA_2011_a_0074: Rocky Point Farm driveway on land side and ramp on river side of levee.: Review and permit per current guidelines (M) SAUA_2011_a_0075: Wooden walkway and support timbers from levee crest down slope to channel and boat

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				dock.: Review and permit per current guidelines (M) SAUA_2011_a_0077: Metal post fence along the riverward shoulder.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0076: Fence running down landward slope.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0080: Ramp on river side of levee.: Review and permit per current guidelines (M) SAUA_2011_a_0081: Fence along landward shoulder, Light brush except heavy brush from 915+00 to 923+00.: Remove or review and permit per current guidelines (M) SAUA_2011_a_0082: Intersection of Sauvie Island Rd and Lucy Reeder Rd. Intersection shown on Drawing CLW-99-42/11.: No action required. (A) SAUA_2011_a_0084: Two lane paved road crossing from land side up onto top of levee. Per design drawing CLW-99-42/11.: No action required. (A) SAUA_2011_a_0087: Power poles scattered along landward levee toe, Starts at sta. 720+00 to 802+00 and then 823+00 to 923+00; communication utility also runs along levee crest,: Review and permit per current guidelines (M) SAUA_2011_a_0090: Gate and fence crossing levee crown and slopes with unwanted vegetation along entire fence line.: Remove fence or review and permit per current guidelines. Maintain vegetation along fence line. (M) SAUA_2011_a_0089: Fence line at landward toe. The majority of fenceline is heavily overgrown.: Remove or review and permit per current guidelines. Clear unwanted vegetation. (M) SAUA_2011_a_0097: Plastic irrigation pipe (8" diam) crossing levee approx 3ft below crest.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0098: Irrigation header pipe (4" diam) at toe of land side levee slope. Likely overgrown with blackberry.: Remove or review and permit per current guidelines. Control blackberry. (M) SAUA_2011_a_0099: Natural gas pipeline crossing over/through levee.: Review and permit per current guidelines (M) SAUA_2011_a_0100: Monitoring well cover or drill hole cover in pavement near centerline of levee: Review and permit per current guidelines (U) SAUA_2011_a_0102: Monitoring well or drill hole cover in

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				pavement near centerline of levee: Review and permit per current guidelines (M) SAUA_2011_a_0103: Paved access road from land side of levee, Levee is overbuilt with road section.: Review and permit per current guidelines (M) SAUA_2011_a_0105: Monitoring well or drill hole cover in pavement near centerline of levee: Review and permit per current guidelines (M) SAUA_2011_a_0106: Access road paved and gravel surfaced in overbuild section on land side of levee. Indicated on design drawing CLW-99-42/2.: No action req'd. (A) SAUA_2011_a_0107: Stations 0+00 to 42+00; Power poles within 15 feet of toe.: Review and permit per current guidelines (M) SAUA_2011_a_0109: NW Howell Park Rd to Bybee-Howell Park on land side of levee; gas meter at side of access road near edge of land side levee crest. Road indicated on design drawing CLW-99-42/2.: No action required. (A) SAUA_2011_a_0108: Natural gas line crossing levee to valve pressure meter, no record of gas encroachment permits in this section of the levee: Review and permit per current guidelines. (M) SAUA_2011_a_0110: Main Sauvie Island Road drops off to the land side of the levee embankment. Top of levee becomes sod-covered at this location.: No action required. (A) SAUA_2011_a_0111: Main gate to levee,: Review and permit per current guidelines (M) SAUA_2011_a_0112: Fence on land side of levee from gate for 300 feet. Fence cuts across slope diagonally from crest to beyond 15 foot limit at toe.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0115: Fence at lardward toe of levee,: Review and permit per current guidelines (M) SAUA_2011_a_0118: Residential garage structure at land side toe of levee.: Review and permit per current guidelines (U) SAUA_2011_a_0120: Fence along land side toe of levee, Stations 74+00 to 90+00. Drawings CLW-99-42/22 and CLW-99-42/3 shows the ROW line to be above the toe of the levee.: NA (A)

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUA_2011_a_0123: Access road from land side to crest, Sod covered with no erosion. Ramp on drawing CLW-99-42/3.: No action required. (A) SAUA_2011_a_0124: Natural gas pipeline at land side levee toe along side of paved 2-lane county road. Drawings CLW-99-42/3 and CLW-99-42/22 show the gas line to be outside of the ROW: NA (A) SAUA_2011_a_0125: Access road on land side, Gravel surfaced and in good condition. See drawing CLW-99-42/3.: No action required. (A) SAUA_2011_a_0127: Power pole at toe of levee with guy wire into embankment. .: Review and permit per current guidelines (M) SAUA_2011_a_0128: Access road from land side, Major overbuild section on land side. Utility crossing at overbuild on crest.: Review and permit per current guidelines (M) SAUA_2011_a_0131: Fence line along toe of levee with brush.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0135: Major fill on land side of levee; fill buttresses land side slope.: Review and permit per current guidelines (M) SAUA_2011_a_0138: Monitoring well and bollards 5-10 feet from riverward toe.: Review and permit per.guidance. (M) SAUA_2011_a_0136: Monitoring well and bollards 5-10 feet from riverward levee toe.: Review and permit per.guidance. (M) SAUA_2011_a_0141: Access road over levee crest, Land side to river side, gravel-surfaced road, Good condition with no signs of erosion.: Review and permit per current guidelines. (M) SAUA_2011_a_0137: Monitoring well and bollards 5-10 feet from riverward toe.: Review and permit per.guidance. (M) SAUA_2011_a_0142: Pipeline crossing through levee.: Review and permit per current guidelines (M) SAUA_2011_a_0144: Small corrugated metal storage shed at land side toe. Will be removed as part of mitigation project.: Remove or review and permit per current guidelines. (M) SAUA_2011_a_0146: Road crossing over levee at log mill; house on river side of levee; fire hydrant river side of levee;

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				levee section is overbuilt. Road is acceptable as indicated on CLW-99-42/3.: Review and permit per current guidelines (M) SAUA_2011_a_0152: Appears to be an abandoned well head/valve near toe of land side slope.: Review and permit per current guidelines (M) SAUA_2011_a_0153: Access road from river side to land side of levee. Appears to be shown on CLW-99-42/4.: No action required. (A) SAUA_2011_a_0155: Fence from crest to land side toe of levee, with gate laying on ground. No fence on river side.: Remove or review and permit per current guidelines. (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	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	SAUA_2011_a_0062: Land side levee slope is flatter, Approx. 4H:1V to 5H:1V, Station 808+00 to 820+00.: No action required. (A)
		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	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		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]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	

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		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.	
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.	SAUA_2011_a_0044: Approx. 10-12' diam. depression from sheep rub on levee slope,12-15" deep, area around guy-wire anchor and power pole.: Investigate and repair as needed (U) SAUA_2011_a_0126: Rutting along top of levee: Fill, compact, and re-seed. (M)
		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	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		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	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	SAUA_2011_a_0094: Mole mounds, both sides of the levee: Comply with animal burrow control program. (M) SAUA_2011_a_0140: Rodent burrows, 20 +- holes. Burrows not noted in 2011.: Comply with animal burrow control program. (M)
		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.	SAUA_2011_a_0046: 24" CMP with concrete plug on river side with two 5" irrigation pipes passing through, appears to be abandoned; land side inlet covered with small trees and blackberries. The Fresh water inlet is shown on Drawi CLW-99-42/30. Need to formally decommission.: Review and permit per current guidelines (U) SAUA_2011_a_0047: Document fate of old water intake.

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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.	Inspect culvert if needed. See observation 0081 in 2010 Periodic Inspection Report .: Determine inspection requirements. O&M per culvert guidelines or properlly decommission.(U) SAUA_2011_a_0093: Fresh water inlet is no longer in use. District excercises gate annually. Riverward intake is silted in. Land side inlet not visible due to brush. No interior visual inspection has been conducted. O&M per culvert guidelines or properlly decommission.: O&M per culvert guidelines or properlly decommission. (U) SAUA_2011_a_0091: Fresh water inlet appears to be in good condition; land side inlet not visible due to brush; no video inspection: Conduct visual inspection per guidelines (U) SAUA_2011_a_0113: Fresh water intake with locked gate valve, Could not see exit. No interior visual inspection has been conducted. Intake is used occasionally. District excercises annually.: O&M per culvert guidelines or properlly decommission. (U)
		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	**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.	SAUA_2011_a_0114: Riprap revetment is monitored by district Some exposed filter fabric. No significant issue.: Monitor. (A)
		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.	
13. Revetments other than Riprap	**NA**	**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 segment / system.	

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14. Underseepage Relief Wells/ Toe Drainage Systems	**U**	**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	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		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.	

[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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	**Inspect ID:** SAUA_2011_a_0027 **Title:** USACE_CENWP_SAUA_2011_a_0027_1.jpg **Caption:** View of the transmission tower. Station 727+00
	**Inspect ID:** SAUA_2011_a_0028 **Title:** USACE_CENWP_SAUA_2011_a_0028_1.jpg **Caption:** View of the row of Arborvita on the land side of the levee crown. Station 727+50

	**Inspect ID:** SAUA_2011_a_0031 **Title:** USACE_CENWP_SAUA_2011_a_0031_1.jpg **Caption:** View of the power panel. Station 729+00
	**Inspect ID:** SAUA_2011_a_0030 **Title:** USACE_CENWP_SAUA_2011_a_0030_1.jpg **Caption:** View of the land side access road. Station 728+50

	**Inspect ID:** SAUA_2011_a_0033 **Title:** USACE_CENWP_SAUA_2011_a_0033_1.jpg **Caption:** View of cherry tree 10 feet from the landward levee toe. Station 729+50
	**Inspect ID:** SAUA_2011_a_0035 **Title:** USACE_CENWP_SAUA_2011_a_0035_1.jpg **Caption:** View of pine tree at landside levee toe under powerlines and three clusters of trees (apple) on landside levee slope and toe. Station 729+50

	**Inspect ID:** SAUA_2011_a_0036 **Title:** USACE_CENWP_SAUA_2011_a_0036_1.jpg **Caption:** View of the riverward levee berm showing trees and stumps to be greater than 15 feet from the riverward levee toe. Station 730+00
	**Inspect ID:** SAUA_2011_a_0037 **Title:** USACE_CENWP_SAUA_2011_a_0037_1.jpg **Caption:** View of fence located landward of the landward levee toe. The fence is15 feet or more from the toe of toe of the levee except for the downstream corner. Fence is acceptable so long as vegetation at the downstream corner is maintained. Station 730+00 to 735+00

	**Inspect ID:** SAUA_2011_a_0038 **Title:** USACE_CENWP_SAUA_2011_a_0038_1.jpg **Caption:** View of two cotton wood trees located 12 feet from the riverward toe of the levee. Station 730+50
	**Inspect ID:** SAUA_2011_a_0040 **Title:** USACE_CENWP_SAUA_2011_a_0040_1.jpg **Caption:** Stump and debris within 15 feet of the riverward levee toe noted during the 2010 inspection have been removed. Station 746+00

	**Inspect ID:** SAUA_2011_a_0044 **Title:** USACE_CENWP_SAUA_2011_a_0044_1.jpg **Caption:** View of 10 - 12 foot diameter depression, 12 to 15 inches deep on landward levee slope from sheep rubbing levee embankment in the area around a guy-wire anchor and power pole. Station 766+00
	**Inspect ID:** SAUA_2011_a_0046 **Title:** USACE_CENWP_SAUA_2011_a_0046_1.jpg **Caption:** View of the riverside of an inlet structure having 24" CMP plugged with concrete on river sied with two 5" irrigation pipes passing through. Station 771+00

	**Inspect ID:** SAUA_2011_a_0049 **Title:** USACE_CENWP_SAUA_2011_a_0049_1.jpg **Caption:** View of a 36" to 42" diameter deciduous tree on the landward levee slope. Station 772+00
	**Inspect ID:** SAUA_2011_a_0051 **Title:** USACE_CENWP_SAUA_2011_a_0051_1.jpg **Caption:** View of landward levee slope where blackberry vines have been removed. Station 781+00

	**Inspect ID:** SAUA_2011_a_0056 **Title:** USACE_CENWP_SAUA_2011_a_0056_1.jpg **Caption:** View of house on land side to the levee. Station 795+00
	**Inspect ID:** SAUA_2011_a_0058 **Title:** USACE_CENWP_SAUA_2011_a_0058_1.jpg **Caption:** View of small shed (may be well house) on landward levee slope near driveway to house (27238 Sauvie Island Road). Two small power poles are at the toe of the levee. Station 800+00

	**Inspect ID:** SAUA_2011_a_0057 **Title:** USACE_CENWP_SAUA_2011_a_0057_1.jpg **Caption:** View of 24 to 30" diameter pear tree at land side levee toe and a view of a fence on the land side levee slope at this location. Station 800+00
	**Inspect ID:** SAUA_2011_a_0061 **Title:** USACE_CENWP_SAUA_2011_a_0061_1.jpg **Caption:** View of two sod covered access roads on the riverward levee slope. Station 817+00

