

APPENDIX E
INSPECTION CHECKLIST (SPREADSHEETS)

APPENDIX E

Inspection Checklist Spreadsheet Index

Inspection notes: During the Dallas Floodway Project 3-day inspection, field notes were taken along with approximately 100 structurally-related photos and 500 geotechnical-related photos referenced to GPS coordinates and tracking paths. The spreadsheets were developed from field observations and notes, engineering judgment, GPS, and a review of the photos taken at the features inspected. The Dallas Floodway Project is composed of four flood damage reduction systems: East Levee, West Levee, Rochester Levee, and CWWTP Levee. Each system consists of several features. Spreadsheets (systems) and tabs (features) for each spreadsheet with corresponding acronyms are identified below:

1. **East Levee & Channel Spreadsheet**

Tabs: Report East Levee & Channel

- Pre-Inspection East Levee & Channel
- Instructions
- General Items East Levee & Channel
- Supplemental Data East Levee & Channel
- East Levee (EL)
- East Interior Drainage (EID)
- East Floodwall (EF)
- Channels (C)
- Belleview Pressure Conduit (BPC)
- Able Pump Station (APS)
- Baker Pump Station - Old & New Baker (BPS)
- Dallas Branch Pressure Conduit (DBP)
- Woodall Rodgers Pressure Outfall (WRP)
- Turtle Creek Pressure Conduit (TCP)
- Hampton Road Pump Station - Old & New (HRP)
- Elm Fork Sluice (EFS)
- Emergency Control Structure (ECS)
- Channels

2. **West Levee Spreadsheet**

Tabs: Report West Levee

- Pre-Inspection West Levee
- Instructions

General Items West Levee
Supplemental Data West Levee
West Levee (WL)
West Interior Drainage (WID)
Charlie Pump Station (CPS)
Delta Pump Station (DPS)
Lake Cliff Pressure Conduit (LCP)
Coombs Creek Pressure Diversion (CCP)
Little Coombs Creek Conduit (LCC)
Pavaho Pump Station (PPS)
Eagle Ford Sluice (EFS)

3. Rochester Levee Spreadsheet

Tabs: Report Rochester Levee
Pre-Inspection Rochester Levee
Instructions
General Items Rochester Levee
Supplemental Data Rochester Levee
Rochester Levee (RL)
Rochester Interior Drainage (RID)
Rochester Floodwalls (RF)
Rochester Pump Station (RPS)

4. CWWTP Levee Spreadsheet

Tabs: Report CWWTP Levee
Pre-Inspection CWWTP Levee
Instructions
General Items CWWTP Levee
Supplemental Data CWWTP Levee
CWWTP Levee (CWWTPL)
CWWTP Interior Drainage (CWWTPID)
CWWTP Pump Station (CWWTPPS)



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Flood Damage Reduction System Inspection Report

Name of System: Dallas Floodway East Levee and Channel, Trinity River, Texas

Public Sponsor(s): City of Dallas Flood Control District

Public Sponsor Representative: David F. Garcia

Sponsor Phone: 214-671-0322

Sponsor Email: david.garcia@dallascityhall.com

Corps of Engineers Inspector: J. Hernández, S. Chen, A. Branch, L. Perrin,
K. Ley, D. Wilson Date of Inspection: 3-5 December 2007

Inspection Report Prepared By: J.Hernández, A.Branch, S.Chen Date Report Prepared: 31 March 2009

Internal Technical Review (for Periodic Inspections) By: _____ Date of ITR: _____

Final Approval By: _____ Date Approved: _____

Type of Inspection: Initial Eligibility Inspection
 Continuing Eligibility Inspection (Routine)
 Continuing Eligibility Inspection (Periodic)

Overall System Rating: Acceptable
 Minimally Acceptable
 Unacceptable

Contents of this Report: Instructions
 Initial Eligibility Inspection
 General Items for All Flood Control Works
 Levee Embankments
 Concrete Floodwalls
 Sheet Pile and Concrete I-walls
 Interior Drainage System
 Pump Stations

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

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Flood Damage Reduction System Public Sponsor Pre-Inspection Report

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 system maintenance program.

<p>1. Levee system and district: (name of the system and levee district)</p> <p>Dallas Floodway East Levee and Channel, Trinity River, Texas / City of Dallas Flood Control District</p>
<p>2. Reporting period: (month/day/year to month/day/year)</p> <p>October 12, 2002 to December 5, 2007</p>
<p>3. Summary of maintenance required by last inspection report:</p> <p>(1) Continue silt, debris and trash removal, and vegetation control, monitor the project for problems. (2) Survey crest elevation (various reaches of the levee crests are below design grade). (3) Repair skin slides. (4) Remove trees along the channel, banks, and slopes. (5) Pump Stations - provide space between bridge girders/deck and the concrete abutment to allow for expansion. (6) Remove abandoned Santa Fe Railroad bridge (piers catch flood debris). (7) Monitor wall movements at the Baker and Hampton pumping plant facilities. (8) Reconstruct fiber optic cable crossings.</p>
<p>4. Summary of maintenance performed this reporting period:</p> <p>(1) Flood Control District and City personnel surveyed the East and West Levees in 2003 (the East Levee from Stations 355+00 to 625+77). Plans are on-going to address the deficiencies of the levee height through the Trinity River Corridor Project. Levee surveys continue through third party inspectors in conjunction with the existing and future bridge construction, Trinity River Relocations, and the Trinity River Corridor Project. (2) Flood Control District has repaired 20 slides since the last PI. (3) The District has removed "volunteer" vegetation as necessary from within the floodway. (3) The removal of the Old Santa Fe Railroad Bridge is under evaluation by a third-party engineering consultant as part of the Trinity River Corridor Project. The bridge will be removed or modified upon design completion and recommendations by the consultant. (4) Minor repairs were completed at the Hampton Pump Station in 2005. (5) Flood Control District personnel have rebuilt the fiber optic cable crossings. However, the covered fill is no longer at the required slope of 1V:10H. Additional work will be necessary and will be completed by summer 2008. See Appendix I for additional summary of the maintenance performed this reporting period.</p>
<p>5. Summary of maintenance planned next reporting period:</p> <p>See Appendix I for summary of maintenance planned for next reporting period.</p>
<p>6. Summary of changes to system since last inspection:</p>

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Current major construction on the floodway consists of the Hampton/Inwood Bridge and the Woodall Rogers Bridge Extension. See Appendix I for additional summary of changes to the system since the last inspection.

7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Serious issues found requiring the assistance of the CORPs are structural encroachments on the levee crest, slopes, toes, and within 50 feet of the levee toe. The larger structures were commonly bridge crossings, bridge piers, power line towers, power poles, and large lines running under the levee. These encroachments will require further discussion between the Corps and the Flood Control District to determine appropriate mitigation to correct these unacceptable ratings. Cracking on the levee will also require further discussion between the Corps and the Flood Control District to determine appropriate mitigation.

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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
David F. Garcia	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0322	david.garcia@dallascityhall.com
Marie Marroquin	City of Dallas	2710 Municipal St., Dallas, TX. 75215	217-671-0808	marie.marroquin@dallascityhall.com
Don Lawnence	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6523	don.lawnence@dallascityhall.com
Frank D. Peebul	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-7124	frank.peebul@dallascityhall.com
Mike Johnson	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0333	mike.johnson@dallascityhall.com
Bier Rios	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6528	bier.rios@dallascityhall.com
Kelly High	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-4491	kelly.high@dallascityhall.com

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General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that

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 t

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of on	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 stati

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 r

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 Eli

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

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

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as

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

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 previousl	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 r
- 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 sy

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 Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Information Requested.
	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	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.	Inspected East floodwall stoplogs and sand stockpile. Additional information requested.
	M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	Information Requested.
	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

