



**US Army Corps
of Engineers®**

Levee Inspection Report

Name of System: Burr Street

Name of Segment: Griffith River Road Levee

NLD System ID: 2605000004

NLD Segment ID: 2604000014

Segment Type: Non-Federally Constructed, local O&M

Levee Sponsor (Name and Organization): Town of Griffith

Inspection Report Prepared by: Brett Hanson

Date(s) of Inspection: 04/30/2021 - 04/30/2021

Other Segments Within This System

Segment Name	NLD Segment ID#	Segment Type	Segment Inspection Rating
Gary Burr St	2604000005	USACE Constructed, Public sponsor O&M	Minimally Acceptable
Griffith	2604000006	USACE Constructed, Public sponsor O&M	Minimally Acceptable

Contents of Inspection Report:

☒ Levee Inspection Summary

Inspection Checklist

- ☒ General Items
- ☒ Levee Embankment
- ☒ Concrete Floodwalls
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- ☐ Pump Stations
- ☐ FDR System Channels

☒ General Instructions

☒ Maps

Type of Inspection: ☐ Routine Inspection ☒ Periodic Inspection ☐ Special Inspection

Purpose of Special Inspection: _____

Ratings:

Segment Rating: ☐ Acceptable ☐ Minimally Acceptable ☒ Unacceptable ☐ No Verdict

System Rating: ☐ Acceptable ☒ Minimally Acceptable ☐ Unacceptable ☐ No Verdict

LSPM Signature: _____

Date Approved: 7/27/21

LSO Signature: _____

Date Approved: 7/27/21

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

Name	Organization	Discipline	Phone Number
Yuki Galisanao	USACE - Chicago District	Lead, Geotechnical	
Anna Dudek	USACE - Chicago District	Structural	
Jeremiah Haley	USACE - Chicago District	Electrical	
Armoni Towner	USACE - Chicago District	Mechanical	
Adam Karr	USACE - Chicago District	Geospatial	
Brett Hanson	USACE - Chicago District	Hydraulics	
Adrian Brudz	USACE - Chicago District	Structural	
Art Rundzaitis	USACE - Chicago District	Construction	
Dan Repay	LCRBDC	Local Sponsor	
Keenan Colquitt	Contractor	Sluice Gate Operator	
Kurt Walker	Contractor	Sluice Gate Operator	
William Brownlee	Contractor	Sluice Gate Operator	
Eric E. Otte	Contractor	Sluice Gate Operator	
Oliver King	Great Lakes Electrical	Pump Operator	
Greg Boudreaux	USACE - Chicago District	Economics	

Segment Rating Rationale:

[Describe the basis of the Segment rating considering (1) the general condition of the segment, (2) the rationale for Item ratings, categorized by Feature that contributed to the Segment rating, and (3) the number or severity of notable observations/deficiencies. The summary may also include information related to the condition of the levee, not otherwise captured in the Levee Inspection Checklist, if applicable.]

Significant issues with large trees in the embankment, a building in the side of the levee, unknown condition of culverts, and major cracking in the floodwall. Minor issues with encroachments, steep slopes, erosion, settlement, rutting, animal activity, and open flap gates.

System Rating Rationale:

[Synthesize information from the Segment rating rationales for each Segment within the System. For single-segment systems, see segment rating rationale above.]

The overall condition assessment of the Burr Street Levee System is rated 'Minimally Acceptable'. Engineering assessments determined that serious items rated as Unacceptable would not prevent the segment/system from performing as intended during the next flood event.

General Items for All Flood Damage Reduction Segments / Systems
For use during all inspections of all Flood Damage Reduction Segments / Systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Operations and Maintenance Manuals	M	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	Justification: It is unknown whether there are O&M manuals for the Griffith River Road segment.
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	A	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	Justification: Griffith has about 300 sandbags in the old salt barn at 630 S. Arbogast. Stockpile of sand from the Krooswick borrow site. They usually borrow sandbags from Munster or Hammond.
		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	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.	Justification: Griffith has a current list of emergency contacts and a good understanding of general O&M. Have arrangements with the School District to utilize three schools for evacuation: 600 Wiggs, 601 Lillian, and 1345 N. Broad St. Have 3 fire stations: Central station located at 130 N Lafayette, North Station located at 1601 Indiana, and South station located at 509 S. Broad. The Town acquired the old Franklin Elementary school at 200 N. Broad when the district closed it and can also be utilized. The YMCA is located there. Griffith Town Hall is utilized as a command center. Griffith uses the RAVE emergency notification system to send messages to residents via phone, email, and web.
		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.	