	**Inspect ID:** SAUA_2011_a_0064 **Title:** USACE_CENWP_SAUA_2011_a_0064_1.jpg **Caption:** View of ramp to farm driveway at 26750Sauvie Island Road. Station 823+00
	**Inspect ID:** SAUA_2011_a_0065 **Title:** USACE_CENWP_SAUA_2011_a_0065_1.jpg **Caption:** View of brush and tree debris along land side levee toe. Station 827+00

	**Inspect ID:** SAUA_2011_a_0068 **Title:** USACE_CENWP_SAUA_2011_a_0068_1.jpg **Caption:** View of heavy brush ojn land side levee toe and slope. Station 836+00 to 845+00
	**Inspect ID:** SAUA_2011_a_0070 **Title:** USACE_CENWP_SAUA_2011_a_0070_1.jpg **Caption:** View of paved access road on landward side of the levee. Station 845+00

	**Inspect ID:** SAUA_2011_a_0072 **Title:** USACE_CENWP_SAUA_2011_a_0072_1.jpg **Caption:** View of the riverward levee berm than shows stumps and trees 15 feet or greater from the levee toe. Station 848+00
	**Inspect ID:** SAUA_2011_a_0073 **Title:** USACE_CENWP_SAUA_2011_a_0073_1.jpg **Caption:** View of cut trees and brush on the landward levee slope. Station 860+00

	**Inspect ID:** SAUA_2011_a_0074 **Title:** USACE_CENWP_SAUA_2011_a_0074_1.jpg **Caption:** View of the Rocky Point Farm driveway on lland side of the levee. Station 864+00
	**Inspect ID:** SAUA_2011_a_0075 **Title:** USACE_CENWP_SAUA_2011_a_0075_1.jpg **Caption:** View of wooden walkway and support timbers from levee crest down riverward levee slope to channel and boat dock. Station 864+50

	**Inspect ID:** SAUA_2011_a_0081 **Title:** USACE_CENWP_SAUA_2011_a_0081_1.jpg **Caption:** View of fence with brush along the landward shoulder of the levee. Station 902+00 to 923+00
	**Inspect ID:** SAUA_2011_a_0086 **Title:** USACE_CENWP_SAUA_2011_a_0086_1.jpg **Caption:** View of brush on the landside levee slope. Station 923+00

	**Inspect ID:** SAUA_2011_a_0088 **Title:** USACE_CENWP_SAUA_2011_a_0088_1.jpg **Caption:** View of brush and trees adjacent to the landward levee toe. Station 928+00 to 947+00
	**Inspect ID:** SAUA_2011_a_0089 **Title:** USACE_CENWP_SAUA_2011_a_0089_1.jpg **Caption:** View of the heavily overgrown fence line at the landward levee toe. Station 930+00 to 958+00

	**Inspect ID:** SAUA_2011_a_0089 **Title:** USACE_CENWP_SAUA_2011_a_0089_2.jpg **Caption:** View of the overgrown fence line along the landward levee toe. Station 930+00 to 958+00
	**Inspect ID:** SAUA_2011_a_0092 **Title:** USACE_CENWP_SAUA_2011_a_0092_1.jpg **Caption:** View of two large trees and dense blackberry vines within 15 feet of the landward levee toe. Station 935+00

	**Inspect ID:** SAUA_2011_a_0093 **Title:** USACE_CENWP_SAUA_2011_a_0093_1.jpg **Caption:** View of the riverward side of the fresh water inlet. Station 937+00
	**Inspect ID:** SAUA_2011_a_0095 **Title:** USACE_CENWP_SAUA_2011_a_0095_1.jpg **Caption:** View of small trees and vegetation on the river side of the levee. Station -1+00 to 2+50

	**Inspect ID:** SAUA_2011_a_0096 **Title:** USACE_CENWP_SAUA_2011_a_0096_1.jpg **Caption:** View of small tree on riverward levee slope. Station 4+00
	**Inspect ID:** SAUA_2011_a_0097 **Title:** USACE_CENWP_SAUA_2011_a_0097_1.jpg **Caption:** View of 8" plastic irrigation pipe at it's riverside exposure. Station 10+00

	**Inspect ID:** SAUA_2011_a_0100 **Title:** USACE_CENWP_SAUA_2011_a_0100_1.jpg **Caption:** View of monitoring well cover or drill hole cover in pavement near centerline of levee. Station 12+50
	**Inspect ID:** SAUA_2011_a_0102 **Title:** USACE_CENWP_SAUA_2011_a_0102_1.jpg **Caption:** View of monitoring well or drill hole cover in pavement near centerline of levee. Station 16+00

	**Inspect ID:** SAUA_2011_a_0103 **Title:** USACE_CENWP_SAUA_2011_a_0103_1.jpg **Caption:** View of paved to gravel access road on land side of levee. Station 24+50
	**Inspect ID:** SAUA_2011_a_0104 **Title:** USACE_CENWP_SAUA_2011_a_0104_1.jpg **Caption:** View of trees along the landward levee toe. Station 30+00 to 42+00

	**Inspect ID:** SAUA_2011_a_0106 **Title:** USACE_CENWP_SAUA_2011_a_0106_1.jpg **Caption:** View of paved and gravel access road in overbuild section on land side of levee. Access road is shown on drawing CLW-99-42/2. Station 38+00
	**Inspect ID:** SAUA_2011_a_0107 **Title:** USACE_CENWP_SAUA_2011_a_0107_1.jpg **Caption:** View of power poles within 15 feet of landward levee toe from Station 0+00 to 42+00.

	**Inspect ID:** SAUA_2011_a_0108 **Title:** USACE_CENWP_SAUA_2011_a_0108_1.jpg **Caption:** Natural gas line crossing levee to valve pressure meter. Station 46+50
	**Inspect ID:** SAUA_2011_a_0113 **Title:** USACE_CENWP_SAUA_2011_a_0113_1.jpg **Caption:** View of fresh water intake. Station 63+50

	**Inspect ID:** SAUA_2011_a_0114 **Title:** USACE_CENWP_SAUA_2011_a_0114_1.jpg **Caption:** Upstream view of riprap revetment,standing near it's downstream end. Station 63+00
	**Inspect ID:** SAUA_2011_a_0116 **Title:** USACE_CENWP_SAUA_2011_a_0116_1.jpg **Caption:** View of mowed blackberry vines on riverward levee slope. Station 70+50

	**Inspect ID:** SAUA_2011_a_0117 **Title:** USACE_CENWP_SAUA_2011_a_0117_1.jpg **Caption:** View of 15-18" diameter trees at the landward toe of the levee. Station 70+50
	**Inspect ID:** SAUA_2011_a_0118 **Title:** USACE_CENWP_SAUA_2011_a_0118_1.jpg **Caption:** View of residential garage structure at landward toe of the levee. Station 74+00

	**Inspect ID:** SAUA_2011_a_0119 **Title:** USACE_CENWP_SAUA_2011_a_0119_1.jpg **Caption:** View of trees and brush along the landward toe of the levee. Station 74+00 to 80+00
	**Inspect ID:** SAUA_2011_a_0127 **Title:** USACE_CENWP_SAUA_2011_a_0127_1.jpg **Caption:** View of power pole at landward toe of the levee with guy wire into levee embankment. Station 94+50

	**Inspect ID:** SAUA_2011_a_0130 **Title:** **Caption:**
	**Inspect ID:** SAUA_2011_a_0134 **Title:** USACE_CENWP_SAUA_2011_a_0134_2.jpg **Caption:** View of riverside of the levee where trees were cut within 3 " of stone surface with stumps remaining. Station 108+00

	**Inspect ID:** SAUA_2011_a_0135 **Title:** USACE_CENWP_SAUA_2011_a_0135_1.jpg **Caption:** View of land side levee fill. Station 109+00 to 125+00
	**Inspect ID:** SAUA_2011_a_0138 **Title:** USACE_CENWP_SAUA_2011_a_0138_1.jpg **Caption:** View of monitoring well and bollards located 5 to 15 feet from riverward levee toe.

	**Inspect ID:** SAUA_2011_a_0136 **Title:** USACE_CENWP_SAUA_2011_a_0136_1.jpg **Caption:** View of monitoring well and bollards 5-10 feet from riverward levee toe.
	**Inspect ID:** SAUA_2011_a_0139 **Title:** USACE_CENWP_SAUA_2011_a_0139_1.jpg **Caption:** View of brush and trees landward of the landward levee toe. Scattered,8-16" diameter tree groups. Station 125+00 to 144+00

	**Inspect ID:** SAUA_2011_a_0144 **Title:** USACE_CENWP_SAUA_2011_a_0144_1.jpg **Caption:** View of small corrugated metal storage shed at the landward levee toe. Station 140+00
	**Inspect ID:** SAUA_2011_a_0149 **Title:** **Caption:**

	**Inspect ID:** SAUA_2011_a_0150 **Title:** USACE_CENWP_SAUA_2011_a_0150_1.jpg **Caption:** View of vegetation on the levee embankment. Station 145+00 to 156+00
	**Inspect ID:** SAUA_2011_a_0151 **Title:** USACE_CENWP_SAUA_2011_a_0151_1.jpg **Caption:** View of a tree on the riverward side of the levee.

	**Inspect ID:** SAUA_2011_a_0152 **Title:** USACE_CENWP_SAUA_2011_a_0152_1.jpg **Caption:** View of abandoned well head/valve near the landward levee toe. Station149+00
	**Inspect ID:** SAUA_2011_a_0154 **Title:** USACE_CENWP_SAUA_2011_a_0154_1.jpg **Caption:** View of a 16"diameter tree at the landward toe of the levee. Station 153+00

Inspect ID: SAUA_2011_a_0134 **Title:** USACE_CENWP_SAUA_2011_a_0134_1.jpg
Caption: View of area where trees were cut to within 3" of stone surface but stumps not removed. Station 108+00

Inspect ID: SAUA_2011_a_0122 **Title:** USACE_CENWP_SAUA_2011_a_0122_1.jpg
Caption: View of brush and trees (up to 4 ft diameter) at the landward toe of the levee. Station 85+00

	**Inspect ID:** SAUA_2011_a_0146 **Title:** USACE_CENWP_SAUA_2011_a_0146_1.jpg **Caption:** View of fire hydrant and house on river side of the levee. Station 144+00

Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation noted within interior drainage channels or blocking the culverts, inlets, or discharge areas. Concrete joints and weep holes are free of grass and weeds.	
		M	Obstructions, vegetation, debris, or sediment are minor and have not impaired channel flow capacity or blocked more than 10% of any culvert openings, but should be removed. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions, vegetation, debris, or sediment have impaired the channel flow capacity or blocked more than 10% of a culvert opening. Sediment and debris removal required to re-establish flow capacity.	
2. Encroachments	**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 interior drainage system.	
		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 this component of the interior drainage system.	
3. Ponding Areas	**A**	**A**	No trash, debris, structures, or other obstructions present within the ponding areas. Sediment deposits do not exceed 10% of capacity.	
		M	Trash, debris, excavations, structures, or other obstructions present, or inappropriate activities that will not inhibit operations and maintenance. Sediment deposits do not exceed 30% of capacity.	
		U	Trash, debris, excavations, structures, or other obstructions, or other encroachments or activities noted that will inhibit operations, maintenance, or emergency work. Sediment deposits exceeds 30% of capacity.	
		N/A	There are no ponding areas associated with the interior drainage system.	
4. Fencing and Gates[1]	**A**	**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.	
		N/A	There are no features noted that require safety fencing.	
5. Concrete Surfaces (Such as gate	**NA**	**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.	

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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
wells, outfalls, intakes, or culverts)		**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 interior drainage system.	
6. Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures[2] (Such as gate wells, outfalls, intakes, or culverts)	**NA**	**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 interior drainage system.	
7. Foundation of Concrete Structures[3] (Such as culverts, inlet and discharge structures, or gatewells.)	**NA**	**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. The rate of erosion is such that the structure is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that may lead to structural instabilities before the next inspection.	
		N/A	There are no concrete items in the interior drainage system.	
8. Monolith Joints	**NA**	**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.	

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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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 monolith joints in the interior drainage system.	
9. Culverts/ Discharge Pipes[4]	**NA**	**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.	
		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.	
		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.	
10. Sluice / Slide Gates[5]	**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.	

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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
11. 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 flap gates.	
12. Trash Racks (non-mechanical)	**M**	**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.	
		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.	
13. Other Metallic Items	**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.	
14. Riprap Revetments of Inlet/ Discharge Areas	**M**	**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.	SAUA_2011_a_0024: Under water during 2011. 2010 noted: minor displacement of rock behind concrete energy dissipator, 20-25' in length; old rock in this area was 6-10" diam.: Investigate and repair as needed. (M)
		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.	
15. Revetments other than Riprap	**NA**	**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.	

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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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 are no such revetments protecting this feature of the segment / system.	