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Flood Damage Reduction 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 System:	Dallas Floodway East Levee and Channel		
Sponsor:	City of Dallas Flood Control District		
Location:	City of Dallas		
River Basin:	Trinity River		
Project Description:	11.7 miles of levee (East Levee), structures, and channel.		
Authority that Project was Constructed Under:	River and Harbor Act approved 2 Mar. 1945 (PL- 79-14) (HD 403/77/1), River and Harbor Act approved 17 May 1980 (PL 81-516) HD 242/81/1		
Date of Construction:	1953 to 1959		
Approximate Annual Maintenance Costs:			
Construction:	<input checked="" type="checkbox"/> Federally Constructed	<input type="checkbox"/> Non-Federally Constructed	
Maintenance:	<input type="checkbox"/> Federally Maintained	<input checked="" type="checkbox"/> Non-Federally Maintained	
National Flood Insurance Program:			
a. Is the project currently in the NFIP?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
b. If in the NFIP, Date of Certification (per 44 CFR 65.10):	2006		
Datum Information:			
a. Datum used for the design and construction of this project is:	NGVD29		
b. Current recommended datum for this project is:	NGVD88		
c. Has the project been converted to the current recommended datum?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Levee Embankment Data:			Protected Features (For use in preparing estimates and PIRs):
a. Levee Designed Gage Function Reading/Station:	Trinity River at Dallas 8057000		a. Total acres protected:
b. Level of Protection Provided:	SPF		b. Total agricultural production acres protected:
c. Average Height of Levee:	Average H = 28 feet		c. Towns:
d. Average Crown Width:	Average W = 16 feet		d. Businesses:
e. Average Side Slope:	River S = 3H:1V, Land S = 3H:1V or 4H:1V		e. Residences:
			f. Roads:
			g. Utilities:
			h. Barns:
			i. Machine Sheds:
			j. Outbuildings:
			k. Irrigation Systems:
			l. Grain Bins:
			m. Other Facilities:

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East Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee 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 50 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.	Sta. 147+70 had tree growing on the river side levee toe (U). Trees within 50 feet of levee toes near Sta. 474+, 524+25, and HWY 30 (U). A survey of additional areas where trees were within 50 feet of levee toes needs to be conducted in the future (Observation). Sta. 54+95 and 260+90 had bushes growing at the base of power line towers off the landside levee toes (M). See Plate D-4, Photo EL 1.
		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.	
2. Sod Cover	M	A	There is good coverage of sod over the levee.	Johnson grass growth was wide spread over entire project. The rapid growth would hinder inspection and cover seepage (M). Localized bare areas along the levee was more susceptible to cracking and erosion (Observed).
		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.	

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

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.

East Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
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.	Approximately 18 bridges crossed over the levee (including DART Bridge), many with piers in the levee crest or slopes (U). See Plate D-1, Photo EL 3b. Sta. 20+00 to 81+00 had electric power towers on the landside levee lower slopes between DART & I-35 bridges (U). See Plate D-4, Photo EL 3a. Sta. 237+50, 320+ to 364+, and 612+ had electric power towers/poles on the landside levee toe (U). Sta. 515+70 had electric power poles on the riverside levee toe (U). Sta. 147+40 had construction stockpile on crest of levee (U) and an unauthorized encroachment for construction of a jail annex that includes a basement adjacent to the landside levee toe had damaged the levee and removed material from the foundation adjacent to the levee toe (U). See Plate D-1, Photo EL 3c. Hampton Bridge Sta. 292+91 had 5 foot void under the land side bridge slope paving (U). See Plate D-2, Photo EL 3d. Highway 183 Bridge Sta. 546+30 had a void under the pier support beam on the river side levee crest (U). See Plate D-2, Photo EL 3e. DART Bridge Sta. 13+50 to 22+00 had bridge piers in the levee crest (U). See Plate D-3, Photo EL 3f. I-35 North
		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.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	U	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.	Seepage under the stop logs through the RxR ballast expected (U). See EF 3.
		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 system.	
5. Slope Stability	M	A No slides, sloughs, tension cracking, slope depressions, or bulges are present.	Sta. 480+20 & 563+40 - Repaired channel side slide (bulging observed) (M). Sta. 551+50 - Repaired channel side slope slide (1" wide cracks on landside crest edge) (M). Sta. 54+95 - Repaired land side slide (Observed). Sta. 320+00, 515+75, 520+00 & 524+25 to 530+75 - Repaired channel side slides (Observed). Sta. 175+70 - Bench on the levee on the channel side mid-slope (Observed).
		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.	

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East Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

6. Erosion/ Bank Caving	U	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	DART Bridge Sta. 13+50 to 22+00 had erosion around bridge piers on the landside crest of the levee which resulted from rain runoff from the bridge. This reduced the levee crest width for thru seepage (U). Filter fabric and 12" stone protection was placed on the north end of each pier, but erosion continued causing gullies on the land side levee slopes. See Plate D-3, Photo EL 6. Station 25+00 had erosion gully (30'L x 4'W x 3'D) in landside levee toe ditch (M). TRE Railroad Bridge Sta. 473+90 had 2 erosion gullies (20'L x 2'W x 1'D) on the river side slope (M). Sylvan Ave Bridge Sta. 225+00 had erosion gully (12'L x 3'W x 1'D) on slope under bridge (M). Highway I-30 Bridge Sta. 118+30 had multiple large erosion gullies on landside of levee slopes under bridge (30'L x 6'W x 5'D each) (M). Jefferson Bridge Sta. 97+50 had minor erosion on levee slope (M).
		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 ¹	U	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	Crest survey in 2003 indicated 47% of the levee crest was below the SPF elevation (U).
		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	M	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.	Hampton Bridge Sta. 292+91 had 2" displacement on landside bridge slope paving (M). Highway 183 Bridge Sta. 546+30 had 6 feet diameter depression/erosion on the levee slope (M). Railroad Bridge Sta. 147+70 had depression on the slope below the bridge (M). See DEL 3.
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	U*	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	*No cracking observed during inspection. Cracking due to desiccation is a known climatic condition. Extensive cracking occurs seasonally and over extended dry periods. The usual condition of the levees was to be riddled with desiccation cracks. Some cracks were measured in September of 2008 and found to be up to 4 feet in depth (U).
		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.	

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

¹ Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.



East Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
10. Animal Control	A	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	No animal control program (noted).
		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 ¹ (This item includes both concrete and corrugated metal pipes.)	M	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.	See PPA 17, TCP 17 (M), and BPC 17.
		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.	

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

¹ 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

East Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	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.	Continental Ave Bridge Sta. 163+60 had stone protection moving down slope (M). Homeless people were removing stone riprap and using it to construct shelters (Observation). Riprap not widely used in the floodway (Observation).
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	See EL 8.
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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 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 system.	
15. Seepage	M	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Sta. 473+90 - Drainage ditch adjacent to the landside levee toe and in the sump areas was the standard project condition. This would obscure seepage that develops during a flood event (M). See EF 9 (M).
		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.	

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

East 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	M	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.	Dallas Branch Pressure Conduit had deposition of 70% on the right side of the discharge channel (M). Woodall Rogers Outfall had deposition of 75% on the right side of the discharge channel (M). Turtle Creek Pressure Sewer had light debris in the intake, and deposition (8'L x 3'W) in the discharge channel (Observed).
		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	U	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.	6 trees were growing in the upper section of a gabion retaining wall on the left side of the channel to the Turtle Creek Pressure Sewer intake (U). See Plate D-8, Photo EID 2. Turtle Creek Pressure Sewer had a tree growing next to the right side box culvert at the intake (U). Trash in intake channels of some pump stations (M). Trees were growing around levee toe sumps (Observed).
		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	M	A	No trash, debris, structures, or other obstructions present within the ponding areas. Sediment deposits do not exceed 10% of capacity.	Trash in levee toe ditch (M).
		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.	ATVs gained unauthorized access (Observed).
		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.	

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

East Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces (Such as gate wells, outfalls, intakes, or culverts)	M	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.	Turtle Creek Pressure Conduit had 4 locations where exposed steel reinforcement in ceiling of conduit were corroding and two locations where steel objects were protruding from the ceiling and left wall of the conduit (also, sweating forming on ceiling of conduit around transition where water level in floor of conduit deepens was observed) (M). See TCP 17 (M).
		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 ¹ (Such as gate wells, outfalls, intakes, or culverts)	U	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	Turtle Creek Pressure Sewer Sta. 194+13 had left discharge failing wingwall displaced 3 inches with erosion behind it (5'W x 4'L x 3'D) the offset between the headwall and wing wall appeared to be getting worse over time (U) (See Plate D-8, Photo EID 6a.), and a second wall joint had separated by 1 to 2 inches and moved channel ward by 1/4 inch relative wingwall (M). See Plate D-9, Photo EID 6b.
		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 ² (Such as culverts, inlet and discharge structures, or gatewells.)	U	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	Drainage chute at right side of trash rack for Small Pump House "A" was failing (U). See Plate D-6, Photo EID 7a. Pump Station B had erosion (4'W x 35'L) on the slope above the discharge chute, erosion (15'W x 35'L) on the left slope and erosion (50'W x 80'L) on the right side of the discharge channel (M). See Plate D-7, Photo EID 7b. Turtle Creek Pressure Sewer had erosion on both the right and left slope just above the corners of the discharge chute (M). Erosion had created a 25 foot diameter pond just upstream of the Elm Fork Sluice discharge channel (Observed)
		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 stable 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.	