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**Flood Damage Reduction Segments / Systems
Inspection Report**

General Items for All Flood Damage Reduction Segments / Systems
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Levee Embankments

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	2021-0011 : Large trees on crest. (U) 2021-0013 : Vegetation and trees on riverside toe. (M) 2021-0029 : Small trees and vegetation on riverside toe. (M) 2021-0037 : Small tree on landside slope. (M) 2021-0039 : Tall vegetation on riverside slope. (M) 2021-0053 : Small trees and tall vegetation in ditch on riverside toe. (M) 2021-0058 : Small trees on landside toe. (M) 2021-0080 : Trees and tall vegetation on the landside toe. (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.	Justification: No issues noted.
		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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**Flood Damage Reduction Segments / Systems
Inspection Report**

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Levee Embankments

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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.	2021-0012 : Building in landside slope. Provide as-builts to evaluate the risk to the levee. (U) 2021-0015 : Sign post on crest. (M) 2021-0016 : Chain link fence on riverside toe. (M) 2021-0018 : Sign on crest. (M) 2021-0020 : Trash on riverside toe. (M) 2021-0021 : Fence across levee crest and slopes. (M) 2021-0025 : Fence on crest and landside slope. (M) 2021-0026 : 2 poles on riverside toe. Installed by the owner. (A) 2021-0027 : Fence on landside toe. (M) 2021-0030 : Area with trash on riverside slope. (M) 2021-0032 : Pole on landside slope. Installed by owner. (A) 2021-0036 : Gate on crest. Installed by owner. (A) 2021-0038 : Guardrail on riverside slope. Installed by owner. (A) 2021-0043 : Dumped soil on riverside slope. (M) 2021-0046 : Tire on riverside toe. (M) 2021-0047 : Guardrail on landside toe. Installed by owner. (A) 2021-0054 : Pole on landside toe. Installed by owner. (A) 2021-0056 : Pole on landside toe. Installed by owner. (A) 2021-0057 : Pole on landside slope. Installed by owner. (A) 2021-0059 : Fence on landside toe for lift station. (M) 2021-0065 : Guy wire on riverside toe. (A) 2021-0072 : Debris on riverside toe. (M) 2021-0075 : Fence close to landside toe. (A) 2021-0078 : Box on landside toe. (A)
		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	NA	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	M	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	2021-0049 : Scarps from excavation on riverside slope. (M) 2021-0060 : Steep slopes on landside, as-built. (A)
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	

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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.	2021-0019 : Erosion on rs toe (M) 2021-0035 : Erosion by head wall on rs toe (M) 2021-0041 : Erosion around headwall on waterside toe. (M) 2021-0074 : Erosion around headwall on rs toe (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	M	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	2021-0022 : Low spot on crest (M)
		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.	2021-0042 : Depression on riverside slope. (M) 2021-0044 : Ruts on crest. (M) 2021-0048 : Depression on landside slope. (M) 2021-0061 : Depression on landside slope. (M) 2021-0063 : Depression on riverside slope. (M) 2021-0064 : Ruts on riverside slope. (M) 2021-0066 : Hole on riverside toe. (M) 2021-0076 : Hole on riverside slope. (M)
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	Justification: No issues noted.
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	M	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	2021-0034 : 2 burrows on riverside slope, 3 ft deep sloping towards river. (M)
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	U	A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	2021-0031 : Manhole on riverside toe installed in 2018. (A) 2021-0040 : Manhole on riverside toe installed in 2018. (A) 2021-0050 : Manhole on riverside toe installed in 2018. (A) 2021-0051 : Manhole cover on riverside slope. (A) 2021-0062 : Manhole cover on riverside toe installed in 2018. Manhole lid wasn't bolted in. (M) 2021-0070 : Manhole on riverside slope installed in 2018. Tape removed around gaps. (M) 2021-0077 : Manhole on riverside slope installed in 2018. (M) Justification: The condition of pipes and manholes have not been verified using television camera video taping or visual inspection methods within the past five years. 18-inch CMP 24-inch CMP 12-inch CMP Two 36-inch CMP 12-inch CMP 24-inch CMP 24-inch CMP
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	NA	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	NA	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage	A	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Justification: No issues noted.
		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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Floodwalls