[1] Proper operation of this item must be demonstrated during the inspection.
[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.
[3] 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.
[4] 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.
[5] 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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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

	**Inspect ID:** SAUA_2011_a_0024 **Title:** USACE_CENWP_SAUA_2011_a_0024_1.jpg **Caption:** View of the pump station energy dissipator and displaced stone. Station 727+00

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	**A**	**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.	SAUA_2011_a_0006: All present. O&M being re-written 2011 as part of larger manual re-write. district maintains operating logs and maintenence schedule and records.: 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	**A**	**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.	SAUA_2011_a_0001: Manuals are present and have been recently updated: NA (A)
		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	**A**	**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)	**A**	**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	**M**	**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.	SAUA_2011_a_0002: One railing post on upstream side of building is cracked in half; one section of railing on walkway is very rusted near electrical boxes; overall metallic items have minimal rust and are in good condition: Repair damaged components (M) SAUA_2011_a_0003: On ramp support at building side and at top platform for external stairs concrete surfaces spalled exposing rebar.: Monitor (M) SAUA_2011_a_0004: Exterior wall surface of pump station exhibits spalling and cracking in the concrete panels - primarily superficial but should be monitored for growth. Crack on interior wall above doors.: Monitor (A) SAUA_2011_a_0005: Pump support structure at discharge and exterior of building are in good condition.: NA (A) SAUA_2011_a_0007: Timbers supporting bridge show
		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.	

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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
				evidence of settlement and longitudinal cracking; evidence of seepage near bearing locations: Monitor (M) SAUA_2011_a_0009: Broken glass in 50 percent of doorway windows and 10 percent of regular windows: Investigate and repair as needed. (M)
6. Fencing and Gates[1]	**A**	**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.	
		N/A	There are no features noted that require safety fencing.	
7. Pumps[1]	**M**	**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.	SAUA_2011_a_0013: Pumps not run in 2011. From 2010: All 4 pumps started and ran well with minimal unusual sounds, pumps 2 and 3 had wobbles in their shaft. For 2012 district plans to have vibration and megger testingand install shaft guards.: NA (U)
		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.	**A**	**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.	SAUA_2011_a_0018: All motors are 2200V synchronous speed motors and appear to be in good condition. Anti-rotation rachet works well and was heard to operate during pumphouse shutdown in 2010.: NA (A)
		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	**A**	**A**	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	SAUA_2011_a_0011: Appear to be clear of debris, district enters occaionaly.: NA (A)
		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.	

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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
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	**M**	**A**	Trash racks are fastened in place and properly maintained.	SAUA_2011_a_0014: Trash racks fastened in place with no rusting or major debris.: NA (A) SAUA_2011_a_0012: Building trash racks in good condition. Slough trashracks have deteriorating timber structure. Below water screens replaced in 2011. District will replace structure when necessary.: Monitor and replace structure when necessary. (M)
		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.	
		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	**A**	**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]	**A**	**A**	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	SAUA_2011_a_0019: District installed electronic forebay measuring and remote communication system in 2011.: NA (A)
		M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	

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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
		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	**U**	**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.	
16. Enclosures, Panels, Conduit and Ducts	**A**	**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	**M**	**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.	SAUA_2011_a_0016: Discarge pipes: No leaking observed, minor deterioration of coatings and some rust.: NA (M) SAUA_2011_a_0017: Concrete pipe supports in good condition, Interface with pipes is flush and not chipped or cracked.: NA (A) SAUA_2011_a_0023: Energy dissipator shows spallling and pitting with moss on the top surfaces. Non urgent issue.: Monitor for any major degredation. (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.	

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
19. Flap Gates/ Flap Valves/ Pinch Valves[1]	A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	SAUA_2011_a_0010: Discharge butterfly valves have motorized operators with limit switches and move freely when operated; bypass gate valves also motorized, minor rattling sound; valves free of rust and corrosion. One shear key replaced in 2011 on pump 3.: NA (A)
		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.	
20. Cranes[1]	A	**A**	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	SAUA_2011_a_0015: Crane rails and crane in good condition and slides on rails. No evidence of inoperability.: NA (A)
		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:** SAUA_2011_a_0019 **Title:** USACE_CENWP_SAUA_2011_a_0019_1.jpg **Caption:** View of the automatic shutoff and primer pump control panel. Station 727+00
	**Inspect ID:** SAUA_2011_a_0016 **Title:** USACE_CENWP_SAUA_2011_a_0016_1.jpg **Caption:** View of the pump station discharge pipes. Station727+00

Flood Damage Reduction Segment / System
Supplemental Data Sheet

This form is intended for the Corps' internal use and may not need to be updated with every inspection.

Name of Segment / System: Sauvie Island Flood Damage Reduction Project

Sponsor: Sauvie Island District Improvement Company

Location: Left bank of Columbia River, 94.7 to 104 miles from the mouth in Multnomah and Columbia Counties, Oregon

River Basin: Columbia

Project Description: 18 miles of earthen levee with one pump station, fresh water intakes, and riprap revetments on berms riverward of the levee embankment

Authority that Project was Constructed Under: Flood Control Act of 1936

Date of Construction:

Approximate Annual Maintenance Costs:

Construction:	☒ Federally Constructed	☐ Non-Federally Constructed
Maintenance:	☐ Federally Maintained	☒ Non-Federally Maintained

National Flood Insurance Program:

a. Is the project currently NFIP? ☒ Yes ☐ No

b. If in the NFIP, Date of Certification (per 44 CFR 65.10):

Datum Information:

a. Datum used for the design and construction of this project is: m.s.l. 1929 adjustment

b. Current recommended datum for this project is: NAVD 88

c. Has the Project been converted to the current recommended datum? ☐ Yes ☒ No

Levee Embankment Data:

a. Levee Designed Gage Function Reading/Station:

b. Level of Protection Provided: 100 year plus

c. Average Height of Levee: 20 feet

d. Average Crown Width: 12 feet

e. Average Side Slope: 1:2 - 1:3 Riverward 1:2 - 1:4.5 Landward

Protected Features (For use in preparing estimates and PIRs):

a. Total acres protected:

b. Total agriculture production acres protected:

c. Towns:

d. Businesses:

e. Residences:

f. Roads:

g. Utilities:

h. Barns:

i. Machine Sheds:

j. Outbuildings:

k. Irrigation Systems:

l. Grain Bins:

m. Other Facilities:

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: Sauvie - Willamette River Levee

Public Sponsor(s): Sauvie Island Drainage Improvement Company

Public Sponsor Representative: Tim Couch, District Manager

Sponsor Phone: 503-621-3397

Sponsor Email: tim@sidrainage.org

Corps of Engineers Inspector: Guy Fielding Date of Inspection: 09/28/2011

Inspection Report Prepared By: Dick Gamble Date Report Prepared: 11/16/2011

Internal Technical Review (for Periodic Inspections) By: Guy Fielding Date of ITR: 11/16/2011

Final Approved By: xxxxxxx Date Approved: 11/16/2011

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.

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.

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.	SAUB_2011_a_0003: Tree at riverward toe of levee.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0004: Groups of cottonwoods at river side levee toe.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0006: Brush on levee landward slope and along access road fill.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0008: Three fir trees on land side slope and at toe of slope - 12-24" diameter.: Comply with vegetation maintenance plan. (U) SAUB_2011_a_0013: Blackberries on river side of levee were mowed in 2011. Monitor for re-growth.: Continue to comply with vegetation maintenance plan. (M) SAUB_2011_a_0015: A stand of 2"- 30" diam. trees on land side levee slope.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0016: Trees on land side of levee, Trees identified on 2009 & 2010 inspections.: Remove per agreement (U) SAUB_2011_a_0020: Two large trees 3" diam at landward toe of levee.: Comply with vegetation maintenance plan. (U) SAUB_2011_a_0019: Douglas fir,3' diam, near corner of house. Deficency has been on list for removal since 2009.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0022: One 30" diameter decidious tree 5 feet from landward levee toe.: Comply with vegetation maintenance plan. (U) SAUB_2011_a_0026: Trees (several 10" diam. deciduous) and small bushes at landward levee toe and slope.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0024: House is shown on drawing CLW-99-42/4, Large walnut tree downstream of house requires removal. Vegetation on river side of levee has been controlled since last inspection.: District should identify any significant changes over the years that may require review. (U) SAUB_2011_a_0031: Brush, trees, and debris at land side levee toe.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0034: Trees at land side levee toe, Noted on last inspection for removal: Comply with vegetation maintenance plan (U) SAUB_2011_a_0035: Blackberries predominately on riverward side.: Comply with vegetation management plan.
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				(U) SAUB_2011_a_0037: Trees and small shed at toe of levee land side. Some buildings indicated on drawings to be removed or raised. Blackberries on river side.: District should identify changes from design drawings that may require review. Remove blackberry on riverward. (U) SAUB_2011_a_0039: Large arborvitae shrubs on land side levee slope: Comply with vegetation maintenance plan (U) SAUB_2011_a_0042: Brush, landscaping, and gardening on levee slopes and crest.: Comply with vegeation management plan. (U) SAUB_2011_a_0044: Brush on land side levee slope and one small (4" diam.) evergreen tree.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0045: Birch and maple trees on river side of levee within 15 feet of toe. Blackberries along fence and gate,: Comply with vegetation maintenance plan (U) SAUB_2011_a_0046: Large (48-54" diam.) tree at land side levee toe and young planted spruce trees.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0047: One deciduous tree on landward shoulder. Bushes blocking gate and crown and down landward fenceline.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0048: Three birch trees at toe of levee on river side, Pampass grass on crown of levee. This point covers the birches on multiple properties.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0050: Large tree (24" diam.) at levee toe river side: Comply with vegetation maintenance plan (U) SAUB_2011_a_0052: Six to ten trees on land side of levee (8-16" diam.),: Comply with vegetation maintenance plan (U) SAUB_2011_a_0054: Cluster of trees (10-24" diam.) on land side levee toe: Comply with vegetation maintenance plan. (U) SAUB_2011_a_0056: Large trees on land and river side levee slopes: Comply with vegetation maintenance plan (U) SAUB_2011_a_0058: Three large trees at land side toe of levee (up to 36" diam.): Comply with vegetation maintenance plan (U) SAUB_2011_a_0060: Large fir tree on land side toe; gate and fence along levee: Comply with vegetation maintenance

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				plan (U) SAUB_2011_a_0062: Cottonwood trees on river side of levee. Three large and some smaller trees in two stands and some debris.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0064: Two deciduous trees (16-18" diam.) at land side levee toe.: Comply with vegetation maintenance plan. (U) SAUB_2011_a_0068: Three aspen and an arborvite tree at land side levee toe.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0070: Stumps and tree within 15 feet of riverward levee toe. Stumps growing suckers.: Comply with vegetation maintenance plan (M) SAUB_2011_a_0075: Two (12-14" diam.) deciduous trees at land side levee toe: Comply with vegetation maintenance plan (U) SAUB_2011_a_0077: Tree (8-12" diam.) and brush on land side of levee within 15 feet of toe.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0080: Trees within 15 feet of the riverward toe of the levee have been noted for removal since 2009. Roots are visible on the crown of the levee.: Comply with vegetation maintenance plan (U) SAUB_2011_a_0090: District completed significant effort in 2010/2011 to clear cottonwoods along both toes.: No action required. (A)
2. Sod Cover	**A**	**A**	There is good coverage of sod over the levee.	
		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.	
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.	SAUB_2011_a_0002: Natural gas pipeline over levee crest, Pipe appears to cross in overbuild section on levee slopes (both river side and land side) and crest.: Review and permit

