



**U.S. Army
Corps
of Engineers®**

Levee Inspection Report

Name of System: _____

Name of Segment: _____

NLD System ID: _____ NLD Segment ID: _____

Segment Type: _____

Levee Sponsor (Name and Organization): _____

Inspection Report Prepared by: _____ Date(s) of Inspection: _____

Other Segments Within This System

Segment Name	NLD Segment ID#	Segment Type	Segment Inspection Rating

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Type of Inspection: ☐ Formal Inspection ☐ Special Inspection (mark this if purpose is Initial Eligibility Inspection)

Approval Signature: _____ Date Approved: _____

Levee Inspection Team Members (Levee Sponsor, USACE, and Others)

Name	Organization	Discipline	Phone Number

Levee Inspection Summary

<u>Levee Segment Inspection Summary:</u> <i>[Provide an Executive Summary of the segment inspection considering (1) the general condition of the segment, (2) the rationale for key Item ratings, categorized by Feature , and (3) the quantity or severity of notable observations/deficiencies and (4) notable changes in condition since the last inspection.]</i>
<u>Levee System Inspection Summary:</u> <i>[Synthesize information from the Levee Segment Inspection Summaries for each segment within the levee system. For single-segment levee systems, see Levee Segment Inspection Summary above.]</i>

General Items

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
1. Operations and Maintenance Manuals		A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.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.	
		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 that will be used to trigger emergency operation activities and a solid understanding of how to operate, maintain, and staff the levee system during a flood, including demonstration that sufficient flood warning time exists for the completed operation of all closure structures. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		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.	

Levee Embankments

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
1. Unwanted Vegetation Growth		A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EP 1110-2-18 and other relevant Corps policy.	
		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	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.	
		NA	Surface protection is provided by other means.	
3. Encroachments		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.	
		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.	

Levee Embankments

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
4. Closure Structures		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.	
		NA	There are no closure structures along this component of the levee segment / system.	
5. Slope Stability		A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/Bank Caving		A	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		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	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.	

Levee Embankments

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
9. Cracking		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	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 (This item includes both concrete and corrugated metal pipes.)		A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. All joints appear to be closed and the soil tight. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods within the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed are in good condition.	
		M	There are some defects noted that should be monitored. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed do not indicate a change in condition since the last condition assessment.	
		U	One or more significant defects exist. The exterior pipe conditions observed indicate there may be a change in pipe condition since the last condition assessment. The interior condition of pipes has not been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures.	
		NA	There are no discharge pipes / culverts.	
12. Riprap Revetments & Bank Protection		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.	

Levee Embankments

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
		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.	
		NA	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap		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.	
		NA	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems		A	Features necessary for maintaining levee segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system. Wells have been pump tested within the past 5 years, drainage systems have been camera inspected in the past 5 years, and documentation is provided. Piezometric data collected during >50% load, that can be projected to expected performance under 100% load, may be substituted for pump tests. Nothing is observed or indicated in pumping test or performance data that would indicate the drainage systems won't function as designed during full loading. Maintenance records indicate well rehabilitation is not needed.	
		M	Toe drainage systems or pressure relief wells are physically damaged or are experiencing some clogging or performance losses as evidenced by performance data, pumping tests, or observation. The performance losses are not expected to significantly affect levee performance during full loading. Wells have been pump tested, drainage systems have been inspected within the past 5 years, and documentation is provided. Maintenance records indicate some well rehabilitation is needed	
		U	Any of the following items can result in a U rating. Features necessary for maintaining levee segment / system stability during flood events are allowing material infiltration or are experiencing significant performance losses that are expected to affect levee performance. Detrimental clogging or performance losses are evidenced by performance data, pumping tests, or observation during loading. No maintenance records. No documentation of	

Levee Embankments

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
15. Seepage			pumping tests, drain inspections, or piezometric data collected during >50% load, in the last 5 years.	
		NA	There are no relief wells/ toe drainage systems along this component of the levee segment / system.	
		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. U = Unacceptable. N/A = Not Applicable.

Floodwalls

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
1. Unwanted Vegetation Growth		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 15 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 EP 1110- 2-18 and other relevant Corps policy.	
		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	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.	

Floodwalls

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
3. Closure Structures (Stop Log Closures and Gates) (A or U only)		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.	
		NA	There are no closure structures along this component of the levee segment / system.	
4. Concrete Surfaces		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		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.	

Floodwalls

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
6. Foundation of Concrete Structures		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.	
7. Monolith Joints		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.	
		NA	There are no monolith joints in the floodwall.	

Floodwalls

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
8. Underseepage Relief Wells/Toe Drain Systems		A	Features necessary for maintaining levee segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system. Wells have been pump tested within the past 5 years, drainage systems have been camera inspected in the past 5 years, and documentation is provided. Piezometric data collected during >50% load, that can be projected to expected performance under 100% load, may be substituted for pump tests. Nothing is observed or indicated in pumping test or performance data that would indicate the drainage systems won't function as designed during full loading. Maintenance records indicate well rehabilitation is not needed.	
		M	Toe drainage systems or pressure relief wells are physically damaged or are experiencing some clogging or performance losses as evidenced by performance data, pumping tests, or observation. The performance losses are not expected to significantly affect floodwall performance during full loading. Wells have been pump tested, drainage systems have been inspected within the past 5 years, and documentation is provided. Maintenance records indicate some well rehabilitation is needed	
		U	Any of the following items can result in a U rating. Features necessary for maintaining levee segment / system stability during flood events are allowing material infiltration or are experiencing significant performance losses that are expected to affect floodwall performance. Detrimental clogging or performance losses are evidenced by performance data, pumping tests, or observation during loading. No maintenance records. No documentation of pumping tests, drain inspections, or piezometric data collected during >50% load, in the last 5 years.	
		NA	There are no relief wells/ toe drainage systems along this component of the levee segment / system.	
9. Seepage		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 floodwall foundation	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable. U = Unacceptable. N/A = Not Applicable.