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth	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 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 EM 1110- 2-301 and/or Corps policy for regional vegetation variance.	2021-0007 : Tall vegetation on riverside. (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	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 floodwall.	2021-0004 : Debris on riverside. (M)
		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)	NA	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
4. Concrete Surfaces	U	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.	2021-0001 : Crack/separation at the corner of the floodwall. Further, in-depth inspection is recommended to assess the extent of concrete damage and below-grade condition. Once investigated, repair wall in accordance with EM 1110-2-2002. (U) 2021-0002 : Typical crack on both sides. Seal. (M) 2021-0003 : Large crack. Seal (M) 2021-0005 : Spalling on riverside at monolith. (M) 2021-0006 : Crack and minor spalling. Patch and seal (M) 2021-0008 : Crack on wall along the tieback extension that is not part of the line of protection. (A)
		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.	

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Floodwalls

For use during Initial and Continuing Eligibility Inspections of all floodwalls

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
5. Tilting, Sliding or Settlement of Concrete Structures	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	2021-0009 : Tilting of tieback extension that is not part of the line of protection. (A)
		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	A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	Justification: No issues noted.
		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	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.	Justification: No issues noted.
		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.	

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Floodwalls

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
8. Underseepage Relief Wells/ Toe Drainage Systems	NA	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
9. Seepage	A	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	Justification: No issues noted.
		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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**Flood Damage Reduction Segments / Systems
Inspection Report**

**Floodwalls
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Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
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.	2021-0069 : Tall vegetation on riverside toe. (M) 2021-0071 : Tall vegetation on riverside toe. (M) 2021-0081 : Small trees and tall vegetation on riverside toe. (M)
		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 reestablish 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.	Justification: No issues noted.
		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	NA	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	NA	A	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
		M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
		U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	
		N/A	There are no features noted that require safety fencing.	

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Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
5. Concrete Surfaces (Such as gatewells, 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.	Justification: No issues noted.
		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 (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.	Justification: No issues noted.
		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 (Such as culverts, inlet and discharge structures, or gatewells.)	A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	Justification: No issues noted.
		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.	
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.	Justification: No issues noted.
		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.	

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Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
9. Culverts/ Discharge Pipes	U	A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	Justification: The condition of pipes and manholes have not been verified using television camera video taping or visual inspection methods within the past five years. 18-inch CMP 24-inch CMP 12-inch CMP Two 36-inch CMP 12-inch CMP 24-inch CMP 24-inch CMP
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
10. Sluice / Slide Gates	NA	A	Gates open and close freely to a tight seal or minor leakage. Gate operators are in good working condition and are properly maintained. Sill is free of sediment and other obstructions. Gates and lifters have been maintained and are free of corrosion. Documentation provided during the inspection.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
11. Flap Gates/ Flap Valves/ Pinch Valves	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	2021-0033 : Flap gate closed. (A) 2021-0052 : Both gates stuck open. (M) 2021-0068 : Flap gate underwater. (A) 2021-0073 : Flap gate stuck open with twig. (M) 2021-0082 : Open flapgate (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.	

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Interior Drainage System

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
12. Trash Racks (non-mechanical)	A	A	Trash racks are fastened in place and properly maintained.	Justification: No issues noted.
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station, bars are corroded to the point that up to 10% of the sectional area may be lost. Repair or replacement is required.	
		U	Trash racks are missing or damaged to the extent that they are no longer functional and must be replaced. (For example, more than 10% of the sectional area may be lost.)	
		N/A	There are no trash racks, or they are covered in the pump stations section of the report.	
13. Other Metallic Items	NA	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
		M	Corrosion seen on metallic parts appears to be maintainable.	
		U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
		N/A	There are no other significant metallic items.	
14. Riprap Revetments of Inlet/ Discharge Areas	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.	Justification: No issues noted.
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
15. Revetments other than Riprap	NA	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

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**Flood Damage Reduction Segments / Systems
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Photos

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



Inspect ID: 2021-0011 **Title:** 2604000014_CELRC_2021_A_0011_1_20210430T133453.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Unacceptable - Large trees on crest.



Inspect ID: 2021-0013 **Title:** 2604000014_CELRC_2021_A_0013_1_20210430T133600.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Vegetation and trees on riverside toe.

Photos

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



Inspect ID: 2021-0029 **Title:** 2604000014_CELRC_2021_A_0029_1_20210430T135740.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Small trees and vegetation on riverside toe.



Inspect ID: 2021-0037 **Title:** 2604000014_CELRC_2021_A_0037_1_20210430T140719.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Small tree on landside slope.