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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.	per current guidelines. (M) SAUB_2011_a_0001: Fence along land side toe of levee, Blackberry and scattered brush along fene line.: Remove or review and permit per current guidelines. (M) SAUB_2011_a_0005: Two houses on land side slope of levee are indicated on design drawing CLW-99-42/4, Access road from land side to river side between houses is not on drawings.: District should identify any significant changes over the years that may require review. (M) SAUB_2011_a_0007: Gate and fence land side and river side: Review and permit per current guidelines (M) SAUB_2011_a_0009: Small storage shed and garage at land side levee toe, 12' from toe.: Review and permit per current guidelines (U) SAUB_2011_a_0010: Wooden fence along land side toe of levee.: Review and permit per current guidelines (M) SAUB_2011_a_0011: House and deckwalkway on land side levee slope. House is not indicated on design drawings.: Review and permit per current guidelines (U) SAUB_2011_a_0012: Gate and wooden fence along land side and river side of levee: Review and permit per current guidelines (M) SAUB_2011_a_0014: House on land side of levee appears to be shown on CLW-99-42/4 at sta 171+50, Chainlink fence on land side and river side slopes and levee crest at both sides of private property, Waterlines at toe and crossing. Stairs on river side permitted #813.: District should identify any significant changes over the years that may require review. (M) SAUB_2011_a_0017: House on levee indicated on drawing CLW-99-42/4.: District should identify any significant changes over the years that may require review. (A) SAUB_2011_a_0021: House on land side of levee slope, Original house is shown on CLW-99-42/4. Fence and gate over levee slopes and crest on both sides of property. Deck on riverward toe built in 2011 w/o permit.: District should identify any significant changes over the years that may require review. (M) SAUB_2011_a_0023: Walkway and fence on land side of levee.: Review and permit per current guidelines (U) SAUB_2011_a_0027: Fence on land side and gate on levee crest. Vegetation along fence is maintained.: Review and
		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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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				permit per current guidelines (M) SAUB_2011_a_0028: Bushes, groundcover, and walkway structure on land side levee slope. Brush and groundcover plants prevent observation of developing issues during flood events.: Remove or review and permit per current guidelines (U) SAUB_2011_a_0029: Double-wide trailer house and satellite dish on land side levee slope. House is shown on Drawings CLW-99-42/4 and CLW-99-42/23. Satellite dish appears to be unpermitted.: Review and permit per current guidelines (U) SAUB_2011_a_0030: Navigation marker on riverside shoulder. Shown on drawing CLW-99-42/4.: No action required. (A) SAUB_2011_a_0032: Random fill placed at land side toe of levee, approx. 125' in length and about 8' deep. For 2011 inspection fill has been graded flat.: Review and permit per current guidelines (M) SAUB_2011_a_0033: Gate with fence and blackberries.: Remove or review and permit per current guidelines (M) SAUB_2011_a_0036: House appears to be shown on CLW-99-42/4, Recent deck and walkway on land side levee slope and fences on both sides of property, Access road over levee crest with sod-covered road surface.: District should identify any significant changes over the years that may require review and permits (walkway). (M) SAUB_2011_a_0038: House on land side levee toe indicated on drawing CLW-99-42/4.: District should identify any significant changes over the years that may require review. (M) SAUB_2011_a_0041: House and overbuild fill on land side levee slope appears to be shown on CLW-99-42/4. Fence and gates on both sides of property, Access road on land side slope: District should identify any significant changes over the years that may require review. Review and permit changes per current guidelines. (U) SAUB_2011_a_0043: House on landward side. House is not shown on drawings though it appears toe drains were constructed at this location.: Review and permit. (U) SAUB_2011_a_0049: Impassable upstream gate due to overgrown vegetation. House on land side levee slope is not on drawings. Four 8-12" diam. decidious trees on overbuilt levee crest. Brush along fence on land side levee slope.:

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				Comply with vegetation management plan. Review and permit encroachments per current guidelines (U) SAUB_2011_a_0051: House, deck, and landscaping on landward side. Not indicated on drawings.: Comply with vegetation management plan. Review and permit encroachments per current guidelines. (U) SAUB_2011_a_0053: Access road on land side slope of levee with gravel surface.: Review and permit per current guidelines (M) SAUB_2011_a_0055: Fenced enclosure for animals at crest of levee and river side slope: Review and permit per current guidelines (M) SAUB_2011_a_0057: Access road land side to river side levee slope and crest with gravel surfaced and good condition. Not shown on drawings.: Review and permit per current guidelines (M) SAUB_2011_a_0059: House on land side levee slope with fill against slope and significnt landscaping. No house indicated on drawings.: Review and permit per current guidelines (U) SAUB_2011_a_0061: Storage shed and garage structure at land side levee toe: Review and permit per current guidelines (U) SAUB_2011_a_0063: Fence and gate on land side and river side slopes and crest with vegetation along fenceline.: Review and permit per current guidelines (M) SAUB_2011_a_0065: Access road from land side slope. It may be the access road shown at station 234+00 on Drawings CLW-99-42/24 and CLW-99-42/5.: Review and permit per current guidelines (M) SAUB_2011_a_0067: Gate (on crest) and fence on land side and river side slopes. Impassible due to vegetation.: Review and permit per current guidelines (U) SAUB_2011_a_0069: House and landscaping on landward side. House appears on CLW-99-42/5.: District should identify any significant changes over the years that may require review. Review and permit changes per current guidelines. Landscapingshould comply with vegetation management guidelines. (M) SAUB_2011_a_0071: Access road on river side of levee slope, sod-covered, good condition. Not shown on drawings.: Review and permit per current guidelines (M) SAUB_2011_a_0072: Fence over levee slopes and crest,

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				with gate on the ground. Brush at land side levee toe.: Remove or review and permit per current guidelines. Comply with vegetation management plan. (M) SAUB_2011_a_0073: Access road to river side of levee, sod covered.: Review and permit per current guidelines (M) SAUB_2011_a_0074: Access road from land side levee slope shown on Drawings CLW-99-42/5 and CLW-99-42/24.: No action required. (A) SAUB_2011_a_0076: Two farm houses (wood siding), three farm buildings (2 metal clad, one wooden storage shed) all within 15 feet of toe. Not immediately clear what is shown on drawing CLW-99-42/5: District should identify any significant changes over the years that may require review. Review and permit changes per current guidelines. (M) SAUB_2011_a_0078: Access road on river side of levee, well sodded. Indicated on Drawings CLW-99-42/24 and CLW-99-42/5.: NA (A) SAUB_2011_a_0079: Access road from river side of levee slope, sod-covered surface, good condition. May have been constructed for access to levee construction stockpile area.: Review and permit per current guidelines (M) SAUB_2011_a_0081: Access road from river side slope, sod-covered surface, good condition. May have been construted during levee construction for access to stockpile area. See drawing CLW-99-42/5.: Review and permit per current guidelines (M) SAUB_2011_a_0083: Gate (on crest) and fence over both levee slopes.: Remove or review and permit per current guidelines. (M) SAUB_2011_a_0084: Fence lines along both land and river side levee toes. Including mature landscape trees along landward fence line.: Review and permit per current guidelines. Comply with vegetation management plan. (M) SAUB_2011_a_0085: Permitted fill on land side completed in 2011.: Monitor (A) SAUB_2011_a_0086: Power pole at riverward toe of the levee.: Review and permit per current guidelines (M) SAUB_2011_a_0087: Small concrete storage shed at land side toe of levee toe (sawdust storage for animal barn).: Review and permit per current guidelines (U) SAUB_2011_a_0088: Fence at land side levee toe.: Remove or Review and permit per current guidelines. (M)

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUB_2011_a_0089: Locking gate with fences on land side and river sides of levee. District has key.: Review and permit per current guidelines (M) SAUB_2011_a_0091: Two gate posts remain.: Review and permit per current guidelines (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	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		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	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		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]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		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.	
8. Depressions/ Rutting	**A**	**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.	

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		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	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	SAUB_2011_a_0082: Mole holes on crown, land side, and river side of levee for approximate 100' length along levee.: Comply with animal burrow control program (M)
		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.)	**NA**	**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.	
		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.	

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**NA**	**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 segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**NA**	**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 segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**U**	**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.	

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		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.	

[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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	**Inspect ID:** SAUB_2011_a_0002 **Title:** USACE_CENWP_SAUB_2011_a_0002_1.jpg **Caption:** View of natural gas pipeline crossing of the levee in apparent overbuild. Station 154+50
	**Inspect ID:** SAUB_2011_a_0003 **Title:** USACE_CENWP_SAUB_2011_a_0003_1.jpg **Caption:** View of tree at the riverward levee toe. Station 158+50

	**Inspect ID:** SAUB_2011_a_0001 **Title:** USACE_CENWP_SAUB_2011_a_0001_1.jpg **Caption:** View of fence located along the landward levee toe. There are berry vines andscattered brush along the fence line. Station 155+00 to 165+00
	**Inspect ID:** SAUB_2011_a_0004 **Title:** USACE_CENWP_SAUB_2011_a_0004_1.jpg **Caption:** View of cottonwood trees along the river side of the levee toe. Station 158+50 to 158+50

	**Inspect ID:** SAUB_2011_a_0006 **Title:** USACE_CENWP_SAUB_2011_a_0006_1.jpg **Caption:** View of brush on the landward slope of the levee and along the access road fill. Station 167+00
	**Inspect ID:** SAUB_2011_a_0005 **Title:** USACE_CENWP_SAUB_2011_a_0005_1.jpg **Caption:** View of two houses on the landward side of the levee. Station 165+00 to 167+50

	**Inspect ID:** SAUB_2011_a_0008 **Title:** USACE_CENWP_SAUB_2011_a_0008_1.jpg **Caption:** View of three fir rees on the landwared levee slope and toe 12 to 24 inches in diameter. Station167+50
	**Inspect ID:** SAUB_2011_a_0009 **Title:** USACE_CENWP_SAUB_2011_a_0009_1.jpg **Caption:** View of small storage shed and garage approximately 12 feet from the landward toe of the levee. Station 167+50

	**Inspect ID:** SAUB_2011_a_0011 **Title:** USACE_CENWP_SAUB_2011_a_0011_1.jpg **Caption:** View of house and deckwalkway on the landward side of the levee. Station 169+00
	**Inspect ID:** SAUB_2011_a_0013 **Title:** USACE_CENWP_SAUB_2011_a_0013_1.jpg **Caption:** View of mowed berry vines on the river sideof the levee. Station 171+00

	**Inspect ID:** SAUB_2011_a_0014 **Title:** USACE_CENWP_SAUB_2011_a_0014_1.jpg **Caption:** View of house on landside of the levee. Chain link fence shown in the photo extends along the land side and river side slopes and the levee crest at both sides of the property. Station 171+50
	**Inspect ID:** SAUB_2011_a_0015 **Title:** USACE_CENWP_SAUB_2011_a_0015_1.jpg **Caption:** View of a stand of 2 to 30" diameter trees on the landward levee slope. Station 173+50

	**Inspect ID:** SAUB_2011_a_0016 **Title:** USACE_CENWP_SAUB_2011_a_0016_1.jpg **Caption:** View of trees on the landward levee slope. Station 173+50
	**Inspect ID:** SAUB_2011_a_0017 **Title:** USACE_CENWP_SAUB_2011_a_0017_1.jpg **Caption:** View of house on landside of levee shown on drawing CLW-99-42/4. Station 174+50

	**Inspect ID:** SAUB_2011_a_0020 **Title:** USACE_CENWP_SAUB_2011_a_0020_1.jpg **Caption:** View of two large 3- foot diameter trees on the landward levee toe. Station 175+00
	**Inspect ID:** SAUB_2011_a_0019 **Title:** USACE_CENWP_SAUB_2011_a_0019_1.jpg **Caption:** View of 3-foot diameter douglas fir tree on the landward levee slope. Station 174+50

	**Inspect ID:** SAUB_2011_a_0021 **Title:** USACE_CENWP_SAUB_2011_a_0021_1.jpg **Caption:** View of newly constructed deck on the river side of the levee. Station 176+00
	**Inspect ID:** SAUB_2011_a_0021 **Title:** USACE_CENWP_SAUB_2011_a_0021_2.jpg **Caption:** View of house on land side of levee slope. Original house is shown on CLW-99-42/4. Station 176+00

	**Inspect ID:** SAUB_2011_a_0022 **Title:** USACE_CENWP_SAUB_2011_a_0022_1.jpg **Caption:** View of 30" diameter deciduous tree located 5 feet from the landward levee toe. Station 177+00
	**Inspect ID:** SAUB_2011_a_0023 **Title:** USACE_CENWP_SAUB_2011_a_0023_1.jpg **Caption:** View of walkway and fence on the land side of the levee. Station 177+50

	**Inspect ID:** SAUB_2011_a_0026 **Title:** USACE_CENWP_SAUB_2011_a_0026_1.jpg **Caption:** View of a 10" diameter deciduous tree and brush at the landward levee toe and slope. Station 180+00
	**Inspect ID:** SAUB_2011_a_0024 **Title:** USACE_CENWP_SAUB_2011_a_0024_1.jpg **Caption:** View of house and walnut tree at Station 180+00. House is shown on drawing CLW-99-42/4. The walnut tree needs to be removed.

	**Inspect ID:** SAUB_2011_a_0028 **Title:** USACE_CENWP_SAUB_2011_a_0028_1.jpg **Caption:** View of bushes, ground cover, and walkway structure on the landward levee slope. Station 182+00
	**Inspect ID:** SAUB_2011_a_0029 **Title:** USACE_CENWP_SAUB_2011_a_0029_1.jpg **Caption:** View of a double-wide trailer house near the landward toe of the levee and a satellite dish on the landward levee slope at Station 183+00.

	**Inspect ID:** SAUB_2011_a_0031 **Title:** USACE_CENWP_SAUB_2011_a_0031_1.jpg **Caption:** View of brush, trees, and debris adjacent to the landward levee toe at Station 183+00 to 188+00.
	**Inspect ID:** SAUB_2011_a_0032 **Title:** USACE_CENWP_SAUB_2011_a_0032_1.jpg **Caption:** View of random fill abutting the landward toe of the levee at Station 190+00. The fill is approximately 125 feet in length and about 8 feet deep.

