



Formal Inspection Report No. 3

Aniak Levee

Aniak, Alaska

Alaska District, Pacific Ocean Division

Inspection Date: July 24, 2024
Report Date: September 16, 2024

System ID 2105000004
Status: Final

US Army Corps of Engineers
Alaska District



EXECUTIVE SUMMARY

The Alaska District has completed a Formal Inspection (FI) of the Aniak Levee System in general accordance with ER 1110-2-100 and EC 1165-2-218 on July 24, 2024. The FI consisted of a pre-inspection meeting with the local sponsor representatives in Aniak to discuss prior known issues with the levee and a visual walking inspection of the entire extents of the project.

The Aniak Levee protects the City of Aniak, Alaska from flooding, mainly ice jam flooding, caused by the Kuskokwim River (Figure 1). The Federal Aviation Administration (FAA) built a levee at Aniak in 1951 to protect the airport runway. The Corps of Engineers repaired the levee in 1968, raised the crest in 1972, and performed emergency repairs after ice jam floods in 1987, 1989 and 1991. The City of Aniak added approximately 4,000 feet of levee during the 1980's and is the owner and operator of these extensions (Figure 2). The State of Alaska, Department of Transportation and Public Facilities (AKDOT&PF), now the owner of and operator of the airfield portions of the levee (Figure 2), has funded levee work including the 1997 construction of armor protection consisting of an articulated concrete mat on the upstream portions of the levee. The armor protection has reduced damages to this portion of the levee due to ice flows.

The existing levee system is not a ring levee but does provide some measure of flood protection from the Kuskokwim River. Flooding is typically caused by the backwater from ice jams. During ice jam flood events, backwater moves overbank and enters sloughs and drainage channels at the western and downstream end of the city.

Attached are the levee inspection report (Attachment A), and post-inspection map (Attachment B) which contains the locations of the observations noted in Attachment A based on inspection ID.

The main system deficiencies noted are:

- Dense vegetation was observed along the levee crest, side slopes, and within 15 feet of the toe. All vegetation, except for maintained grass, should be cut and/or removed to remain in compliance with EP 1110-2-18.
- Several encroachments are located on the levee crest, toe, and along the side slopes that adversely effect the structural integrity of the levee and hinder access for maintenance, monitoring, and flood fighting. If prior documentation cannot be found of approval for these structures, then they need to be moved to be further than 15 feet from the levee toe or a formal risk assessment needs to be done paid for by the levee sponsor.
- Depressions and rutting along numerous locations that either lower the crown elevation or narrow the crown width should be filled to its original design elevation and side slopes regraded.
- Several areas with ice scour and erosion should be repaired. Short term repairs could include filling in these areas with local fill. Long term solutions would include adding in erosion protection measures such as riprap to the side slopes.
- Articulated concrete mat has exposed ends and toe that should be covered. Some blocks are missing at the toe and need to be replaced.



Figure 1*. Aniak Levee System and Leveed Area
*Note the runway is approximately 1.25 miles for scale