Photos

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Inspect ID: 2021-0039 **Title:** 2604000014_CELRC_2021_A_0039_1_20210430T140823.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Tall vegetation on riverside slope.



Inspect ID: 2021-0053 **Title:** 2604000014_CELRC_2021_A_0053_1_20210430T142454.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Small trees and tall vegetation in ditch on riverside toe.

Photos

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	<p>Inspect ID: 2021-0058 Title: 2604000014_CELRC_2021_A_0058_1_20210430T142805.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Minimally Acceptable - Small trees on landside toe.</p>
	<p>Inspect ID: 2021-0080 Title: 2604000014_CELRC_2021_A_0080_1_20210430T145049.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Minimally Acceptable - Trees and tall vegetation on the landside toe.</p>

Photos

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Inspect ID: 2021-0012 **Title:** 2604000014_CELRC_2021_A_0012_1_20210430T133528.jpg **Rated Item:** 3. Encroachments **Caption:** Unacceptable - Building in landside slope. Provide as-builts to evaluate the risk to the levee.



Inspect ID: 2021-0015 **Title:** 2604000014_CELRC_2021_A_0015_1_20210430T133751.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Sign post on crest.

Photos

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

	Inspect ID: 2021-0016 Title: 2604000014_CELRC_2021_A_2021-0016_2_20210430T134656.jpg Rated Item: 3. Encroachments Caption: Minimally Acceptable - Chain link fence on riverside toe.
	Inspect ID: 2021-0018 Title: 2604000014_CELRC_2021_A_0018_1_20210430T134822.jpg Rated Item: 3. Encroachments Caption: Minimally Acceptable - Sign on crest.

Photos

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



Inspect ID: 2021-0020 **Title:** 2604000014_CELRC_2021_A_0020_1_20210430T134948.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Trash on riverside toe.



Inspect ID: 2021-0021 **Title:** 2604000014_CELRC_2021_A_0021_1_20210430T135025.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Fence across levee crest and slopes.

Photos

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



Inspect ID: 2021-0025 **Title:** 2604000014_CELRC_2021_A_0025_1_20210430T135409.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Fence on crest and landside slope.



Inspect ID: 2021-0026 **Title:** 2604000014_CELRC_2021_A_0026_1_20210430T135445.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - 2 poles on riverside toe. Installed by the owner.

Photos

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Inspect ID: 2021-0027 **Title:** 2604000014_CELRC_2021_A_0027_1_20210430T135513.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Fence on landside toe.



Inspect ID: 2021-0030 **Title:** 2604000014_CELRC_2021_A_0030_1_20210430T135851.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Area with trash on riverside slope.

Photos

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



Inspect ID: 2021-0032 **Title:** 2604000014_CELRC_2021_A_0032_1_20210430T140102.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Pole on landside slope. Installed by owner.



Inspect ID: 2021-0036 **Title:** 2604000014_CELRC_2021_A_0036_1_20210430T140635.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Gate on crest. Installed by owner.

Photos

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



Inspect ID: 2021-0038 **Title:** 2604000014_CELRC_2021_A_0038_1_20210430T140746.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Guardrail on riverside slope. Installed by owner.



Inspect ID: 2021-0043 **Title:** 2604000014_CELRC_2021_A_0043_1_20210430T141453.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Dumped soil on riverside slope.

Photos

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

	<p>Inspect ID: 2021-0046 Title: 2604000014_CELRC_2021_A_0046_1_20210430T141659.jpg Rated Item: 3. Encroachments Caption: Minimally Acceptable - Tire on riverside toe.</p>
	<p>Inspect ID: 2021-0047 Title: 2604000014_CELRC_2021_A_0047_1_20210430T141734.jpg Rated Item: 3. Encroachments Caption: Acceptable - Guardrail on landside toe. Installed by owner.</p>

Photos

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



Inspect ID: 2021-0054 **Title:** 2604000014_CELRC_2021_A_0054_1_20210430T142555.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Pole on landside toe. Installed by owner.



Inspect ID: 2021-0056 **Title:** 2604000014_CELRC_2021_A_0055_1_20210430T142634.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Pole on landside toe. Installed by owner.

Photos

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



Inspect ID: 2021-0057 **Title:** 2604000014_CELRC_2021_A_0057_1_20210430T142723.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Pole on landside slope. Installed by owner.



Inspect ID: 2021-0059 **Title:** 2604000014_CELRC_2021_A_0059_1_20210430T142832.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Fence on landside toe for lift station.