	**Inspect ID:** SAUB_2011_a_0034 **Title:** USACE_CENWP_SAUB_2011_a_0034_1.jpg **Caption:** View of trees at the landward levee toe. Station 192+50
	**Inspect ID:** SAUB_2011_a_0036 **Title:** USACE_CENWP_SAUB_2011_a_0036_1.jpg **Caption:** View of house which appears to be shown on drawing CLW-99-42/4. There is a deck and walkway on the landward levee slope, fence on both sides of the property, and access road over the levee associated with the house. Station 196+50

	**Inspect ID:** SAUB_2011_a_0037 **Title:** USACE_CENWP_SAUB_2011_a_0037_1.jpg **Caption:** View of trees and small sheds at the landward toe of the levee. Station 197+50
	**Inspect ID:** SAUB_2011_a_0038 **Title:** USACE_CENWP_SAUB_2011_a_0038_1.jpg **Caption:** View of house on landward toe of the levee at Station 199+00. House is shown on drawing CLW-99-42/4

	**Inspect ID:** SAUB_2011_a_0039 **Title:** USACE_CENWP_SAUB_2011_a_0039_1.jpg **Caption:** View of large Arborvitae on the landward slope of the levee at Station 199+50.
	**Inspect ID:** SAUB_2011_a_0041 **Title:** USACE_CENWP_SAUB_2011_a_0041_1.jpg **Caption:** View of house and overbuild on the landward levee slope. House appears to be shown on drawing CLW-99-42/4. There are fences, gates, access road, and a concrete fence along the access road associated with the property.Station 199+50

	**Inspect ID:** SAUB_2011_a_0042 **Title:** USACE_CENWP_SAUB_2011_a_0042_1.jpg **Caption:** View of brush, landscaping, and gardening activity on the levee slopes and crest at Station 200+10 to 202+30.
	**Inspect ID:** SAUB_2011_a_0043 **Title:** USACE_CENWP_SAUB_2011_a_0043_1.jpg **Caption:** View of house on the landward side of the levee at Station 202+30. The house is not shown on the drawings. It appears that toe drains were installed at this location.

	**Inspect ID:** SAUB_2011_a_0044 **Title:** USACE_CENWP_SAUB_2011_a_0044_1.jpg **Caption:** View of brush and one small (4" diameter) evergreen tree on the landward levee slope at Station 203+50.
	**Inspect ID:** SAUB_2011_a_0045 **Title:** USACE_CENWP_SAUB_2011_a_0045_1.jpg **Caption:** View of birch and maple trees within 15 feet of the riverward levee toe. There are also blackberries along a fence and gate at this location. Station 203+50

	**Inspect ID:** SAUB_2011_a_0046 **Title:** USACE_CENWP_SAUB_2011_a_0046_1.jpg **Caption:** View of a large (48 to 54" diameter) tree and young planted spruce trees at the landward toe of the levee. Station 207+00
	**Inspect ID:** SAUB_2011_a_0047 **Title:** USACE_CENWP_SAUB_2011_a_0047_1.jpg **Caption:** View of one large deciduous tree on the landward shoulder of the levee and of bushes blocking gate and crown and extending down landward and riverward fence line. Station 210+00

	**Inspect ID:** SAUB_2011_a_0050 **Title:** USACE_CENWP_SAUB_2011_a_0050_1.jpg **Caption:** View of a large tree (24" diameter) at the riverward toe of the levee. Station 210+00
	**Inspect ID:** SAUB_2011_a_0049 **Title:** USACE_CENWP_SAUB_2011_a_0049_1.jpg **Caption:** View of house on landward levee slope at Station 210+00. There are fences, gates, trees, and brush associated with the house. The gate at the upstream end of the property is impassable.

	**Inspect ID:** SAUB_2011_a_0051 **Title:** USACE_CENWP_SAUB_2011_a_0051_1.jpg **Caption:** View of house, deck, and landscaping on the landward side of the levee. House is not shown on the drawings.
	**Inspect ID:** SAUB_2011_a_0052 **Title:** USACE_CENWP_SAUB_2011_a_0052_1.jpg **Caption:** View of six to ten trees (8-16" diameter) on the landward side of the levee at Station 212+00.

	**Inspect ID:** SAUB_2011_a_0054 **Title:** USACE_CENWP_SAUB_2011_a_0054_1.jpg **Caption:** View of trees (10-24" in diameter) at the landward toe of the levee. Station 215+50
	**Inspect ID:** SAUB_2011_a_0056 **Title:** USACE_CENWP_SAUB_2011_a_0056_1.jpg **Caption:** View of large trees on the landward and riverward levee slopes at Station 217+50 to 223+50.

	**Inspect ID:** SAUB_2011_a_0059 **Title:** USACE_CENWP_SAUB_2011_a_0059_1.jpg **Caption:** View of house, overbuild fill, and landscaping on the landward side of the levee at Station 223+00. There is no house indictated on the drawings.
	**Inspect ID:** SAUB_2011_a_0060 **Title:** USACE_CENWP_SAUB_2011_a_0060_1.jpg **Caption:** View of large fir tree on the landward toe of the levee and gate and fence crossing of the levee. Station 223+50

	**Inspect ID:** SAUB_2011_a_0061 **Title:** USACE_CENWP_SAUB_2011_a_0061_1.jpg **Caption:** View of a storage shed and garage structure at the landward levee toe. Station 224+00
	**Inspect ID:** SAUB_2011_a_0062 **Title:** USACE_CENWP_SAUB_2011_a_0062_1.jpg **Caption:** View of cottonwood trees on the river side of the levee at Station 224+00.

	**Inspect ID:** SAUB_2011_a_0064 **Title:** USACE_CENWP_SAUB_2011_a_0064_1.jpg **Caption:** View of two deciduous trees (16-18" diameter) at the landward levee toe. Station 224+00
	**Inspect ID:** SAUB_2011_a_0067 **Title:** USACE_CENWP_SAUB_2011_a_0067_1.jpg **Caption:** View of gate (on crest) and levee crossing fence that is impassible due to vegetation. Station 231+50

	**Inspect ID:** SAUB_2011_a_0068 **Title:** USACE_CENWP_SAUB_2011_a_0068_1.jpg **Caption:** View of three aspens and an arborvite tree at the landward levee toe. Station 231+50
	**Inspect ID:** SAUB_2011_a_0069 **Title:** USACE_CENWP_SAUB_2011_a_0069_1.jpg **Caption:** View of house (Beall) and landscaping on the landward side of the levee. The house is permitted.

	**Inspect ID:** SAUB_2011_a_0077 **Title:** USACE_CENWP_SAUB_2011_a_0077_1.jpg **Caption:** View of a tree (8-12" diameter) and brush on the landward side of the levee within 15 feet of the toe. Station 259+00.
	**Inspect ID:** SAUB_2011_a_0080 **Title:** USACE_CENWP_SAUB_2011_a_0080_1.jpg **Caption:** View of large trees located within 15 feet of the riverward levee toe at Station 275+00.

	**Inspect ID:** SAUB_2011_a_0085 **Title:** USACE_CENWP_SAUB_2011_a_0085_1.jpg **Caption:** View of permitted landside fill that was completed in 2011. Station 288+50
	**Inspect ID:** SAUB_2011_a_0087 **Title:** USACE_CENWP_SAUB_2011_a_0087_1.jpg **Caption:** View of small concrete storage shed at the landward toe of the levee. Station 290+00

	**Inspect ID:** SAUB_2011_a_0090 **Title:** USACE_CENWP_SAUB_2011_a_0090_1.jpg **Caption:** View of a reach of levee where significant efforts were made in 2010/2011 to clear cottonwood trees along both the riverward and landward levee toes. Emergent cottonwood growths can be seen in the photo.

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: Sauvie - Sturgeon Lake Levee

Public Sponsor(s): Sauvie Island Drainage Improvement Company

Public Sponsor Representative: Tim Couch, District Manager

Sponsor Phone: 503-621-3397

Sponsor Email: tim@sidrainage.org

Corps of Engineers Inspector: Guy Fielding Date of Inspection: 10/05/2011

Inspection Report Prepared By: Dick Gamble Date Report Prepared: 11/16/2011

Internal Technical Review (for Periodic Inspections) By: Guy Fielding Date of ITR: 11/16/2011

Final Approved By: xxxxxxxx Date Approved: 11/16/2011

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.

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.

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.	SAUC_2011_a_0003: Two large trees within 15 feet of riverward toe.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0004: Large tree stump with some blackberries by toe of levee: Remove stump and clear blackberry. (U) SAUC_2011_a_0006: Trees have been removed to 15' from riverward toe (2011), a patch of blackberry at toe remains.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0007: Brush and Hawthorne trees along landward levee toe.: Comply with vegetation management plan. (U) SAUC_2011_a_0009: Stump and tree debris on lower riverward slope and 100' length of willows adjacent to riverward toe.: Comply with vegetation maintenance plan (M) SAUC_2011_a_0012: Blackberries and tree limbs within 15 feet of toe; large tree is 16' from toe.: Comply with vegetation maintenance plan (M) SAUC_2011_a_0013: Dead tree at land side toe of levee.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0014: Six to eight medium trees at land side levee toe (8-12" diam.): Comply with vegetation maintenance plan. (U) SAUC_2011_a_0016: Trees and vegetation along the landward toe of the levee marked for removal since 2009 inspection, no action has been taken. Approximately 400 feet in length.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0018: Tree at land side of levee (18" diam.).: Comply with vegetation maintenance plan (U) SAUC_2011_a_0025: One deciduous tree at land side levee toe (16" diam.).: Comply with vegetation maintenance plan (U) SAUC_2011_a_0020: Large trees (12 or more) at riverward toe of levee: Comply with vegetation maintenance plan (U) SAUC_2011_a_0028: Trees were cut back to 15' in 2011. USF&W property.: No action required. (A) SAUC_2011_a_0001: Scattered large trees (up to 36" diam.) including a large oak listed in previous inspection; heavy brush and scattered trees at land side levee toe, fence near lanward toe is completely engulfed in brush.: Comply with vegetation maintenance plan. (U)
		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

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUC_2011_a_0031: 12" diam. tree at toe of river side levee within 15 feet of levee toe.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0035: Heavy brush and fence along river side levee slope. Scattered medium-sized to large diameter deciduous trees in the brush along the levee toe.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0037: Large cottonwood trees at river side levee toe. One tree is cut and lying on toe.: Comply with vegetation maintenance plan (U) SAUC_2011_a_0041: Trees on slope of levee have been cut but debris and stumps are still in place, about 12-15 stumps (6-18" diam.) over approx. 250'.: Comply with vegetation maintenance plan. SDIC will push away from levee. (M) SAUC_2011_a_0044: Blackberries and brush on riverward slope. Fence along riverard shoulder prvents easy mowing access.: Comply with vegetation maintenance plan. (M) SAUC_2011_a_0050: Blackberries on riverward slope.: Comply with vegetation maintenance plan. (U) SAUC_2011_a_0052: Cut deciduous trees (up to 24" diam.) on river side slope, Debris left on slope over approx. 200 linear feet. Trees will be pushed off levee. Long grass and brush.: Remove debris and comply with vegetation management plan. (M) SAUC_2011_a_0053: One small tree (6-8" diam.) within 15 feet of riverward toe.: Comply with vegetation maintenance plan. (M) SAUC_2011_a_0054: Large trees, both cut and living, on riverward slope and toe. Revetment rock covered in brush and areas of dense blackberries.: Comply with vegetation maintenance plan. (U) SAUC_2011_a_0057: One tree has been cut, stump and debris remain on riverward side of levee(2010).: Comply with vegetation maintenance plan (M) SAUC_2011_a_0058: Three to four groups of trees have been cut, debris and stumps should be removed.: Comply with vegetation maintenance plan. (M) SAUC_2011_a_0061: Blackberries at, and within, 15 feet of riverward toe.: Comply with vegetation maintenance plan (M) SAUC_2011_a_0065: 12-15 trees, in two groups, on riverward slope, 18-24" diam.: Comply with vegetation maintenance plan (U)