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

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

East Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Monolith Joints	U	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.	Some seals are out at joints in the floodwall near the DART railroad bridge (U). See Plate D-3, Photo EID 8.
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/Discharge Pipes ¹	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	Condition of pipes, culverts or conduits has not been verified by television camera video taping or visual inspection within the past 5 years, and reports were not available for review (U). All pipes, culverts or conduits should be adequately inspected (as previously described) by CoD and results should be provided to SWF. Also see APS 17, TCP 17 (M), and BPC 17.
		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.	

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¹ 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

East Interior Drainage System

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

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
10. Sluice / Slide Gates ¹	U	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.	See PPA 18 (U) and DBP 18 (M).
		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.	
11. Flap Gates/ Flap Valves/ Pinch Valves ²	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See PPB 19, WRP 19, and HRP 19.
		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)	A	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	U	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See PPA 18 (U), DBP 21 (U), HRP 19 (M), TCP 21 (M), HRP 21 (M), BPC 21 (M), PPB 19 (M), and WRP 19 (M).
		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.	

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¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

East Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
14. Riprap Revetments of Inlet/ Discharge Areas	U	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	Riprap displaced from slopes of discharge chute to the bottom of the channel at New Hampton exposing bedding (U), and slides on the right and left slopes downstream of this displaced riprap (U). See Plate D-10, Photo EID 14. See EL 12 (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 system, or riprap is discussed in another section.	
15. Revetments other than Riprap	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.	See EL 8.
		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 system.	

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FOR OFFICIAL USE ONLY

East Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
1. Unwanted Vegetation Growth ¹	M	A	A grass-only or paved zone is maintained on both sides of the floodwall, free of all trees, brush, and undesirable weeds. The vegetation-free zone extends 50 feet from both the land and riverside of the floodwall, at ground-level, to the centerline of the tree. Additionally, an 8-foot root-free zone is maintained around the entire structure, including the floodwall toe, heel, and any toe-drains. If the floodwall 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 and/or Corps policy for regional vegetation variance.	Bushes grew along the north side of the flood wall (M).
		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 floodwall.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above. This vegetation threatens the operation or integrity of the floodwall and must be removed.	
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 floodwall.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the floodwall.	
3. Closure Structures (Stop Log Closures and Gates) (A or U only)	U	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.	2 stoplog gate structure were compromised by unauthorized removal of the sill (U). See Plate D-4, Photo ELF 3. The location for placement of center post for the railroad stop log were not visible (U). No record of trial erections completed (U). Sta. 13+50 had stoplog sand pile for sealing overgrown with weeds and brush (Observed).
		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 system.	

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¹ 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.

East Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

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

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

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

East Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Monolith Joints	U	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.
		N/A	There are no monolith joints in the floodwall.
8. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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 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 system.
9. 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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Bellevue Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equi	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Structure	A	A	The building is in good structural condition with no major foundation settlement problems. The roof is not leaking, intake & exhaust louvers are clear of debris, fans are operational, etc.	
		M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact 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 operations.	
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.	

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

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

Belleview Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
17. Intake and Discharge Pipelines	A	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.	Damage to concrete around perimeter of outlet (Observed).
		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 ¹		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.	Not Inspected.
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²		A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected.
		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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
		M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
		U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
		N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Slight rust on upper bridge girder (M).
		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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Able Pump Station

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	Intakes and buildings appeared to be in fair condition and fully operational. There had been movement of masonry walls in the large pump house away from the concrete columns (M). Exterior brick masonry was cracking near a corner of the pump house (M). There was a void under the grouted slope on the right side of the trash rack at the old pump house (M). There was a misaligned joint in earth retaining wall at the outlet and a large concrete spall in upstream side of control tower (M). The bearing for the service bridge at the outlet works was cracked and settlement of the abutment at the levee end had resulted in binding of the anchor bolts (M).
	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.	

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

Able Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
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.	Chain link fence with razor wire at the top is in good condition (Observed).
		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	A	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.	Not Inspected.
		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.	Not Inspected.
		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	M	A	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	Trash in the sump ponding area next to the trash racks (M).
		M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
		U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	A	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.	

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

Able Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
11. Non-Mechanical Trash Racks	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.	
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	M	Megger testing not conducted within the past year. If megger tests on pump motors indicate that insulation resistance is below the manufacturer's or industry standard, but the resistance can be corrected with proper application of heat, this is minimally acceptable. (The application of heat does not relate to critical power cables.)	
	U	Megger tests not conducted within past two years, or tests indicate that insulation resistance is low enough that the equipment will not be able to meet design standards of operation; or evidence of arcing or shorting is detected visually.	

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¹ 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,

Able Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
16. Enclosures, Panels, Conduit and Ducts		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.	Not Inspected.
		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	U	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.	There was a hole (12"W x 24"L) next to the concrete slab where water bubbles up through ground above the box conduits from the old pump house during times of high water check as soon as possible (U). See Plate D-6, Photo APS 17.
		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 ¹	U	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.	Left gate in the tower is either loose or out of alignment. Either the guide is broken or the gate was raised too high and came off the guide (U). Most likely the guide has rusted and broke. Floodway personnel will have to construct a cofferdam in the outlet trench to effect repairs.
		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.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²		A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected.
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no gates on discharge lines from pump station.	

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¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Able Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
20. Cranes ¹		A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
		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)	U	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See PPA 18 (U).
		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.	

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

FOR OFFICIAL USE ONLY

Baker Pump Station (Old & New)

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	Service bridge tilted relative to bridge abutment and girder up tight against abutment (M). Spall under bridge support at the control structure (M). Stairs at New Pump House "B" shifted as result of being struck by bobcat (M). Cracking and spalling of the concrete panels at both the right and left side of the trash rack at New Pump House B (M). There was a major fracture in the retaining wall at stairs behind Old Pump House B (M). The fracture had been sealed but either the sealant had shrunk or further separation of the concrete had occurred and caused the sealant to fail. Lower concrete wall panel right of trash racks displaced 1 inch inward, possibly from construction (Observed).
	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.	

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

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

Baker Pump Station (Old & New)

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
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	A	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.
		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.
		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	M	A	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.
		M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.
		U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.
10. Mechanical Operating Trash Rakes ¹	A	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.

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

Baker Pump Station (Old & New)

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
11. Non-Mechanical Trash Racks	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.	
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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.	

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

¹ 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,

Baker Pump Station (Old & New)

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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	A	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.	
		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 ¹	A	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.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Some corrosion on 4 flap gates (observed).
		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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Baker Pump Station (Old & New)

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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.	
		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)	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Broken hand rails at the top of the stairs behind the building (M). See PPB 19 (M).
		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.	

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

FOR OFFICIAL USE ONLY

Dallas Branch Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Structure	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.	There was a 3 foot long crack in the right wingwall of the discharge chute with seepage flowing slowly from the bottom 5 inches of the crack (M). There was a 12 inch erosion depression on the down slope side of the service bridge abutment and a 6 inch erosion depression on the right side of the control structure on the levee (M).
		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 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 operations.	
6. Fencing and Gates ¹		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.	Not Inspected.
		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.	

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

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

Dallas Branch Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Replacement of rusted bolts at the base of the stem for the right gate operator appeared to have caused cracking in the concrete deck. The crack allows freeze/thaw damage (M).
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
	M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
	U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
	N/A	There are no gates on discharge lines from pump station.	
20. Cranes ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	At the Dallas Branch gate tower, the bottom of two posts for the handrail at the left side of the operating deck had completely rusted out - Safety issue (U). See Plate D-7, Photo DBP 21.
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Woodall Rodgers Pressure Outfall

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Structure	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.	The concrete was cracked at the corners of the wing walls at the discharge basin (M). 4 foot tall vegetation was growing at the base of the control structure (Observed).
		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 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 operations.	
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.	

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

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

Woodall Rogers Pressure Outfall

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Corrosion on both flap gates (observed).
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See WRP 19 (M).
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Turtle Creek Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Structure	U	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.	See EID 6 (U). Erosion (6"W x 6'L x 6"D) was found on the right side of the control structure (M). See Plate D-9, Photo TCP 5. The service bridge abutment has settled (M). A homeless shelter was under the bridge at the bridge abutment (Observed).
		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 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 operations.	
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.	