Photos

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



Inspect ID: 2021-0065 **Title:** 2604000014_CELRC_2021_A_0065_1_20210430T143301.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Guy wire on riverside toe.



Inspect ID: 2021-0072 **Title:** 2604000014_CELRC_2021_A_0072_1_20210430T144304.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Debris on riverside toe.

Photos

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



Inspect ID: 2021-0075 **Title:** 2604000014_CELRC_2021_A_0075_1_20210430T144639.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Fence close to landside toe.



Inspect ID: 2021-0078 **Title:** 2604000014_CELRC_2021_A_0078_1_20210430T144916.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - Box on landside toe.

Photos

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



Inspect ID: 2021-0049 **Title:** 2604000014_CELRC_2021_A_0049_1_20210430T141854.jpg **Rated Item:** 5. Slope Stability **Caption:** Minimally Acceptable - Scarps from excavation on riverside slope.



Inspect ID: 2021-0060 **Title:** 2604000014_CELRC_2021_A_0060_1_20210430T142917.jpg **Rated Item:** 5. Slope Stability **Caption:** Acceptable - Steep slopes on landside, as-built.

Photos

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



Inspect ID: 2021-0019 **Title:** 2604000014_CELRC_2021_A_0019_1_20210430T134905.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Minimally Acceptable - Erosion on rs toe



Inspect ID: 2021-0041 **Title:** 2604000014_CELRC_2021_A_0041_1_20210430T141226.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Minimally Acceptable - Erosion around headwall on waterside toe.

Photos

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



Inspect ID: 2021-0074 **Title:** 2604000014_CELRC_2021_A_0074_1_20210430T144509.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Minimally Acceptable - Erosion around headwall on rs toe



Inspect ID: 2021-0022 **Title:** 2604000014_CELRC_2021_A_0022_1_20210430T135122.jpg **Rated Item:** 7. Settlement **Caption:** Minimally Acceptable - Low spot on crest

Photos

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



Inspect ID: 2021-0042 **Title:** 2604000014_CELRC_2021_A_0042_1_20210430T141315.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Depression on riverside slope.



Inspect ID: 2021-0044 **Title:** 2604000014_CELRC_2021_A_0044_1_20210430T141529.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Ruts on crest.

Photos

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



Inspect ID: 2021-0048 **Title:** 2604000014_CELRC_2021_A_0048_1_20210430T141807.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Depression on landside slope.



Inspect ID: 2021-0061 **Title:** 2604000014_CELRC_2021_A_0061_1_20210430T142956.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Depression on landside slope.

Photos

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



Inspect ID: 2021-0063 **Title:** 2604000014_CELRC_2021_A_0063_1_20210430T143118.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Depression on riverside slope.



Inspect ID: 2021-0064 **Title:** 2604000014_CELRC_2021_A_0064_1_20210430T143223.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Ruts on riverside slope.

Photos

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



Inspect ID: 2021-0066 **Title:** 2604000014_CELRC_2021_A_0066_1_20210430T143341.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Hole on riverside toe.



Inspect ID: 2021-0076 **Title:** 2604000014_CELRC_2021_A_0076_1_20210430T144722.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Minimally Acceptable - Hole on riverside slope.

Photos

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



Inspect ID: 2021-0034 **Title:** 2604000014_CELRC_2021_A_0034_2_20210430T140337.jpg **Rated Item:** 10. Animal Control **Caption:** Minimally Acceptable - 2 burrows on riverside slope, 3 ft deep sloping towards river.



Inspect ID: 2021-0031 **Title:** 2604000014_CELRC_2021_A_0031_1_20210430T140014.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Acceptable - Manhole on riverside toe installed in 2018.

Photos

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



Inspect ID: 2021-0040 **Title:** 2604000014_CELRC_2021_A_0040_1_20210430T140930.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Acceptable - Manhole on riverside toe installed in 2018.



Inspect ID: 2021-0050 **Title:** 2604000014_CELRC_2021_A_0050_1_20210430T141950.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Acceptable - Manhole on riverside toe installed in 2018.

Photos

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



Inspect ID: 2021-0051 **Title:** 2604000014_CELRC_2021_A_0051_1_20210430T142051.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Acceptable - Manhole cover on riverside slope.



Inspect ID: 2021-0062 **Title:** 2604000014_CELRC_2021_A_0062_1_20210430T143032.jpg **Rated Item:** 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Minimally Acceptable - Manhole cover on riverside toe installed in 2018. Manhole lid wasn't bolted in.