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
2. Sod Cover	**A**	**A**	There is good coverage of sod over the levee.	
		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.	
3. Encroachments	**M**	**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.	SAUC_2011_a_0002: Reeder Road crossing over levee. Incorporated in design per drawing CLW-99-42/7.: (A) SAUC_2011_a_0008: Fence and gate posts.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0010: Gate (on crest) and fence line on both river side and land side slopes: Remove or eview and permit per current guidelines. (M) SAUC_2011_a_0015: Access road from land side of levee slope, sod covered, minor tire ruts. Indicated on drawing CLW-99-42/8.: No action required. (A) SAUC_2011_a_0017: Cattle trails.: Fill and re-seed. (M) SAUC_2011_a_0023: Gate (on crest) and fence down both slopes. Bee-nest in gatepost.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0024: Access road from land side slope, sod-covered surface, constructed from fill.: Review and permit per current guidelines (M) SAUC_2011_a_0021: Gate (on crest) and fence on levee slopes: Remove review and permit per current guidelines. SDIC could not open lock. (M) SAUC_2011_a_0026: Fence line along land side levee toe.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0027: Access road on both land and river side slopes. Indicated on CLW-99-42/8.: No action required. (A) SAUC_2011_a_0022: Fence line along land side levee toe.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0029: Access road from land side levee slope at wildlife viewing area parking lot. Sod-covered, good condition. Indicated on CLW-99-42/8.: No action required. (A) SAUC_2011_a_0030: Access walkway and road from land side levee slope, road is gravel-surfaced, walkway is
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				concrete-surfaced, (USACE permit 0300; 1992).: No action required. (A) SAUC_2011_a_0032: Fence at landward toe of levee (metal and wooden posts).: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0034: Gate (on crest) and fence over levee slopes.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0038: Fence (minimal brush) along river side levee toe.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0039: Gate (on crest) and fence down both slopes.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0040: Access road on land side.: Review and permit per current guidelines (M) SAUC_2011_a_0043: Gate (on crest) and fence doww land side levee slope.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0042: Fence along crest of levee at riverward shoulder.: Remove or review and permit per current guidelines (M) SAUC_2011_a_0045: Access road on landward levee slope shown on Drawing CLW-99-42/28.: No action required (A) SAUC_2011_a_0046: Gate posts on lavee crest.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0047: Access road from land side levee slope. Indicated on CLW-99-42/9.: No action required. (A) SAUC_2011_a_0048: Access road along river side of levee. Indicated on CLW-99-42/9.: No action required. (A) SAUC_2011_a_0049: Access road from river side, gravel-surfaced, good condiition.: Review and permit per current guidelines. (M) SAUC_2011_a_0051: Single power pole at land side levee toe, indicated by "P.P." on CLW-99-42/9.: No action required. (A) SAUC_2011_a_0055: Locked gate on crest and fence downboth slopes.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0059: Fence crossing over levee; vegetation along fence.: Remove or review and permit per current guidelines. Comply with vegetation management plan. (M) SAUC_2011_a_0062: Gate (on crest) and fence down river

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				side levee slope.: Remove or review and permit per current guidelines. (M) SAUC_2011_a_0063: Access road with gate on landward side.: Review and permit per current guidelines. (M) SAUC_2011_a_0064: Fence along landward shoulder.: Remove or review and permit per current guidelines. (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	**M**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	SAUC_2011_a_0033: Old slump or erosion near toe of levee, well grassed, overall length is about 200', max vertical change is 2-3' with an average depth of 1.5'.: Monitor, Investigate and repair if exacerbated. (M)
		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	**M**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	SAUC_2011_a_0011: Toe of levee has undergone some erosion due to cattle management practices resulting in a vertical cut in lower riverward slope 18-24" high.: Investigate, repair, and change practices. (M) SAUC_2011_a_0036: Old erosion cut in slope due to cattle, max height 3-4"", area predominately well grassed but some damaged sod from cattle prints.with no sign of active erosion, no cracking up slope.: Fill and re-seed. (M) SAUC_2011_a_0056: Erosion of riverward bench to within approximately 15' of riverward toe.: Monitor. (A)
		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]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
8. Depressions/ Rutting	**A**	**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.	
		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	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		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	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	SAUC_2011_a_0019: Mole burrows along top of levee for about 150-200'.: Comply with animal burrow control program (M)
		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.)	**NA**	**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.	
		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.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**NA**	**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 segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**NA**	**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 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.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		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.	

[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.

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

	**Inspect ID:** SAUC_2011_a_0003 **Title:** USACE_CENWP_SAUC_2011_a_0003_1.jpg **Caption:** View of two large trees within 15 feet of the riverward levee toe at Station 461+00.
	**Inspect ID:** SAUC_2011_a_0006 **Title:** USACE_CENWP_SAUC_2011_a_0006_1.jpg **Caption:** View of the riverward side of the levee at Station 462+00. The trees are 15 feet or greater from the riverward toe of the levee. However, there is a thick growth of berry vines along the riverward toe that impairs visual inspection and impeads access.

	**Inspect ID:** SAUC_2011_a_0005 **Title:** USACE_CENWP_SAUC_2011_a_0005_1.jpg **Caption:** View of multiple tree groups at land side of levee toe. The majority of length of trees were cleared (2011). Station 462+00 to 474+00
	**Inspect ID:** SAUC_2011_a_0007 **Title:** USACE_CENWP_SAUC_2011_a_0007_1.jpg **Caption:** View of approximately 100 linear feet of brush and hawthorne trees at the landward toe of the levee. Station 464+60

	**Inspect ID:** SAUC_2011_a_0009 **Title:** USACE_CENWP_SAUC_2011_a_0009_1.jpg **Caption:** View of woody debris intermingled with small willow trees at the riverward toe of the levee. Station 468+00
	**Inspect ID:** SAUC_2011_a_0011 **Title:** USACE_CENWP_SAUC_2011_a_0011_1.jpg **Caption:** View of cattle damage along the riverward toe of the levee that has caused an 18-24" vertical cut. Station 477+00

	**Inspect ID:** SAUC_2011_a_0013 **Title:** USACE_CENWP_SAUC_2011_a_0013_2.jpg **Caption:** View of dead tree on the landward levee toe at Station 483+00.
	**Inspect ID:** SAUC_2011_a_0014 **Title:** USACE_CENWP_SAUC_2011_a_0014_1.jpg **Caption:** View of six to eight medium (8-12" diameter) trees on the landward levee toe. Station 483+00

	**Inspect ID:** SAUC_2011_a_0016 **Title:** USACE_CENWP_SAUC_2011_a_0016_1.jpg **Caption:** View of approximately 400 linear feet of trees and vegetation on the landside of the levee at Station 485+00.
	**Inspect ID:** SAUC_2011_a_0028 **Title:** USACE_CENWP_SAUC_2011_a_0028_1.jpg **Caption:** View of a section of levee on USF&WL property where trees were cut back to 15 feet from levee toe in 2011.

	**Inspect ID:** SAUC_2011_a_0001 **Title:** USACE_CENWP_SAUC_2011_a_0001_1.jpg **Caption:** View of scattered large trees (up to 36" in diameter) including a large oak listed in the 2010 periodic inspection along the land side of the levee toe. There are also heavy brush and a fence engulfed in brush. Station 518+00 to 600+00
	**Inspect ID:** SAUC_2011_a_0033 **Title:** USACE_CENWP_SAUC_2011_a_0033_1.jpg **Caption:** View of old slump or erosion (200 feet long, max depth 2-3 feet, average depth 1.5 feet) near the riverward toe of the levee at Station 538+00

	**Inspect ID:** SAUC_2011_a_0035 **Title:** USACE_CENWP_SAUC_2011_a_0035_1.jpg **Caption:** View of fence with heavy brush along the river side levee slope.There are scattered medium-sized to large diameter deciduous trees in the brush. Station 540+00 to 557+00
	**Inspect ID:** SAUC_2011_a_0036 **Title:** USACE_CENWP_SAUC_2011_a_0036_1.jpg **Caption:** View of cattle caused cut in the riverward slope of the levee. Station 540+00 to 562+00

	**Inspect ID:** SAUC_2011_a_0037 **Title:** USACE_CENWP_SAUC_2011_a_0037_1.jpg **Caption:** View of large cotton wood trees at river side of the levee. Station 541+00
	**Inspect ID:** SAUC_2011_a_0045 **Title:** USACE_CENWP_SAUC_2011_a_0045_1.jpg **Caption:** View of access road from landside levee slope. Road may actually be top/transition from landward reinforcement fill. Station 594+00

	**Inspect ID:** SAUC_2011_a_0050 **Title:** USACE_CENWP_SAUC_2011_a_0050_1.jpg **Caption:** View of berry vines on riverward levee slope at Station 623+00.
	**Inspect ID:** SAUC_2011_a_0056 **Title:** USACE_CENWP_SAUC_2011_a_0056_1.jpg **Caption:** View of riverward erosion that has encroached into the 15 foot zone at one point at approximate station 657+00.

Flood Damage Reduction Segment / System Inspection Report

US Army Corps of Engineers®

Name of Segment / System: Sauvie - Columbia River Levee

Public Sponsor(s): Sauvie Island Drainage Improvement Company

Public Sponsor Representative: Tim Couch, District Manager

Sponsor Phone: 503-621-3397

Sponsor Email: tim@sidrainage.org

Corps of Engineers Inspector: Guy Fielding Date of Inspection: 09/28/2011

Inspection Report Prepared By: Dick Gamble Date Report Prepared: 11/16/2011

Internal Technical Review (for Periodic Inspections) By: Guy Fielding Date of ITR: 11/16/2011

Final Approved By: xxxxxxxx Date Approved: 11/16/2011

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.

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.

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.	SAUD_2011_a_0010: Two large fir and aspen trees and other smaller trees on land side of levee slope and toe.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0009: Large trees along toe of river side levee within 15 feet of toe.: Comply with vegetation management plan (U) SAUD_2011_a_0011: Landscaping bushes on land side levee slope.: Comply with vegetation maintenance plan. (U) SAUD_2011_a_0013: Several large trees (12-18" diam.) at fenceline on landward levee slope.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0019: Large arborvitae/cyprus trees on land side levee slope and toe.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0023: Vegetation on riverward side of levee and within 15 feet of toe prevents inspection.: Comply with vegetation maintenance plan (M) SAUD_2011_a_0025: Dense blackberry vines and brush with occasional trees.: Comply with vegetation management plan. (M) SAUD_2011_a_0026: Four trees on levee river side and one blue spruce on land side of levee.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0029: One tree (8-12" diam,) within 15 feet of riverward toe.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0030: Brush on land side levee slope, group of trees (3-12" diam.) on land side slope; two large deciduous trees (30-42" diam.) on levee toe.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0042: Small brush growth along land side slope, chainlink fence engulfed in vegetation, and gate (open) on crest.: Comply with vegetation maintenance plan (M) SAUD_2011_a_0054: One 12-14" diam. tree at land side levee toe; gate (on crest) and fence over levee slopes both land side and river side.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0058: Brush and fence on land side levee slope.: Comply with vegetation maintenance plan (M) SAUD_2011_a_0067: Black Walnut Trees adjacent to both riverward and landward toes. Trees are pending in Historic Register for oldest black walnuts in the USA. Riverward tree
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				is greater than 15ft from toe.: Develop management monitoring plan. (M) SAUD_2011_a_0074: Cottonwoods on riverward side. As of 2011 inspection trees have been removed and stumps ground. Roots have grown through levee, some suckers shootingfrom roots.: Comply with vegetation management plan. Monitor roots and re-growth. (M) SAUD_2011_a_0078: Five deciduous trees at land side levee toe.: Comply with vegetation maintenance plan. (U) SAUD_2011_a_0080: Two large fir trees at land side levee toe: Comply with vegetation maintenance plan (U) SAUD_2011_a_0082: One fir tree at land side levee toe: Comply with vegetation maintenance plan (U) SAUD_2011_a_0087: Landscape plantings near riverward toe.: Comply with vegetation management plan. (U) SAUD_2011_a_0072: Old and young trees along the river side toe of the levee. Large trees were cut in 2011. Some small trees remain.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0092: Blackberries are present on river side of levee. Area has been mowed but needs to be sprayed or will be overgrown soon.: Comply with vegetation maintenance plan (M) SAUD_2011_a_0093: Brush and small trees (6-24" diam.) on land side levee slope.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0101: One 18" deciduous tree and one 18" diam. fir tree at land at land side toe.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0100: Cluster of trees (6-36" diam.) located on river side slope.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0103: Twelve to fifteen (2-12" diam.) deciduous trees and one 54" diam deciduous tree at land side levee toe: Comply with vegetation maintenance plan (U) SAUD_2011_a_0109: 2011: cluster of small trees and one evergreen has been removed from the landward levee toe. One evergreen remains.: Comply with vegetation maintenance plan (U) SAUD_2011_a_0111: Two groups of trees are within 15 feet of the riverward toe (18-36" diam.).: Comply with vegetation maintenance plan. (U) SAUD_2011_a_0112: One large tree at landward toe of