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

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

Turtle Creek Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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.	See EID 5 (M). There is moderate seepage at some of the joints (M).
		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 ¹	A	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.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	N/A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or	
		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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable	
		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)	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Corrosion on the lower part of the intake trash rack at entrance to conduit (M).
		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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Hampton Road Pump Station

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	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.	Information Requested.	
	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	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	Information Requested.	
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.	
	M	No safety compliance inspection reports are available for review.		
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.	
	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 concrete slabs adjacent to the new structure have settled 6" on both sides of the structure (M). The vertical joint at the corner in the left wing wall at the intake for the Old Hampton Pump Station had a 2 inch separation and the left wall has tilted toward the channel by 1/2 inch at the joint (M). Significant bowing of headwall at outlet for Old Hampton Pump House (M). Metal plates at the end of bridge deck and bridge abutment were butting up against each other (M). Erosion gully (2'W x 10'L x 18"D) from run-off from the parking lot above the left intake wing wall was found (M). The fiberglass dome supporting the manhole cover over the low flow for the Old Hampton Pump House had failed (M).	
		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.

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

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

Hampton Road Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
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	A	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 pr
		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 ex
		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.
		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.
		M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.
		U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.
10. Mechanical Operating Trash Rakes ¹	A	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.

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

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

Hampton Road Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
11. Non-Mechanical Trash Racks	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.	
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	
	U	Megger tests not conducted within past two years, or tests indicate that insulation resistance is low enough that the equipment will not be able to meet design standards of operation; or evidence of arcing or shorting is detected visually.	

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¹ 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,

Hampton Road Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
16. Enclosures, Panels, Conduit and Ducts	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.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Corrosion on flap gate (observed). See Plate D-11, Photo HRP 13.
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Hampton Road Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See HRP 19 (M).
		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.	

FOR OFFICIAL USE ONLY

Elm Fork Sluice

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Not in service.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equi	Not in service.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Not in service.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to station operator and maintenance personnel.	
5. Structure	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.	Exposed steel reinforcement at bridge support on control structure (M). There was an 8-inch erosion depression on the down slope side of the service bridge abutment on the levee (M).
		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 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 operations.	
6. Fencing and Gates ¹		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.	Not Inspected.
		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.	

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

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

Elm Fork Sluice

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
17. Intake and Discharge Pipelines	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.	Not Inspected.	
	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 ¹	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.	Not Inspected.	
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.		
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.		
	N/A	There are no sluice/ slide gates.		
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected.	
	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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	N/A	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	N/A	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	A	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
	A	M	Corrosion seen on metallic parts appears to be maintainable.	
	A	U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
	A	N/A	There are no other significant metallic items.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Emergency Control Structure

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records	A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
	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. Station Operations and Maintenance Equipment Manuals	A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
	M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to station operator and maintenance personnel.	
5. Structure	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.	The service bridge was tight against both the bridge abutment and control structure (M). There was a 8-inch erosion depression on the down slope side of the control structure and service bridge abutment on the levee (M).
	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 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 operations.	
6. Fencing and Gates ¹	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.	Not Inspected.
	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.	

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

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

Emergency Control Structure

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
17. Intake and Discharge Pipelines	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.	Not Inspected.	
	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 ¹	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.	Not Inspected.	
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.		
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.		
	N/A	There are no sluice/ slide gates.		
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected.	
	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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	M	Cranes have not been inspected or operationally tested within the past year, or there are visible		
	U	Cranes are not operational, and this may prevent the pump station from functioning as required.		
	N/A	There are no cranes.		
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	A	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.		

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Flood Damage Reduction Channels

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	U	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	The abandoned old Santa Fe Railroad Bridge obstructed flow and caught debris (U). See Plate D-19, Photo EFD 1. Trees/vegetation grew on both ends of the Santa Fe Railroad Bridge, in the flood plain and channel slopes (M). Debris caught in Continental Bridge piers (M).
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling ¹ (sediment deposition)	U	A	No shoaling or minor, non-vegetated shoaling is present.	Shoaling with established vegetation caused the diversion of the channel into the levee at Belleview Pressure Conduit (U). See Plate D-5, Photos EFD 2a and EFD 2b.
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	M	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	East Levee Sta. 157+50 & West Levee Sta. 141+80 had construction equipment in the flood plain (M). East Levee Sta. 380+00 had 700' long ponded flood plain area and ruts from ATVs (M). East Levee Sta. 568+70 has 100' diameter ponded flood plain area and ruts from ATVs (M). Hampton/Inwood Road Bridge Sta. 292+91 had concrete debris pile 10' dia. in channel next to bridge (M). West Levee Sta. 503+50 had new sewer manhole in the floodplain (Observed). Sludge lagoon in flood plain near East levee Sta. 621+00 (Observed). Sylvan Ave Lake Development in flood plain (Observed).
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	M	A	No head cutting or horizontal deviation observed.	Station 161+00 had right side of river bank failing into the channel in the flood plain (M).
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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

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

Flood Damage Reduction Channels

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

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

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

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



Flood Damage Reduction Channels

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves ¹	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See PPB 19, WRP 19, and HRP 19.
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	U	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	Erosion of the bank toward the levee at Belleview Pressure Conduit (U). Riprap displaced from slopes of discharge chute to the bottom of the channel at New Hampton exposing bedding (U), and slides on the right and left slopes downstream of this displaced riprap. See Plate D-10, Photo EFD 10. See EL 12 (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 system, or riprap is discussed in another section.	
11. Revetments other than Riprap	A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	See EL 8.
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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

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



US Army Corps
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Flood Damage Reduction System Inspection Report

Name of System: Dallas Floodway West Levee, Trinity River, Texas

Public Sponsor(s): City of Dallas Flood Control District

Public Sponsor Representative: David F. Garcia

Sponsor Phone: 214-671-0322

Sponsor Email: david.garcia@dallascityhall.com

Corps of Engineers Inspector: J. Hernández, S. Chen, A. Branch, L. Perrin,
K. Ley, D. Wilson Date of Inspection: 3-5 December 2007

Inspection Report Prepared By: J. Hernández, A. Branch, S. Chen Date Report Prepared: 31 March 2009

Internal Technical Review (for Periodic Inspections) By: _____ Date of ITR: _____

Final Approval By: _____ Date Approved: _____

Type of Inspection: Initial Eligibility Inspection
 Continuing Eligibility Inspection (Routine)
 Continuing Eligibility Inspection (Periodic)

Overall System Rating: Acceptable
 Minimally Acceptable
 Unacceptable

Contents of this Report: Instructions
 Initial Eligibility Inspection
 General Items for All Flood Control Works
 Levee Embankments
 Concrete Floodwalls
 Sheet Pile and Concrete I-walls
 Interior Drainage System
 Pump Stations

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

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Flood Damage Reduction System Public Sponsor Pre-Inspection Report

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 system maintenance program.

1. Levee system and district: (name of the system and levee district) Dallas Floodway West Levee, Trinity River, Texas / City of Dallas Flood Control District
2. Reporting period: (month/day/year to month/day/year) October 12, 2002 to December 5, 2007
3. Summary of maintenance required by last inspection report: (1) Continue silt, debris and trash removal, and vegetation control, monitor the project for problems. (2) Survey crest elevation (various reaches of the levee crests are below design grade). (3) Repair skin slides. (4) Remove trees along the channel, banks, and slopes. (5) Pump Stations - provide space between bridge girders/deck and the concrete abutment to allow for expansion. (6) Reconstruct fiber optic cable crossings.
4. Summary of maintenance performed this reporting period: (1) Flood Control District and City personnel surveyed the East and West Levees in 2003 (the West Levee from Stations 0+50 to 574+00). Plans are on-going to address the deficiencies of the levee height through the Trinity River Corridor Project. Levee surveys continue through third party inspectors in conjunction with the existing and future bridge construction, Trinity River Relocations, and the Trinity River Corridor Project. (2) Flood Control District has repaired 20 slides since the last PI. (3) The Flood Control District personnel have rebuilt the fiber optic cable crossings. However, the covered fill is no longer at the required slope of 1V:10H. Additional work will be necessary and will be completed by summer 2008. See Appendix I for additional summary of the maintenance performed this reporting period.
5. Summary of maintenance planned next reporting period: See Appendix I for summary of maintenance planned for next reporting period.
6. Summary of changes to system since last inspection:

New construction completed since the last PI includes the replacement of the Eagle Ford Sluice Gate Structure at Station 479+72, Upper Levee Road, in June 2006. This consists of a new 10 x 14 square feet concrete building. Current major construction on the floodway consists of the Hampton/Inwood Bridge and the Woodall Rogers Bridge Extension. See Appendix I for additional summary of changes to system since the last inspection.

7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Serious issues found requiring the assistance of the CORPs are structural encroachments on the levee crest, slopes, toes, and within 50 feet of the levee toe. The larger structures were commonly bridge crossings, bridge piers, power line towers, power poles, and large lines running under the levee. These encroachments will require further discussion between the Corps and the Flood Control District to determine appropriate mitigation to correct these unacceptable ratings. Cracking on the levee will also require further discussion between the Corps and the Flood Control District to determine appropriate mitigation.