Photos

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



Inspect ID: 2021-0070 **Title:**

2604000014_CELRC_2021_A_0070_2_20210430T143931.jpg **Rated**

Item: 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Minimally Acceptable - Manhole on riverside slope installed in 2018. Tape removed around gaps.



Inspect ID: 2021-0077 **Title:**

2604000014_CELRC_2021_A_0077_1_20210430T144825.jpg **Rated**

Item: 11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) **Caption:** Minimally Acceptable - Manhole on riverside slope installed in 2018.

Photos

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



Inspect ID: 2021-0007 **Title:** 2604000014_CELRC_2021_A_0007_1_20210430T133014.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Minimally Acceptable - Tall vegetation on riverside.



Inspect ID: 2021-0004 **Title:** 2604000014_CELRC_2021_A_0004_1_20210430T132745.jpg **Rated Item:** 2. Encroachments **Caption:** Minimally Acceptable - Debris on riverside.

Photos

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



Inspect ID: 2021-0001 **Title:** 2604000014_CELRC_2021_A_0001_1_20210430T132517.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Unacceptable - Crack/separation at the corner of the floodwall. Further, in-depth inspection is recommended to assess the extent of concrete damage and below-grade condition. Once investigated, repair wall in accordance with EM 1110-2-2002.



Inspect ID: 2021-0002 **Title:** 2604000014_CELRC_2021_A_0002_1_20210430T132559.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Minimally Acceptable - Crack on both sides. Seal.

Photos

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



Inspect ID: 2021-0003 **Title:** 2604000014_CELRC_2021_A_0003_1_20210430T132657.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Minimally Acceptable - Large crack. Seal



Inspect ID: 2021-0005 **Title:** 2604000014_CELRC_2021_A_0005_1_20210430T132834.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Minimally Acceptable - Spalling on riverside at monolith.

Photos

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



Inspect ID: 2021-0006 **Title:** 2604000014_CELRC_2021_A_0006_1_20210430T132938.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Minimally Acceptable - Crack and minor spalling. Patch and seal



Inspect ID: 2021-0008 **Title:** 2604000014_CELRC_2021_A_2021-0008_2_20210430T134212.jpg **Rated Item:** 4. Concrete Surfaces **Caption:** Acceptable - Crack on wall along the tieback extension that is not part of the line of protection.

Photos

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



Inspect ID: 2021-0009 **Title:** 2604000014_CELRC_2021_A_0009_1_20210430T133212.jpg **Rated Item:** 5. Tilting, Sliding or Settlement of Concrete Structures **Caption:** Acceptable - Tilting of tieback extension that is not part of the line of protection.



Inspect ID: 2021-0069 **Title:** 2604000014_CELRC_2021_A_0069_1_20210430T143649.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Minimally Acceptable - Tall vegetation on riverside toe.

Photos

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



Inspect ID: 2021-0071 **Title:** 2604000014_CELRC_2021_A_0071_1_20210430T144225.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Minimally Acceptable - Tall vegetation on riverside toe.



Inspect ID: 2021-0081 **Title:** 2604000014_CELRC_2021_A_0081_1_20210430T145137.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Minimally Acceptable - Small trees and tall vegetation on riverside toe.

Photos

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



Inspect ID: 2021-0033 **Title:** 2604000014_CELRC_2021_A_0033_1_20210430T140211.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Flap gate closed.



Inspect ID: 2021-0052 **Title:** 2604000014_CELRC_2021_A_0052_1_20210430T142207.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Both gates stuck open.

Photos

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



Inspect ID: 2021-0052 **Title:** 2604000014_CELRC_2021_A_2021-0052_2_20210430T142415.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Both gates stuck open



Inspect ID: 2021-0068 **Title:** 2604000014_CELRC_2021_A_0068_1_20210430T143543.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Flap gate underwater.

Photos

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



Inspect ID: 2021-0073 **Title:** 2604000014_CELRC_2021_A_0073_1_20210430T144353.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Flap gate stuck open with twig.