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				levee.: Comply with vegetation maintenance plan (U)
2. Sod Cover	**A**	**A**	There is good coverage of sod over the levee.	
		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.	
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.	SAUD_2011_a_0001: Paved access road crossing over levee from land side to river side. Shown on CLW-99-42/6.: No action required. (A) SAUD_2011_a_0002: House on levee river side.: Review and permit per current guidelines (U) SAUD_2011_a_0003: Chain link fence over levee crest and on land side and river side slopes, fence along land side levee toe (70').: Review and permit per current guidelines (M) SAUD_2011_a_0004: Fence along toe of river side levee: Review and permit per current guidelines (M) SAUD_2011_a_0005: Gas tank with pad near river side levee toe: Review and permit per current guidelines (M) SAUD_2011_a_0006: Gate (on crest) and fence on land and river sides of levee slope.: Review and permit per current guidelines. (M) SAUD_2011_a_0007: Buried electrical cable crosses from land side to river side picnic area midway between house and upstream gate.: Review and permit per current guidelines (M) SAUD_2011_a_0008: House and deck on landward side.: Review and permit per current guidelines. (U) SAUD_2011_a_0012: Two sheds located within 15 feet of riverward toe.: Remove or review and permit per current guidelines. (M) SAUD_2011_a_0014: Gate on crest and fence down slopes.: Review and permit per current guidelines (M) SAUD_2011_a_0017: Wood fence along land side levee toe (~250" in length): Review and permit per current guidelines (M)
		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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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUD_2011_a_0015: Fence along riverward toe of levee, with some brush and trees along fenceline.: Review and permit per current guidelines (M) SAUD_2011_a_0018: Trailer with fence and shrubs on riverward slope of levee.: Review and permit per current guidelines. (M) SAUD_2011_a_0020: Gate on crest, fence down both slopes.: Review and permit per current guidelines (M) SAUD_2011_a_0021: House on land side within 15 feet of toe.: Review and permit per current guidelines (U) SAUD_2011_a_0022: Locked gate and fence crossing levee crest and both slopes.: Review and permit per current guidelines (M) SAUD_2011_a_0024: Power poles along land side levee toe: Review and permit per current guidelines (M) SAUD_2011_a_0027: Fiber optic cable crossing through levee.: Review and permit per current guidelines (M) SAUD_2011_a_0028: Petroleum pipeline crossing over levee not indicated on drawings.: Review and permit per recent guidelines. (U) SAUD_2011_a_0033: Power pole at riverward toe of levee.: Review and permit per current guidelines (M) SAUD_2011_a_0032: Natural gas pipeline through/under levee with access road over levee at same location. 2 - 16" high pressure gas lines indicated on CLW-99-42/6.: None (A) SAUD_2011_a_0037: Farm equipment and various farming supplies, including multiple fuel tanks, located at land side levee toe.: Review and permit per current guidelines (U) SAUD_2011_a_0039: Access road from land side slope of levee. Not indicated on drawings.: Review and permit per current guidelines. (M) SAUD_2011_a_0040: Small road ramps on land side and river side of levee. Not indicated on drawings.: Review and permit per current guidelines (M) SAUD_2011_a_0041: Fill materials (soil) placed on land side levee slope (approx. 180' along crest and 100' out from crest).: Review and permit per current guidelines (M) SAUD_2011_a_0043: Small pumphouse located at riverward toe of levee. Indicated on CLW-99-42/6.: No action required. (A) SAUD_2011_a_0044: Fence and gate (open) on land side levee slope with minor vegetation growth at toe.: Remove or

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				review and permit per current guidelines. (M) SAUD_2011_a_0045: Metal fence along land side levee toe: Remove or review and permit per current guidelines. (M) SAUD_2011_a_0046: House (technically a "barn") at land side levee toe.: Review and permit per current guidelines (U) SAUD_2011_a_0047: Access road on both sides of levee. Not indicated on drawings.: Review and permit per current guidelines. (M) SAUD_2011_a_0049: Metal fence along toe of land side levee.: Review and permit per current guidelines (M) SAUD_2011_a_0050: Navigation tower. Indicated on CLW-99-42/6: No action required. (A) SAUD_2011_a_0051: House on land side levee toe; bamboo adjacent to house at toe. Not indicated on drawings.: Review and permit per current guidelines. (U) SAUD_2011_a_0053: Wooden steps on river side of levee at house. Sod is growing over steps.: Remove or review and permit per current guidelines (M) SAUD_2011_a_0055: Fence along crest on river side: Review and permit per current guidelines (M) SAUD_2011_a_0059: Oil tank and minor brush on land side levee crest,: Review and permit per current guidelines (M) SAUD_2011_a_0060: Farm shed/pole barn at toe of levee. Not indicated on drawings.: Review and permit per current guidelines (M) SAUD_2011_a_0061: Access road from river side slope onto levee.: Review and permit per current guidelines. (M) SAUD_2011_a_0062: House, landscaping, and misc. possessions on landward side of levee. House appears to be on CLW-99-42/6.: District should identify any significant changes over the years that may require review. Review and permit changes per current guidelines. (M) SAUD_2011_a_0063: Fence and gate across levee.: Review and permit per current guidelines. (M) SAUD_2011_a_0064: Gate (on crest) and fence on down both slopes,: Remove or review and permit per current guidelines. Lock is rusted and can be difficult. (M) SAUD_2011_a_0065: House and fill on land side levee slope, and two storage sheds on land side levee toe. House may be shown on CLW-99-42/7.: District should identify any significant changes over the years that may require review. Review and permit changes per current guidelines. (U)

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				SAUD_2011_a_0068: Electrical line through levee without encroachment permit noted by 2009 inspection.. As of 2010 inspection the line was not visible: Remove or review and permit per current guidelines. (M) SAUD_2011_a_0069: Sod-covered access road on land side levee slope, No ruts or erosion.: Review and permit per current guidelines (M) SAUD_2011_a_0070: Soil fill on land side slope, one small 12" diam. tree on top of fill near landward shoulder location.: Review and permit per current guidelines (M) SAUD_2011_a_0071: Walkway from house to levee crest.: Review and permit per current guidelines (M) SAUD_2011_a_0073: Road ramps (two) cross over levee. Not indicated on drawings.: Review and permit per current guidelines (M) SAUD_2011_a_0075: Walkway from house to levee crest, and small storage shed at land side levee toe.: Review and permit per current guidelines (U) SAUD_2011_a_0077: Stairs to house at toe of levee, within 15 feet of toe: Review and permit per current guidelines (M) SAUD_2011_a_0081: Walkway from house to crest of levee, fence along landward levee toe, covered patio at riverward toe, water and power crosing levee.: Review and permit per current guidelines (M) SAUD_2011_a_0079: Access road used to get to river side of levee, No sod cover.: Review and permit per current guidelines (M) SAUD_2011_a_0083: Walkway on land side of levee; stairs on river side of levee; propoane tank at toe of land side levee; water line at walkway: Review and permit per current guidelines (U) SAUD_2011_a_0084: Shed into toe of river side slope; power pole at toe; 8" diam. tree at toe.: Remove or review and permit per current guidelines. (U) SAUD_2011_a_0085: Access road over levee, land side gravel-surfaced, no erosion, river side sod-covered, slight cutting into levee embankment on uphill side.: Review and permit per current guidelines. (M) SAUD_2011_a_0086: Walkway from house onto levee crest.: Review and permit per current guidelines (M) SAUD_2011_a_0088: Walkway onto levee crest, small trees at the land side levee toe on both sides of walkway.: Remove

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				or review and permit per current guidelines. Comply with vegetation management plan. (U) SAUD_2011_a_0089: Road ramp on land side and river side. Not indicated on drawings.: Review and permit per current guidelines (M) SAUD_2011_a_0094: Power pole at land side levee slope.: Review and permit per current guidelines. (M) SAUD_2011_a_0095: Irrigation pipe crosses over levee. Air breaker is visible on landward shoulder.: Review and permit per current guidelines (M) SAUD_2011_a_0096: Access road over levee, land side to river side, both sides are lightly graveled, no erosion.: Review and permit per current guidelines (M) SAUD_2011_a_0097: Locked gate with wooden 6"post.: Review and permit per current guidelines (M) SAUD_2011_a_0099: House and soil fill is part of design per CLW-99-42/7. Landscaping may not be in compliance with vegetation guidelines.: Comply with vegetation management plan. (A) SAUD_2011_a_0102: Ramp and road crossing top of levee and down both sides. Road is indicated on CLW-99-47/2: No action required. (A) SAUD_2011_a_0104: Storage shed at land side levee toe. Previous version of shed possible indicated on drawing CLW-99-42/7 as garage.: Review and permit per current guidelines. (M) SAUD_2011_a_0105: Power pole at land side toe of levee.: Review and permit per current guidelines. (M) SAUD_2011_a_0107: Locked gate and fence on the levee.: Review and permit per current guidelines (M) SAUD_2011_a_0113: Gate (on crest) and fences down boh slopes.: Remove or review and permit per current guidelines. (M) SAUD_2011_a_0108: Fence along land side levee toe: Remove or review and permit per current guidelines. (M)
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag	**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.	

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Closures) (A or U only)		**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	**M**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	SAUD_2011_a_0056: Over-steepened slope on river side (approx. 180' in length), slope angle up to 45 deg. in some areas, appears to be caused by farm animals: Investigate and repair as needed by filling and re-seeding. (M)
		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	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		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]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		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.	
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.	SAUD_2011_a_0110: 12' long 15" deep depression in land side and levee crest, apparant cause is surface disturbance by farm animals (cattle).: Investigate and repair, and prevent as needed. (U)
		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	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		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.	

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		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	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	SAUD_2011_a_0031: Mole holes and mounds on crest of levee.: Comply with animal burrow control program (M) SAUD_2011_a_0034: Animal burrows on land side levee slope.: Comply with animal burrow control program (M) SAUD_2011_a_0038: 2011: few burrows noted. 2010: Mole holes on levee crest (approx. 300" in length): Comply with animal burrow control program (M) SAUD_2011_a_0052: Mole activity on land side of levee: Comply with/elevate animal burrow control program (M) SAUD_2011_a_0066: Mole holes on land side slope.: Comply with / increase animal burrow control program. (M)
		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.	SAUD_2011_a_0106: This 36" freshwater inlet pipe is not used by drainage district and has been abandoned, No interior visual inspection has been conducted, Inlet and outlet are not visible.: Freshwater inlet should be operated and maintained per culvert requirements or it should be formally decommissioned by removal or backfilling. (U)
		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.	
		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 &	**M**	**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.	SAUD_2011_a_0036: Riprap approx. 24" size stone with small trees growing through it, 2-3' diam. trees were cut in

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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Bank Protection		**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.	2010, stumps remain. No displacement of rock noted.: Comply with vegetation maintenance plan (M)
		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.	
13. Revetments other than Riprap	**NA**	**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 segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**U**	**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	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		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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Levee Embankments

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

[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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	**Inspect ID:** SAUD_2011_a_0007 **Title:** USACE_CENWP_SAUD_2011_a_0007_1.jpg **Caption:** View of access plate for a buried electrical cable crossing of the levee at Station 328+00.
	**Inspect ID:** SAUD_2011_a_0010 **Title:** USACE_CENWP_SAUD_2011_a_0010_1.jpg **Caption:** View of two large fir and aspen trees and other smaller trees on the land side of the levee slope and toe at Station 330+00.

	**Inspect ID:** SAUD_2011_a_0009 **Title:** USACE_CENWP_SAUD_2011_a_0009_1.jpg **Caption:** View of large trees within 15 feet of the riverward toe of the levee at Station 327+00 to 335+00.
	**Inspect ID:** SAUD_2011_a_0011 **Title:** USACE_CENWP_SAUD_2011_a_0011_1.jpg **Caption:** View of landscaping bushes on the landward levee slope at Station 330+00.

	**Inspect ID:** SAUD_2011_a_0013 **Title:** USACE_CENWP_SAUD_2011_a_0013_1.jpg **Caption:** View of several large trees (12-18" diameter) on the landward levee slope along a fenceline at Station 331+00.
	**Inspect ID:** SAUD_2011_a_0017 **Title:** USACE_CENWP_SAUD_2011_a_0017_1.jpg **Caption:** View of 250 linear feet of wood fence along the landward side of the levee toe at Station 332+00.

	**Inspect ID:** SAUD_2011_a_0015 **Title:** USACE_CENWP_SAUD_2011_a_0015_1.jpg **Caption:** View of fence along the riverward toe of the levee with some brush and trees along the fence at Station 331+00 to 335+00.
	**Inspect ID:** SAUD_2011_a_0018 **Title:** USACE_CENWP_SAUD_2011_a_0018_1.jpg **Caption:** View of trailer with fence and shrubs on the riverward slope of the levee at Station 333+00.

	**Inspect ID:** SAUD_2011_a_0019 **Title:** USACE_CENWP_SAUD_2011_a_0019_1.jpg **Caption:** View of large arborvitae/cyprus trees on the landward levee slope and toe at Station 335+00.
	**Inspect ID:** SAUD_2011_a_0021 **Title:** USACE_CENWP_SAUD_2011_a_0021_1.jpg **Caption:** View of house on landward side of the levee located within 15 feet of the levee toe. Station 338+00.

	**Inspect ID:** SAUD_2011_a_0025 **Title:** USACE_CENWP_SAUD_2011_a_0025_1.jpg **Caption:** View of dense berry vines and brush with occasional trees on the landward side of the levee.
	**Inspect ID:** SAUD_2011_a_0026 **Title:** USACE_CENWP_SAUD_2011_a_0026_1.jpg **Caption:** View of a blue spruce tree on the land side of the levee. There are also four trees on the riverside of the levee at this location. Station 340+00.