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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
David F. Garcia	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0322	david.garcia@dallascityhall.com
Marie Marroquin	City of Dallas	2710 Municipal St., Dallas, TX. 75215	217-671-0808	marie.marroquin@dallascityhall.com
Don Lawnence	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6523	don.lawnence@dallascityhall.com
Frank D. Peebul	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-7124	frank.peebul@dallascityhall.com
Mike Johnson	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0333	mike.johnson@dallascityhall.com
Bier Rios	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6528	bier.rios@dallascityhall.com
Kelly High	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-4491	kelly.high@dallascityhall.com

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General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that

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 t

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of on	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 stati

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 r

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 Eli

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

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

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as

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

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 previousl	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 r
- 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 sy

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 Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Information Requested.
	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	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.	Inspected East floodwall stoplogs and sand stockpile. Additional information requested.
	M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emerge	Information Requested.
	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

FOR OFFICIAL USE ONLY

Flood Damage Reduction 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 System: Dallas Floodway West Levee Sponsor: City of Dallas Flood Control District Location: City of Dallas River Basin: Trinity River Project Description: 10.9 miles of levees (West Levee), structures, and channel. Authority that Project was Constructed Under: River and Harbor Act approved 2 Mar. 1945 (PL- 79-14) (HD 403/77/1), River and Harbor Act approved 17 May 1980 (PL 81-516) HD 242/81/1 Date of Construction: 1953 to 1959 Approximate Annual Maintenance Costs: Construction: <input checked="" type="checkbox"/> Federally Constructed <input type="checkbox"/> Non-Federally Constructed Maintenance: <input type="checkbox"/> Federally Maintained <input checked="" type="checkbox"/> Non-Federally Maintained	
National Flood Insurance Program: a. Is the project currently in the NFIP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No b. If in the NFIP, Date of Certification (per 44 CFR 65.10): 2006	
Datum Information: a. Datum used for the design and construction of this project is: NGVD29 b. Current recommended datum for this project is: NGVD88 c. Has the project been converted to the current recommended datum? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Levee Embankment Data: a. Levee Designed Gage Function Reading/Station: Trinity River at Dallas 8057000 b. Level of Protection Provided: SPF c. Average Height of Levee: Average H = 28 feet d. Average Crown Width: Average W = 16 feet e. Average Side Slope: River S = 3H:1V, Land S = 3H:1V or 4H:1V	Protected Features (For use in preparing estimates and PIRs): a. Total acres protected: b. Total agricultural 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:

FOR OFFICIAL USE ONLY

West Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee 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 50 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.	Eagle Ford Sluice Sta. 479+72 had trees growing on the landside slope (U). See Plate D-11, PhotoWL 1. Sta. 350+00, 371+50, 376+50, and near HWY 30 had trees within 50 feet of levee toes (U). A survey of additional areas where trees were within 50 feet of levee toes needs to be conducted in the future (Observation).
		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.	
2. Sod Cover	M	A	There is good coverage of sod over the levee.	Johnson grass growth was wide spread over entire project. The rapid growth hindered inspection and covered seepage (M). Localized bare areas along the levee were more susceptible to cracking and erosion (Observed).
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	

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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.

West Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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.	Approximately 15 bridges crossed over the levee, many with piers in the levee crest or slopes (U). See Plate D-12, Photo WL 3a. Levee crest excavated at the Houston Street Bridge crossing (U). Sta. 18+90 had power line tower on landside levee toe (U). See Plate D-12, Photo WL 3b. Power line poles on landside levee slopes and toe, and cabled pole vehicle barriers on levee slopes upstream of Sta. 471+40 (U). See Plate D-13, Photo WL 3d. Power poles on landside levee toe downstream of Sta. 267+95 (U). Sta. 500+00 had pole on riverside levee slope (U). Sta. 253+70 had gas line crossing levee (not streamlined) (U). Sta. 329+70 has 6" jet fuel pipeline crossing (U). Sta. 466+50 had 8" petroleum line crossing over levee (streamlined) (U). See Plate D-13, Photo WL 3c. Walton Walker Bridge Sta. 475+65 had buried pier support in levee (U). See Photo WL 3g. Sta. 11+90 & 25+40 had line crossing levee (U). Sta. 244+80 & 309+30 had fiber optic line crossing over levee (not streamlined) (M). I-35 Northbound Bridge Sta. 52+50 had 4 shopping carts full of rock protection made into homeless shelter (M). Sta. 503+5
		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.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	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 system.	
5. Slope Stability	M	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	Repaired slope slides at Stations 316+00 (2 slides), 317+60, 338+40, 350+00, 371+50 to 376+50, and 377+50 (420' repaired channel slope shallow slide) (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.	

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West Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
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.
		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 ¹	U	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	M	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	U*	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	A	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.
		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.

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¹ Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

West Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes ¹ (This item includes both concrete and corrugated metal pipes.)	N/A	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.	

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¹ 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

West Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	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.	Continental Ave Bridge Sta. 142+50 had depression in riverside riprap slope under bridge (M). I-35 Northbound Bridge Sta. 52+50 had riverside levee slope stone protection under bridge moved/displaced to just off the toe (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 system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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.	8 piezometers from 1953 on the land side toe of the levee presumed nonfunctional between Sta. 145+00 to 197+00.
		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 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 system.	
15. Seepage	M	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Drainage ditch adjacent to the landside levee toe and in the sump areas was the standard project condition. This would obscure seepage that developed during a flood event (M).
		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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West 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	U	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	M	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	N/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.

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

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

West Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces (Such as gate wells, outfalls, intakes, or culverts)	M	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.	Little Coombs Creek had hole, scour, a failed patch over scour at bottom of conduit for Little Coombs Creek Pressure Conduit (M). Exposed steel reinforcement in ceiling and cracks in floor and wall of conduit for Big Coombs Creek Pressure Conduit (M).
		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 ¹ (Such as gate wells, outfalls, intakes, or culverts)	U	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	Right wing wall at Coombs Creek Pressure Diversion had a 3 inch separated joint with exposed rebar (U). See Plate D-16, Photo WID 6a. Steel brace installed to prevent movement of wing walls at Little Coombs Creek Pressure Conduit has become disconnected from the right wing wall and has failed (U). See Plate D-17, Photo WID 6b.
		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 ² (Such as culverts, inlet and discharge structures, or gatewells.)	M	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	Pump Station C had erosion gullies (Max. - at right side 5'W x 30'L x 3'D) on both slopes of the discharge channel and erosion on the right toe (5'W x 10'L) of the discharge channel (M). Pump Station D had erosion on the right slope (50'W x 80' L x 12'D) of the discharge channel (M). Coombs Creek Pressure Sewer had erosion above the chute (2 gullies) and on the right slope (10'W x 25' L x 2'D) of the discharge channel (M). Little Coombs Creek Pressure Conduit had erosion gully on the right channel slope (5'W x 12'L x 2'D) of the discharge channel (M). Pavaho discharge channel had a slope slide on the entire left bank (35'W x 150'L) and another slide (12'W x 20'L) on the right lower slope (M). Erosion above Lake Cliff discharge chute (8'W x 40'L) (M).
		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 stable 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.	

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

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

West Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Monolith Joints	U	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.	See WID 6 (U).
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/Discharge Pipes ¹	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.	Condition of pipes, culverts or conduits has not been verified by television camera video taping or visual inspection within the past 5 years, and reports were not available for review (U). All pipes, culverts or conduits should be adequately inspected (as previously described) by CoD and results should be provided to SWF. Also see LCC 17 (M).
		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.	

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¹ 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

West Interior Drainage System

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

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
10. Sluice / Slide Gates ¹		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.	Not inspected.
		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.	
11. Flap Gates/ Flap Valves/ Pinch Valves ²	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See EFS 19 and LCC 19 (M).
		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)	A	A	Trash racks are fastened in place and properly maintained.	See PPC 11, PPP 11, and WID 1.
		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	U	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See WID 6 (U). See PPD 21, LCP 21, CCP 6, CCP 21, LCC 21, and PPP 21 (M).
		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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

West Interior Drainage System

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

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
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.	See WL 3 and WL 12 (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 system, or riprap is discussed in another section.	
15. Revetments other than Riprap	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.	See WL 8 (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 are no such revetments protecting this feature of the system.	

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

Charlie Pump Station

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	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.	Information Requested.
		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	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	Information Requested.
		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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	U	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.	The intake structure, pumping equipment and buildings appeared to be in good condition. There was an erosion void under the stairs next to the pump house on the west side of the building. It was unclear how far back the void goes (U). See Plate D-15, Photo CPS 5a. Scaling concrete was on the bridge support corbel under the bridge girders at the control structure (M). Power poles upstream and downstream of the pump house at the same elevation were leaning in the down slope direction (Observed).
		M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
		U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	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.	