Inspect ID: 2021-0082 **Title:** 2604000014_CELRC_2021_A_0082_1_20210430T145220.jpg **Rated Item:** 11. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Open flapgate

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

A. Purpose of USACE Inspections

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

B. Types of Inspections:

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

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

C. Inspection Boundaries:

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

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

D. Land Use Definitions:

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

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

E. **Use of the Inspection Report Template:**

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

F. **Individual Item / Component Ratings:**

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

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

G. **Overall Segment / System Ratings:**

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

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

H. **Eligibility for PL84-99 Rehabilitation Assistance:**

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

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

I. Reporting:

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

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

J. Notification:

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

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

National Levee Database

NLD

For Official Use Only

LEVEE INSPECTION MAPBOOK

Levee Segment
**Griffith River Road
Levee**

NLD Levee Segment ID
2604000014

Location
Burr Street

Inspection Type
Periodic

Start Date
30-Apr-2021

End Date
30-Apr-2021

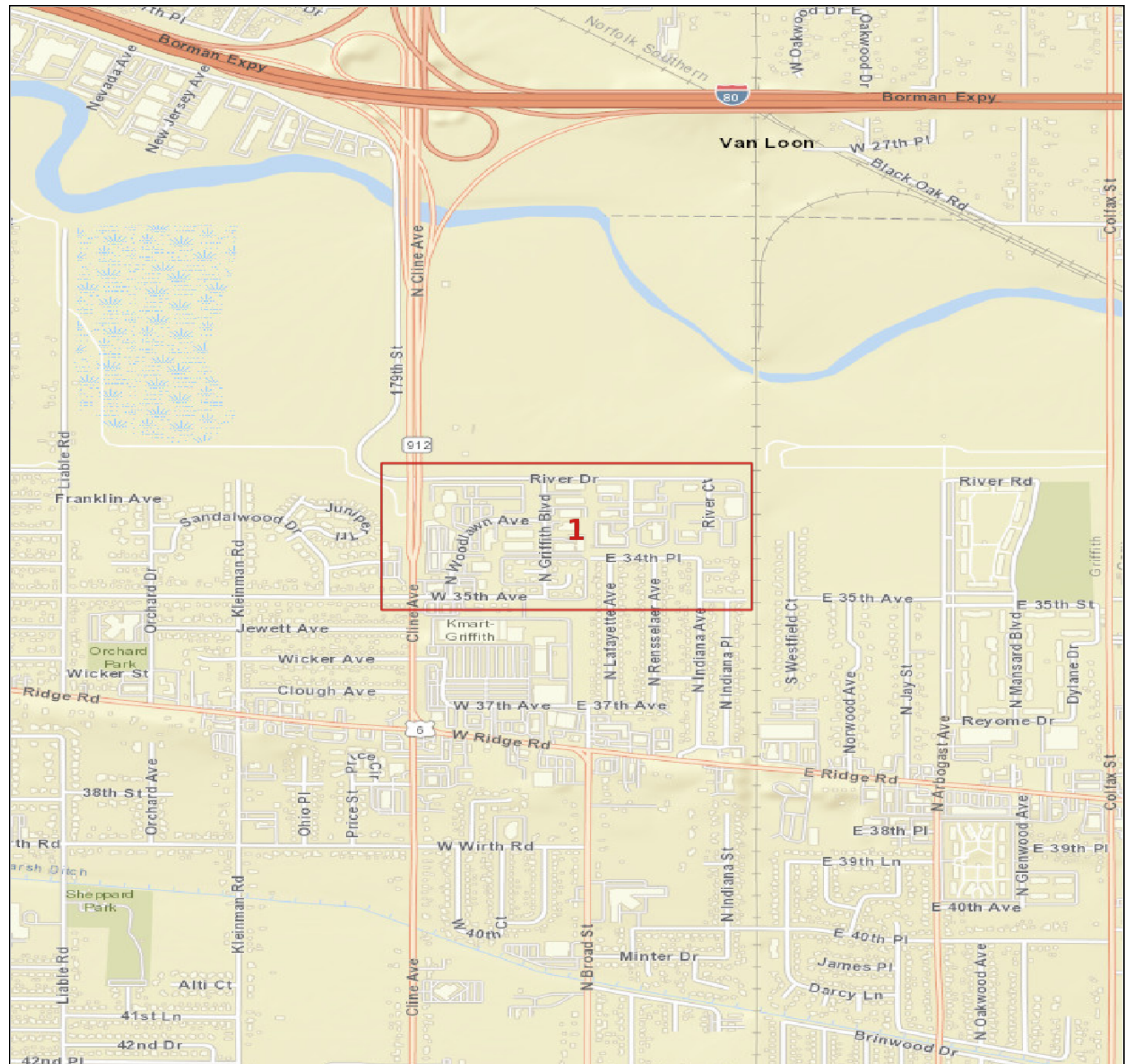
Inspected By
Jeremy Harris, Yuki Galisanao