	**Inspect ID:** SAUD_2011_a_0027 **Title:** USACE_CENWP_SAUD_2011_a_0027_1.jpg **Caption:** View of marker for a fiber optic crossing of the levee at Station 345+00.
	**Inspect ID:** SAUD_2011_a_0037 **Title:** USACE_CENWP_SAUD_2011_a_0037_1.jpg **Caption:** View of farm equipment and various farming supplies along the landward toe of the levee at Station 365+00 to 370+00.

	**Inspect ID:** SAUD_2011_a_0043 **Title:** USACE_CENWP_SAUD_2011_a_0043_1.jpg **Caption:** View of small pumphouse at the riverward toe of the levee at Station 378+00. The pumphouse is indicated on drawing CLW-99-42/6.
	**Inspect ID:** SAUD_2011_a_0046 **Title:** USACE_CENWP_SAUD_2011_a_0046_1.jpg **Caption:** View of house barn on the landward side of the levee at Station 387+00.

	**Inspect ID:** SAUD_2011_a_0051 **Title:** USACE_CENWP_SAUD_2011_a_0051_1.jpg **Caption:** View of house and bamboo on landward levee toe at Station391+00. House is not shown on drawings.
	**Inspect ID:** SAUD_2011_a_0054 **Title:** USACE_CENWP_SAUD_2011_a_0054_1.jpg **Caption:** View of one 12-14" diameter tree at land side levee toe; gate (on crest) and fence on both landside and riverside levee slopes. Station 391+50

	**Inspect ID:** SAUD_2011_a_0056 **Title:** USACE_CENWP_SAUD_2011_a_0056_1.jpg **Caption:** View of approximately 180 linear feet of over-steepened riverward levee slope at Station 395+00. The affected slope is up to 45 degrees in some areas and appears to be caused by farm animals
	**Inspect ID:** SAUD_2011_a_0065 **Title:** USACE_CENWP_SAUD_2011_a_0065_1.jpg **Caption:** View of house and fill on land side levee slope and two storage sheds on the landward levee toe. Station 400+00. The house may be shown on drawing CLW-99-42/7.

	**Inspect ID:** SAUD_2011_a_0074 **Title:** USACE_CENWP_SAUD_2011_a_0074_1.jpg **Caption:** View of a section of riverside levee where cottonwood trees have been removed and stumps ground. Roots have grown through levee embankment.
	**Inspect ID:** SAUD_2011_a_0078 **Title:** USACE_CENWP_SAUD_2011_a_0078_1.jpg **Caption:** View of five deciduous trees at the landward levee toe. Station 410+00.

	**Inspect ID:** SAUD_2011_a_0077 **Title:** USACE_CENWP_SAUD_2011_a_0077_1.jpg **Caption:** View of stairs to house at toe of levee that are within 15 feet of the landward levee toe. Station 410+00
	**Inspect ID:** SAUD_2011_a_0080 **Title:** USACE_CENWP_SAUD_2011_a_0080_1.jpg **Caption:** View of two large fir trees on the landward levee toe at Station 412+00.

	**Inspect ID:** SAUD_2011_a_0083 **Title:** USACE_CENWP_SAUD_2011_a_0083_1.jpg **Caption:** View of walkway and propane tank on the land side of the levee. There is a water line on the walkway and also stairs on the riverside of the levee at this location. Station 415+00
	**Inspect ID:** SAUD_2011_a_0084 **Title:** USACE_CENWP_SAUD_2011_a_0084_1.jpg **Caption:** View of shed, power pole, and 8"diameter tree at the riverward toe of the levee. Station 416+00

	**Inspect ID:** SAUD_2011_a_0088 **Title:** USACE_CENWP_SAUD_2011_a_0088_1.jpg **Caption:** View of walkway onto levee crest and small trees at the landward toe of the levee on both sidews of the walkway. Station418+00
	**Inspect ID:** SAUD_2011_a_0093 **Title:** USACE_CENWP_SAUD_2011_a_0093_1.jpg **Caption:** View of brush and small trees (6-24" diameter) on the landward levee slope at Station 424+50.

	**Inspect ID:** SAUD_2011_a_0095 **Title:** USACE_CENWP_SAUD_2011_a_0095_1.jpg **Caption:** View of air breaker to irrigation pipe crossing of the levee at Station 424+50.
	**Inspect ID:** SAUD_2011_a_0099 **Title:** USACE_CENWP_SAUD_2011_a_0099_1.jpg **Caption:** View of landward house and fill with landscaping that is shown on drawing CLW-99-42/7. Station 446+50

	**Inspect ID:** SAUD_2011_a_0101 **Title:** USACE_CENWP_SAUD_2011_a_0101_1.jpg **Caption:** View of one 18" diameter deciduous tree and one 18" diameter fir tree on landward levee toe at Station 447+00.
	**Inspect ID:** SAUD_2011_a_0106 **Title:** USACE_CENWP_SAUD_2011_a_0106_1.jpg **Caption:** View of abandoned 36" fresh water inlet at Station 453+00.

	**Inspect ID:** SAUD_2011_a_0109 **Title:** USACE_CENWP_SAUD_2011_a_0109_1.jpg **Caption:** View of a large evergreen tree that is within 15 feet of the landward toe of the levee. Small trees and two other evergeen trees noted at the site during the 2010 periodic inspection have been removed. Station 455+00.
	**Inspect ID:** SAUD_2011_a_0110 **Title:** USACE_CENWP_SAUD_2011_a_0110_1.jpg **Caption:** View of 12' long 15" deep cattle dusting hole on crest and land side of the levee at Station 457+00.

	**Inspect ID:** SAUD_2011_a_0112 **Title:** USACE_CENWP_SAUD_2011_a_0112_1.jpg **Caption:** View of one large tree on the landward toe of the levee at Station 458+00.

Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

MAP 6

MAP 5

MAP 4

MAP 7

MAP 3

MAP 2

Inspection Findings
- M
- U
- A
- M
- U

U.S. Army Corps of Engineers
Portland District

Sauvie Island
2011 Routine Inspection
Overview Map - 1 of 7

CENWP-EC-DC | B. Zabel | 30 November 2011 | Z:\Miscellaneous_Projects\NWP_Levee_Inventory\GDS\MXDs\ReedsportOR_2011.mxd

System: 5005000004
Sauvie Island

Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee

Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

Inspection Findings
- M
- U
- A
- M
- U

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System:
5005000004
Sauvie Island

Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee

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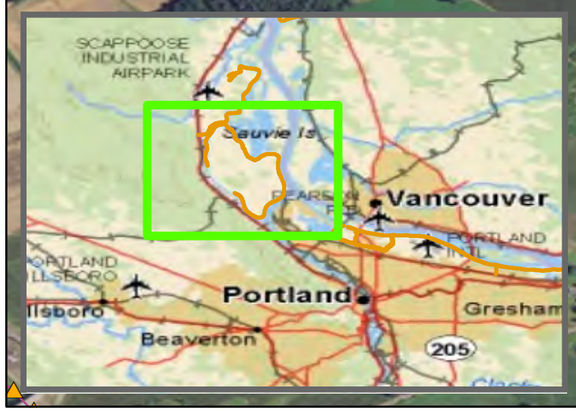
U.S. Army Corps of Engineers
Portland District

Sauvie Island
2011 Routine Inspection
Map - 2 of 7

CENWP-EC-DC B. Zabel 30 November 2011

Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

Inspection Findings
- M
- U
- A
- M
- U



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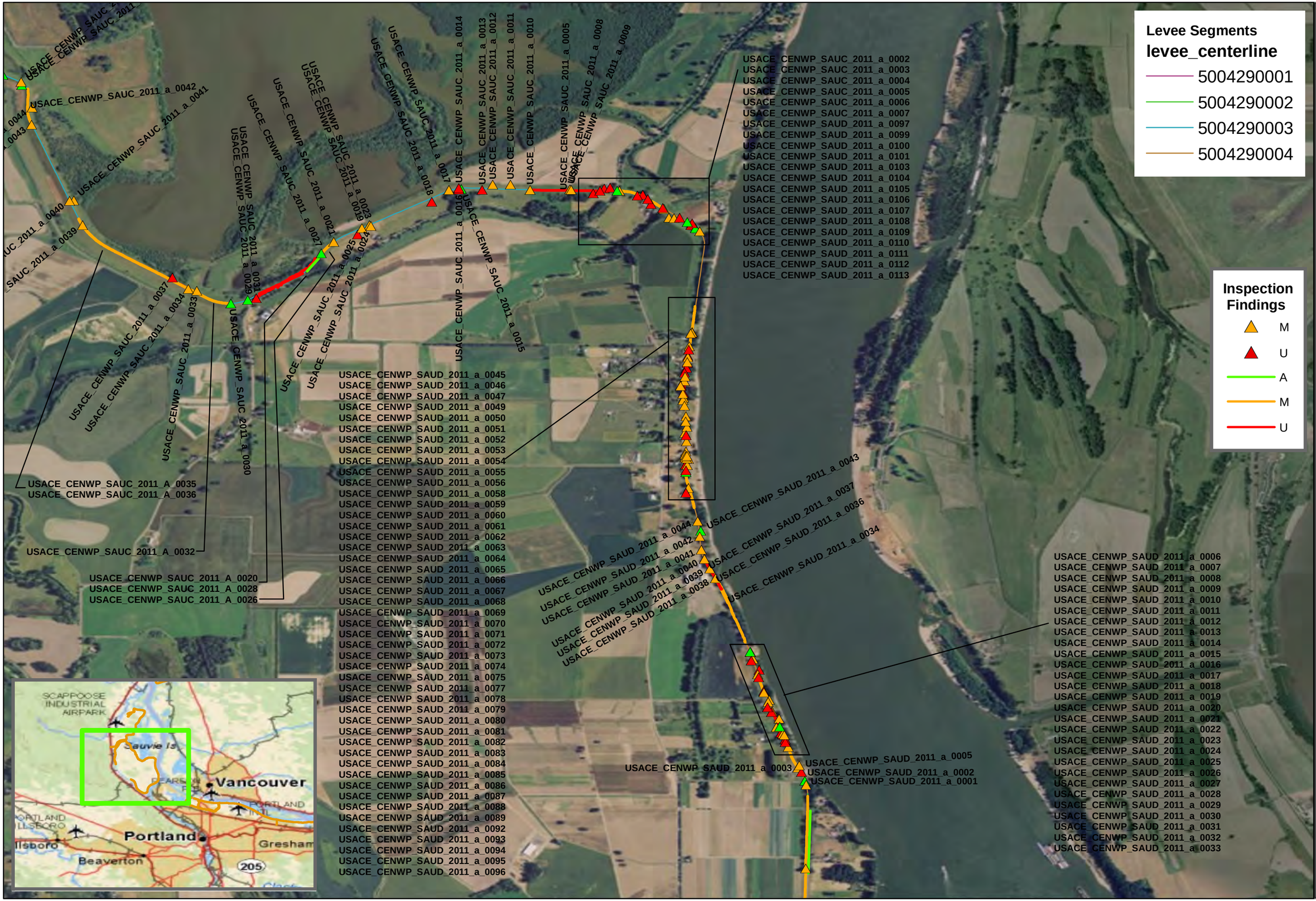
Portland District

Sauvie Island
2011 Routine Inspection
Map - 3 of 7

CENWP-EC-DC | B. Zabel | 30 November 2011 | Z:\Miscellaneous_Projects\NWP_Levee_Inventory\GDS\MXDs\Reedsport_2011.mxd

System: 5005000004 Sauvie Island

Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee


Levee Segments
levee_centerline
5004290001
5004290002
5004290003
5004290004
Inspection Findings
M
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USACE_CENWP_SAUD_2011_a_0002
USACE_CENWP_SAUD_2011_a_0001
SCAPPOOSE INDUSTRIAL AIRPARK
Sauvie Is.
Vancouver
PORTLAND INTL
Portland
Beaverton
Gresham
205
System:
5005000004
Sauvie Island
Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee
Sauvie Island
2011 Routine Inspection
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CENWP-EC-DC
B. Zabel
30 November 2011
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Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

Inspection Findings
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Sauvie Island
2011 Routine Inspection
Map - 5 of 7

System: 5005000004
Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee

U.S. Army Corps of Engineers
Portland District

CENWP-EC-DC | B. Zabel | 30 November 2011 | Z:\Miscellaneous_Projects\NWP_Levee_Inventory\GDS\MXDs\Reedsport_2011.mxd

Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

Inspection Findings
- M
- U
- A
- M
- U

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System:
5005000004
Sauvie Island

Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee

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Portland District

Sauvie Island
2011 Routine Inspection
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Levee Segments
levee_centerline
- 5004290001
- 5004290002
- 5004290003
- 5004290004

Inspection Findings
- M
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- A
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Segment(s): 5004290001 - Multnomah Channel Levee
5004290002 - Willamette Levee
5004290003 - Stergeon Lake Levee
5004290004 - Columbia River Levee

System: 500500000

Sauvie Island
Sauvie Island
2011 Routine Inspection
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