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

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

Charlie Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Pumps ¹	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.	Not Inspected.
	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	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.	Not Inspected.
	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	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	Trash in the sump ponding area next to the trash racks (M).
	M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	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	A	Trash racks are fastened in place and properly maintained.	See WID 1.
	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.	

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

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

Charlie Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	
	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	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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

¹ 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,

Charlie Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected. Discharge underwater (Observed).
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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)	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Delta Pump Station

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	The intakes, equipment and buildings appeared to be in good condition. A slope slide (60'W x 70'L x 5'D) occurred just upstream and below the pump house (U). Erosion washed out soil from under a concrete structure behind the pump house (See PPD 5a) (M). See Plate D-15, Photo DPS 5. Bolt bent on bridge abutment at levee end of bridge (M).
	M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
	U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	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.	

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

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

Delta Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Pumps ¹	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.	Not Inspected.
	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	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.	Not Inspected.
	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	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	Trash in the sump ponding area (M).
	M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	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	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.	

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

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

Delta Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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

¹ 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,

Delta Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected.
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Corrosion on trash racks (M). See Plate D-16, Photo DPS 21.
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Lake Cliff Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to station operator and maintenance personnel.	
5. Structure	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.	There was a 6 inch erosion depression on the down slope side of the service bridge abutment on the levee (Observed) (M).
		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 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 operations.	
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.	

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

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

Lake Cliff Pressure Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See LCP 21.
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Corrosion on flap gate (M).
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Coombs Creek Pressure Diversion

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to station operator and maintenance personnel.	
5. Structure	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.	See WID 6 (M). Plate girder for bridge is up against abutment and rocker arm is rocked back further than it should be (this note is for "one" of the Coombs Creek Pressure Conduit bridges) (M).
		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 operations.	
		U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	M	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.	16 feet long handrail on the right discharge wing wall broke off and was in the bottom of the discharge channel (M).
		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.	

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

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

Coombs Creek Pressure Diversion

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
17. Intake and Discharge Pipelines	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.	Not Inspected.	
	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 ¹	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.	Not Inspected.	
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.		
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.		
	N/A	There are no sluice/ slide gates.		
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Not Inspected. Outlet underwater (Observed).	
	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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	N/A	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	N/A	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See WID 6 and CCP 6 (M). Non-Mechanical Trash Racks at inlet was bent and has rust (M). See Plate D-17, Photo CCP 21.
	M	M	Corrosion seen on metallic parts appears to be maintainable.	
	M	U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
	M	N/A	There are no other significant metallic items.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Little Coombs Creek Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records		A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
		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. Station Operations and Maintenance Equipment Manuals		A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	Information Requested.
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Information Requested.
		M	A telephone, cellular phone, two-way radio, or similar device is not available to 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.	Service bridge abutment has moderate cracking (M).
		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 operations.	
		U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	N/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.	

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

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

Little Coombs Creek Conduit

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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.	A failed patch over scour, second scour area, and 6" dia. hole in bottom of conduit (M).
		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 ¹		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.	Not Inspected.
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Debris behind flap gate was preventing it from sealing (M).
		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 ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
		M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
		U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
		N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	U	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	See WID 6 (U). Corrosion on flap gate (M).
		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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Pavaho Pump Station

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	The pumping equipment and buildings appeared to be in good condition. A large slope failure (20'L x 20'W) under the drive left the concrete slab cantilevered at the edge of the drive (U). See Plate D-18, Photo PPS 5. The intake left wing wall had a 1 inch separation from the intake (M).
	M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
	U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	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.	Chain link fencing was leaning on the east side of the building (M).
	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.	

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

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

Pavaho Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Pumps ¹	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.	Not Inspected.
	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	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.	Not Inspected.
	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	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	Light debris in the sump ponding area (M).
	M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	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	A	Trash racks are fastened in place and properly maintained.	5"W x 8"L tear in the right side rail screen (Observed). See WID 1.
	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.	

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

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

Pavaho Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	
	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	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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¹ 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,

Pavaho Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Corrosion on flap gates.
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Corrosion on flap gates, trash racks and control structure grill platform (M).
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Eagle Ford Sluice

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Station Operating, Maintenance, Training, & Inspection Records	A	Operation, maintenance and inspection records are present at the station and are being used and updated, and personnel have been trained in station operations. Names and last training date shown in the record book.	Information Requested.
	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. Station Operations and Maintenance Equipment Manuals	A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent station features. O&M manuals include points of contact for manufacturers and suppliers of major equi	Information Requested.
	M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent 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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to station operator and maintenance personnel.	
5. Structure	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.	The Eagle Ford sluice sustained significant structural damage to the walls of the CMU structure (U). Erosion gully (6"W x 3'L x 1'D) next to the landside upstream corner of the control structure which undermined corner post of guardrail (M).
	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 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 operations.	
6. Fencing and Gates ¹	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.	

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

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

Eagle Ford Sluice

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
17. Intake and Discharge Pipelines	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.	Pipes not Inspected. Intake 60% silted in.	
	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 ¹	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.	Not Inspected.	
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.		
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.		
	N/A	There are no sluice/ slide gates.		
19. Flap Gates/ Flap Valves/ Pinch Valves ²	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	Debris behind left flap gate at outlet was preventing it from closing tightly (M).
	M	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.	
	M	U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
	M	N/A	There are no gates on discharge lines from pump station.	
20. Cranes ²	N/A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	
	N/A	M	Cranes have not been inspected or operationally tested within the past year, or there are visible	
	N/A	U	Cranes are not operational, and this may prevent the pump station from functioning as required.	
	N/A	N/A	There are no cranes.	
21. Other Metallic Items (Equipment, Ladders, Platform, Anchors, etc)	A	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
	A	M	Corrosion seen on metallic parts appears to be maintainable.	
	A	U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage or safety issues.	
	A	N/A	There are no other significant metallic items.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.



US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of System: Rochester Levee, Trinity River, Texas

Public Sponsor(s): City of Dallas Flood Control District

Public Sponsor Representative: David F. Garcia

Sponsor Phone: 214-671-0322

Sponsor Email: david.garcia@dallascityhall.com

Corps of Engineers Inspector: J. Hernández, S. Chen, A. Branch, L. Perrin,
K. Ley, D. Wilson Date of Inspection: 3-5 December 2007

Inspection Report Prepared By: J. Hernández, A. Branch, S. Chen Date Report Prepared: 31 March 2009

Internal Technical Review (for Periodic Inspections) By: _____ Date of ITR: _____

Final Approval By: _____ Date Approved: _____

Type of Inspection: Initial Eligibility Inspection
 Continuing Eligibility Inspection (Routine)
 Continuing Eligibility Inspection (Periodic)

Overall System Rating: Acceptable
 Minimally Acceptable
 Unacceptable

Contents of this Report: Instructions
 Initial Eligibility Inspection
 General Items for All Flood Control Works
 Levee Embankments
 Concrete Floodwalls
 Sheet Pile and Concrete I-walls
 Interior Drainage System
 Pump Stations

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

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Flood Damage Reduction System Public Sponsor Pre-Inspection Report

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 system maintenance program.

1. Levee system and district: (name of the system and levee district) Dallas Floodway Rochester Levee, Trinity River, Texas / City of Dallas Flood Control District
2. Reporting period: (month/day/year to month/day/year) N/A - No Previous Inspection
3. Summary of maintenance required by last inspection report: N/A
4. Summary of maintenance performed this reporting period: N/A
5. Summary of maintenance planned next reporting period: See Appendix I for summary of maintenance planned for next reporting period.
6. Summary of changes to system since last inspection:

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The Rochester Park Levee and the Central Wastewater Treatment Plant Levee have been newly incorporated into the Dallas Floodway Extension Project and are now part of the Federal Floodway.

7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Serious issues found requiring the assistance of the CORPs are structural encroachments on the levee crest, slopes, toes, and within 50 feet of the levee toe. The larger encroachments were power line towers, large lines running under the levee, and valve controls on the crest. These encroachments will require further discussion between the Corps and the Flood Control District to determine appropriate mitigation to correct these unacceptable ratings.