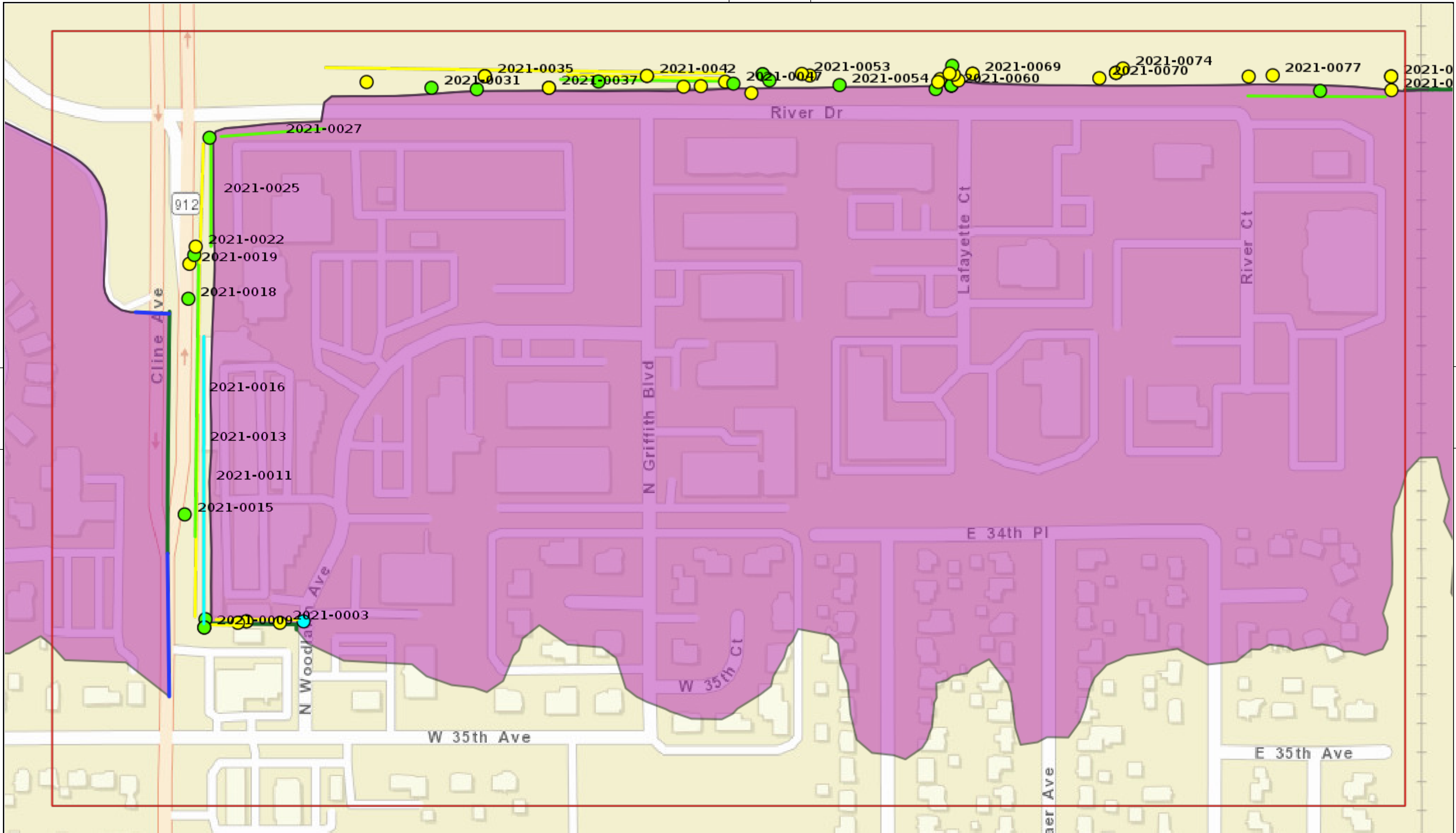
US Army Corps
of Engineers

Levee: Griffith River Road Levee

1 Standard Sheets



NONE



71202

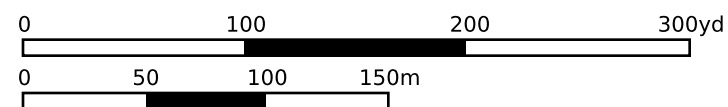
71202



OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

Scale = 1:3000



NONE

NLD

Sheet: 1

30-Apr-2021

Griffith River Road Levee

Type: Periodic

30-Apr-2021