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
1. Vegetation and Obstructions		A	No obstructions, vegetation, debris, or sediment accumulation noted within interior drainage channels or blocking the culverts, inlets, or discharge areas. Concrete joints and weep holes are free of grass and weeds.	
		M	Obstructions, vegetation, debris, or sediment are minor and have not impaired channel flow capacity or blocked more than 10% of any culvert openings, but should be removed. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions, vegetation, debris, or sediment have impaired the channel flow capacity or blocked more than 10% of a culvert opening. Sediment and debris removal required to re-establish flow capacity.	
2. Encroachments		A	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	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.	
		NA	There are no ponding areas associated with the interior drainage system.	

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
4. Fencing and Gates		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.	
		NA	There are no features noted that require safety fencing.	
5. Concrete Surfaces (Such as gatewells, outfalls, intakes, or culverts)		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.	
		NA	There are no concrete items in the interior drainage system.	
6. Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures (Such as gate wells, outfalls, intakes, or culverts)		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.	
		NA	There are no concrete items in the interior drainage system.	

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
7. Foundation of Concrete Structures (Such as culverts, inlet and discharge structures, or gatewells.)		A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. The rate of erosion is such that the structure is expected to remain stable until the next inspection.	
		U	Erosion or bank caving observed that may lead to structural instabilities before the next inspection.	
		NA	There are no concrete items in the interior drainage system.	
8. Monolith Joints		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.	
		NA	There are no monolith joints in the interior drainage system.	

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
9. Culverts/Discharge Pipes		A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. All joints appear to be closed and the soil tight. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods within the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed are in good condition.	
		M	There are some defects noted that should be monitored. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed do not indicate a change in condition since the last condition assessment.	
		U	One or more significant defects exist. The exterior pipe conditions observed indicate there may be a change in pipe condition since the last condition assessment. The interior condition of pipes has not been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures.	
		NA	There are no discharge pipes/ culverts.	
10. Sluice / Slide Gates		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.	
		NA	There are no sluice/ slide gates.	
11. Flap Gates/ Flap Valves/ Pinch Valves		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.	
		NA	There are no flap gates.	

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
12. Trash Racks (non-mechanical)		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.)	
		NA	There are no trash racks, or they are covered in the pump stations section of the report.	
13. Other Metallic Items		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.	
		NA	There are no other significant metallic items.	
14. Riprap Revetments of Inlet/ Discharge Areas		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.	
		NA	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	

Interior Drainage System

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
15. Revetments other than Riprap		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.	
		NA	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable. U = Unacceptable. N/A = Not Applicable.

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
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.	
		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, 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.	
		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.	
3. Safety Compliance		A	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)		A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building		A	The building is in good structural condition with no major foundation settlement problems. The roof is not leaking, intake & exhaust louvers are clear of debris, fans are operational, etc.	
		M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
		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		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.	
		NA	There are no features noted that require safety fencing.	
7. Pumps		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	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.	

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
9. Mechanical Operating Trash Rakes		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.	
		NA	There are no mechanical trash rakes.	
10. 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.	
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.)	
		NA	There are no trash racks.	
12. Fuel System for Pump Engines		A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	
		M	Fuel system is operational and of adequate capacity, but day tank is missing or fuel is not fresh and rotated regularly.	
		U	Fuel system not functional.	
		NA	No fuel system.	

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
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.	
		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		A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	
		M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
		U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger/ Meghometer Testing on Pump Motors and Critical Power Cables		A	Results of Megger or Meghometer tests on pump motors or critical power cables show that the insulation meets manufacturer's or industry standards. Tested within the last year.	
		M	Megger or Meghometer 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 or Meghometer 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.	
		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.	

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
17. Intake and Discharge Pipelines		A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. All joints appear to be closed and the soil tight. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods within the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed are in good condition.	
		M	There are some defects noted that should be monitored. The interior condition of pipes has been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures. The exterior pipe conditions observed do not indicate a change in condition since the last condition assessment.	
		U	One or more significant defects exist. The exterior pipe conditions observed indicate there may be a change in pipe condition since the last condition assessment. The interior condition of pipes has not been verified using television camera videotaping or visual inspection methods at the frequency determined in accordance with Levee Inspections and Site Visits: Standard Operating Procedures.	
18. Sluice/Slide Gates		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.	
		NA	There are no sluice/ slide gates.	
19. Flap Gates/Flap Values/Pinch Values		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.	
		NA	There are no gates on discharge lines from pump station.	

Pump Stations

Rated Item	Rating	Rating Guidelines		Observation Locations with Descriptions and Resulting Item Rating Justification
20. Cranes		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.	
		NA	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.	
		NA	There are no other significant metallic items.	

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