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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
David F. Garcia	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0322	david.garcia@dallascityhall.com
Marie Marroquin	City of Dallas	2710 Municipal St., Dallas, TX. 75215	217-671-0808	<u>marie.marroquin@dallascityhall.com</u>
Don Lawnence	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6523	<u>don.lawnence@dallascityhall.com</u>
Frank D. Peebul	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-7124	<u>frank.peebul@dallascityhall.com</u>
Mike Johnson	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0333	<u>mike.johnson@dallascityhall.com</u>
Bier Rios	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6528	<u>bier.rios@dallascityhall.com</u>
Kelly High	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-4491	<u>kelly.high@dallascityhall.com</u>

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General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that

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 t

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of on	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 stati

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 r

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 Eli

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

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

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as

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

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 previousl	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 r
- 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 sy

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 Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Information Requested.
	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	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.	Inspected East floodwall stoplogs and sand stockpile. Additional information requested.
	M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emerge	Information Requested.
	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

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Flood Damage Reduction 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 System: Rochester Levee Sponsor: City of Dallas Flood Control District Location: City of Dallas River Basin: Trinity River Project Description: Approx. 2.5 miles of levees and structures. Authority that Project was Constructed Under: Section 301, River and Harbor Act 1965, modified by Section 351 WRDA 1996; and Section 356 of WRDA 1999. Date of Construction: 1993 Approximate Annual Maintenance Costs: Construction: <input type="checkbox"/> Federally Constructed <input checked="" type="checkbox"/> Non-Federally Constructed Maintenance: <input type="checkbox"/> Federally Maintained <input checked="" type="checkbox"/> Non-Federally Maintained	
National Flood Insurance Program: a. Is the project currently in the NFIP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: b. Current recommended datum for this project is: NGVD88 c. Has the project been converted to the current recommended datum? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Levee Embankment Data: a. Levee Designed Gage Function Reading/Station: Trinity River at Dallas 8057000 b. Level of Protection Provided: 100 year event min. c. Average Height of Levee: Average H = 20 feet d. Average Crown Width: Average W = 15 feet e. Average Side Slope: River S = 4H:1V, Land S = 4H:1V	Protected Features (For use in preparing estimates and PIRs): a. Total acres protected: b. Total agricultural 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:

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Rochester Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee 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 50 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.	Large trees within 50 feet of landside levee toe (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 be removed to reestablish or ascertain levee integrity.	
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.	Sta. 121+55 to 130+00 – Leaning power poles and anchorages on the levee crest (U). See Plate D-20, Photo RL 3. Sta. 51+00 had sanitary sewer control valve on the levee crest (U). Sta. 51+00 had sanitary sewer crossing under levee (M) and a 24" diameter 1 foot deep moist depression on the levee crest at the crossing (are these related?).
		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.	

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

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.

Rochester Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	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 system.
5. Slope Stability	U	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	M	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 ¹	M	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	M	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.

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

¹ Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.



Rochester Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
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	A	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.
		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 ¹ (This item includes both concrete and corrugated metal pipes.)	M	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.
			Seasonal desiccation cracking common in the area (Observed).
			Not Inspected, except for 4 outlets and 1 inlet, additional investigation needed (M). Also see RPS 21.

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

¹ 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



Rochester Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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 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 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.	

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

Rochester 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	M	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.

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

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

Rochester Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces (Such as gate wells, outfalls, intakes, or culverts)	M	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.	Sta. 89+00 the intake gravity flow structure that had 4 foot crack over the left box culvert (M).
		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 ¹ (Such as gate wells, outfalls, intakes, or culverts)	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
7. Foundation of Concrete Structures ² (Such as culverts, inlet and discharge structures, or gatewells.)	M	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	See RPS 5 (M).
		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 stable 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.	

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

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

Rochester Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/Discharge Pipes ¹	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.	Condition of pipes, culverts or conduits has not been verified by television camera video taping or visual inspection within the past 5 years, and reports were not available for review (U). All pipes, culverts or conduits should be adequately inspected (as previously described) by CoD and results should be provided to SWF. Not Inspected, except for 4 outlets and 1 inlet, additional investigation needed (M). Also see RPS 21.
		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.	

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¹ 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

Rochester Interior Drainage System

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

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
10. Sluice / Slide Gates ¹	A	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.
11. Flap Gates/ Flap Valves/ Pinch Valves ²	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.
		N/A	There are no flap gates.
12. Trash Racks (non-mechanical)	A	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	M	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.

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¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

Rochester Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
14. Riprap Revetments of Inlet/ Discharge Areas	A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
15. Revetments other than Riprap	U	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	Sta. 89+00 had intake gravity flow structure that had depressions on the gabion slopes on both sides of the intake caused by erosion of soil material under the gabions next to the wing walls. The right side had a 2 foot deep gully next to the wing wall (exposed/washing out of bedding) and the left side has a 18'L x 10'W area depression on the gabion slope next to the wing wall (U). See Plate D-22, Photo RID 15.
		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 system.	

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FOR OFFICIAL USE ONLY

Rochester Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
1. Unwanted Vegetation Growth ¹	M	A	A grass-only or paved zone is maintained on both sides of the floodwall, free of all trees, brush, and undesirable weeds. The vegetation-free zone extends 50 feet from both the land and riverside of the floodwall, at ground-level, to the centerline of the tree. Additionally, an 8-foot root-free zone is maintained around the entire structure, including the floodwall toe, heel, and any toe-drains. If the floodwall 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 and/or Corps policy for regional vegetation variance.	Light brush up to 6 feet high against the west side of the floodwall (M).
		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 floodwall.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above. This vegetation threatens the operation or integrity of the floodwall and must be removed.	
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 floodwall.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the floodwall.	
3. Closure Structures (Stop Log Closures and Gates) (A or U only)	U	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.	Three active closures. The "levee closure" structure for the railroad tracks did not have a concrete sill to effect a seal when the stop log is placed in the closure (U). The ladder was bent on one of the swinging gates for the "closure at Rail Road Street" and the turnbuckle was jammed between steel attachments such that it cannot easily be manipulated to create a tight closure for the gate (U). See Plate D-21, Photo RFW 3a. No record of trial erections completed (U). The bottom seals on the stop logs for the "floodwall stop log closure structure" were deformed near the ends due to the stop logs being stored with a section of the bottom seals resting on concrete stands (M). See Plate D-22, Photo RFW 3b. It would be a good idea if when the seals are replaced to adapt the concrete stands to hold the stop logs without the rubber seals resting on the concrete by cutting a groove in the concrete to remedy the situation (Observed).
		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 ins	
		N/A	There are no closure structures along this component of the FDR system.	

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¹ 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.

FOR OFFICIAL USE ONLY

Rochester Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

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

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

Rochester Floodwall

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
7. Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the floodwall.	
8. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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 wo	
		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 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 system.	
9. Seepage	U	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Design needs to be reviewed for resistance to seepage along the skin of the sheet pile floodwall (a weakness of this type of floodwall). Geotechnical investigation may be required (U).
		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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Rochester Pump Station

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	There was soil erosion at the right side of the inlet and erosion (6'L x 2'W x 10"D) behind the right wingwall of the pump house intake for the Rochester Pump Station (M).
	M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
	U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	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.	

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

Rochester Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Pumps ¹	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.	Not Inspected.
	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	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.	Not Inspected.
	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	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	
	M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	A	Drive chain, bearing, gear reducers, and other components are in good operating condition and are being properly maintained.	Not Inspected.
	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	A	Trash racks are fastened in place and properly maintained.	Not Inspected.
	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.	

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Rochester Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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¹ 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,

Rochester Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected, except for RPS 21.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See RPS 21.
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Rust on pump station flap gates and walk way (M).
	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.	

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

¹ 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.

² Proper operation of this item must be demonstrated during the inspection.



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Flood Damage Reduction System Inspection Report

Name of System: Central WWTP Flood Protection Project, Trinity River, Texas

Public Sponsor(s): City of Dallas Flood Control District

Public Sponsor Representative: David F. Garcia

Sponsor Phone: 214-671-0322

Sponsor Email: david.garcia@dallascityhall.com

Corps of Engineers Inspector: J. Hernández, S Chen, A. Branch, L. Perrin,
K. Ley, D. Wilson Date of Inspection: 3-5 December 2007

Inspection Report Prepared By: J. Hernández, A. Branch, S. Chen Date Report Prepared: 31 March 2009

Internal Technical Review (for Periodic Inspections) By: _____ Date of ITR: _____

Final Approval By: _____ Date Approved: _____

Type of Inspection: Initial Eligibility Inspection
 Continuing Eligibility Inspection (Routine)
 Continuing Eligibility Inspection (Periodic)

Overall System Rating: Acceptable
 Minimally Acceptable
 Unacceptable

Contents of this Report: Instructions
 Initial Eligibility Inspection
 General Items for All Flood Control Works
 Levee Embankments
 Concrete Floodwalls
 Sheet Pile and Concrete I-walls
 Interior Drainage System
 Pump Stations

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

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Flood Damage Reduction System Public Sponsor Pre-Inspection Report

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 system maintenance program.

1. Levee system and district: (name of the system and levee district) Dallas Floodway Central WWTP Flood Protection Project, Trinity River, Texas / City of Dallas Flood Control District
2. Reporting period: (month/day/year to month/day/year) N/A - No Previous Inspection
3. Summary of maintenance required by last inspection report: N/A
4. Summary of maintenance performed this reporting period: N/A
5. Summary of maintenance planned next reporting period: See Appendix I for summary of maintenance planned for next reporting period. None specified for CWWPT at this time.
6. Summary of changes to system since last inspection:

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The Rochester Park Levee and the Central Wastewater Treatment Plant Levee have been newly incorporated into the Dallas Floodway Extension Project and are now part of the Federal Floodway.

7. Problems/ issues requiring the assistance of the US Army Corps of Engineers:

Deficiencies found are structural encroachments on the levee crest, slopes, toes, and within 50 feet of the levee toe. The structures were power line poles, and sewer lines running under the levee, control valves on the crest and the MSC wall. These encroachments will require further discussion between the Corps and the Flood Control District to determine appropriate mitigation to correct these unacceptable ratings.

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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
David F. Garcia	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0322	david.garcia@dallascityhall.com
Marie Marroquin	City of Dallas	2710 Municipal St., Dallas, TX. 75215	217-671-0808	marie.marroquin@dallascityhall.com
Don Lawnence	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6523	don.lawnence@dallascityhall.com
Frank D. Peebul	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-7124	frank.peebul@dallascityhall.com
Mike Johnson	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-671-0333	mike.johnson@dallascityhall.com
Bier Rios	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-6528	bier.rios@dallascityhall.com
Kelly High	City of Dallas	2710 Municipal St., Dallas, TX. 75215	214-670-4491	kelly.high@dallascityhall.com

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General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

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

B. Types of Inspections:

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

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

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

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

D. Land Use Definitions:

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

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

E. Use of the Inspection Report Template:

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

F. Individual Item / Component Ratings:

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

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

G. Overall System Ratings:

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

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

H. Eligibility for PL84-99 Rehabilitation Assistance:

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

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

I. Reporting:

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

- a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
- b. Photos of the general system condition and noted deficiencies.
- c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
- d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
- e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

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

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

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Information Requested.
	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	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.	Inspected East floodwall stoplogs and sand stockpile. Additional information requested.
	M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emerge	Information Requested.
	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

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Flood Damage Reduction 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 System: Central WWTP Flood Protection Project Sponsor: City of Dallas Flood Control District Location: City of Dallas River Basin: Trinity River Project Description: Approx. 2.6 miles of levees and structures. Authority that Project was Constructed Under: Section 301, River and Harbor Act 1965, modified by Section 351 WRDA 1996; and Section 356 of WRDA 1999. Date of Construction: Improvements in 1992 to 1994 Approximate Annual Maintenance Costs: Construction: <input type="checkbox"/> Federally Constructed <input checked="" type="checkbox"/> Non-Federally Constructed Maintenance: <input type="checkbox"/> Federally Maintained <input checked="" type="checkbox"/> Non-Federally Maintained	
National Flood Insurance Program: a. Is the project currently in the NFIP? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No b. If in the NFIP, Date of Certification (per 44 CFR 65.10): N/A	
Datum Information: a. Datum used for the design and construction of this project is: b. Current recommended datum for this project is: NGVD88 c. Has the project been converted to the current recommended datum? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Levee Embankment Data: a. Levee Designed Gage Function Reading/Station: Trinity River at Dallas 8057000 b. Level of Protection Provided: 100 year event min. c. Average Height of Levee: Approx. d. Average Crown Width: Approx. e. Average Side Slope: River S = _ H:1V, Land S = _ H:1V	Protected Features (For use in preparing estimates and PIRs): a. Total acres protected: b. Total agricultural 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:

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CWWTP Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
1. Unwanted Vegetation Growth ¹	M	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 50 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.	Brush between the landside north levee toe and the retention pond (M).
		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 be removed to reestablish or ascertain levee integrity.	
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.	Odor control fan poles in the exterior levee slope (north and west side of levee) (U). See Plate D-23, Photo CWWTP 3a. Chain link fence with 12" concrete strip foundation running along the river side levee crest edge (north, east, and south side of levee) (U). Electric tower on the land side slope and crest of the north levee (U). See Plate D-24, Photo CWWTP 3b. 84" Emergency outfall control valve (east corner levee system) and 2 control valves (south corner area levee system) are on the levee crest (U). Lines under levee: Two 60" diameter force main lines (U). Other lines under levee: 84" emergency outfall (120" dia. & 48" dia.), 66" dia. plant outfall (emergency use), 10'x10' main double box culvert outlet, 84" dia. waste water gravity main line, 60" dia. waste water gravity line, abandoned outfall, and numerous other utilities under levee to be identified (U). See Plate D-25, Photo CWWTP 3c. Excavated pit behind the levee. See Plate D-23, Photo CWWTP 3d. Water tank at toe of levee. See Plate D-24, Photo CWWTP 3e.
		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.	

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

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.

CWWTP Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	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 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	M	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 ¹	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.
		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.

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

¹ Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

CWWTP Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
9. Cracking	M	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	A	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.
		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 ¹ (This item includes both concrete and corrugated metal pipes.)	M	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.
			All pipe interiors not inspected. Also see WL 3 for list of some known pipes and WID 11 for description of 2 flap gates.

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

¹ 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

CWWTP Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
12. Riprap Revetments & Bank Protection	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.	Riprap at a discharge had grass growing in it (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 system, or riprap is discussed in another section.	
13. Revetments other than Riprap	A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR 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 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 system.	
15. Seepage	M	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Retention pond along land side levee toe of the north levee. This would obscure seepage that develops during a flood event (M).
		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.	

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

CWWTP 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.	See WLE 1 and WID 14.
		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.	

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CWWTP Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces (Such as gate wells, outfalls, intakes, or culverts)	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
6. Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures ¹ (Such as gate wells, outfalls, intakes, or culverts)	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
7. Foundation of Concrete Structures ² (Such as culverts, inlet and discharge structures, or gatewells.)	M	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	Erosion around one discharge chute (M).
		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 stable 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.	

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

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

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/Discharge Pipes ¹	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.	Condition of pipes, culverts or conduits has not been verified by television camera video taping or visual inspection within the past 5 years, and reports were not available for review (U). All pipes, culverts or conduits should be adequately inspected (as previously described) by CoD and results should be provided to SWF. Also see WL 3 for list of some known pipes and WID 11 for description of 2 flap gates. Only a few discharges were inspected, follow-up inspection needed (M).
		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.	

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¹ 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

WWTP Interior Drainage System

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

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations	
10. Sluice / Slide Gates ¹		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.	Not inspected.
		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.	
11. Flap Gates/ Flap Valves/ Pinch Valves ²	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	The bottom of a 24" round flap gate was silted in at the sewer plant (M). Second flap gate under water (Observation). Flap gates to be located in follow up inspection.
		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)	N/A	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	A	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.	

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¹ 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.

² Proper operation of this item must be demonstrated during the inspection.

WWTP Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
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.	Vines in riprap above one discharge chute (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 system, or riprap is discussed in another section.	
15. Revetments other than Riprap	A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There are no such revetments protecting this feature of the system.	

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FOR OFFICIAL USE ONLY

CWWTP Pump Station

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	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.	Information Requested.
	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	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.	Information Requested.
	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	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	Information Requested.
	M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	Information Requested.
	M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	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.	Not Inspected.
	M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
	U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	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.	Not Inspected.
	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.	

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CWWTP Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
7. Pumps ¹	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.	Not Inspected.
	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	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.	Not Inspected.
	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	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	Not Inspected.
	M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	A	Drive chain, bearing, gear reducers, and other components are in good operating condition and are being properly maintained.	Not Inspected.
	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	A	Trash racks are fastened in place and properly maintained.	Not Inspected.
	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.	

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CWWTP Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
12. Fuel System for Pump Engines	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	Not Inspected.
	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	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.	Not Inspected.
	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 ¹	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	Not Inspected.
	M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
	U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	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.	Not Inspected.
	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	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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¹ 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,

CWWTP Pump Station

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines	Location/ Remarks/ Recommendations
17. Intake and Discharge Pipelines	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.	Not Inspected.
	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 ¹	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.	Not Inspected.
	M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
	U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
	N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ²	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	See WID 11 (M).
	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 ²	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	Not Inspected.
	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)	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	Not Inspected.
	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.	

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¹ 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.

² Proper operation of this item must be demonstrated during the inspection.