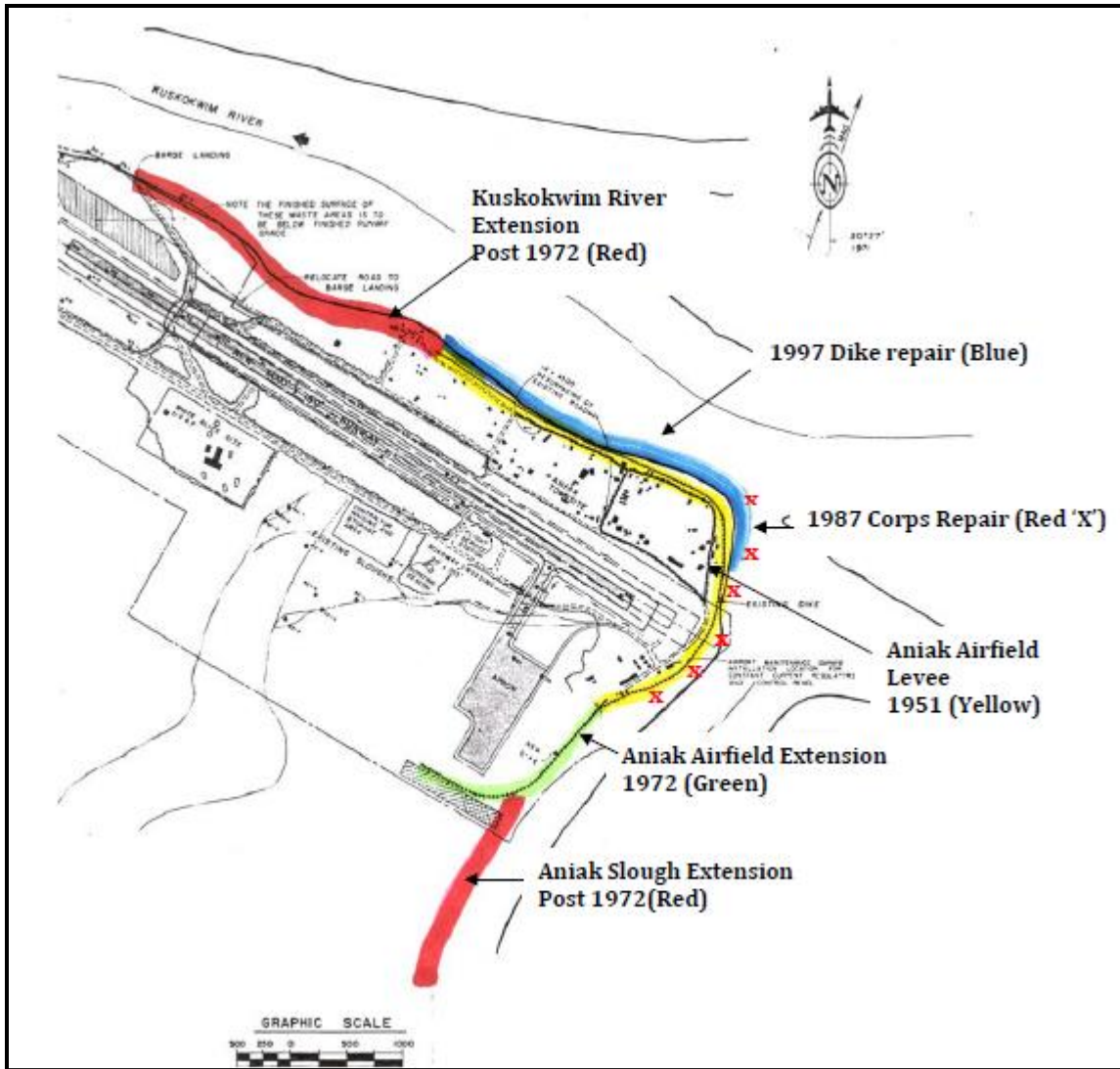


Figure 2*. Levee Construction Location and Dates

*Note the exact extents of the levee sections for ownership between the City of Aniak and AKDOT&PF are unknown at this time

Attachment A
Aniak Levee
Inspection Report



US Army Corps of Engineers ®

Levee Inspection Report

Name of System: Aniak Levee

Name of Segment: Aniak Levee

NLD System ID: 2105000004 NLD Segment ID: 2104000004

Segment Type: Federally Authorized, Locally Owned, Operated, and Maintained

Levee Sponsor (Name and Organization): City of Aniak, Alaska D.O.T. and Public Facilities

Inspection Report Prepared by: Olivia Jobin Date(s) of Inspection: 07/24/2024 - 07/25/2024

Other Segments Within This System

Segment Name	NLD Segment ID#	Segment Type

Contents of Levee Inspection Report:

Levee Inspection Summary

- General Items
- Levee Embankment
- Floodwalls
- Interior Drainage System
- Pump Stations
- FRM Channels

Public Sponsor Pre-Inspection Form

Levee Inspection Reference Guide

Photos

Type of Inspection: Formal Inspection PL84-99 Inspection Special Inspection (mark this if purpose is Initial Eligibility Inspection or Continuing Eligibility Inspection for non-federal systems)

Approval Signature: James Saucedo Date Approved: 2024-09-16

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

Name	Organization	Discipline	Phone Number
Lauren Oliver	USACE - Alaska District	Hydraulic Engineer	907-753-2643
Olivia Jobin	USACE - Alaska District	Hydraulic Engineer	907-753-2770
James Saucedo	USACE - Alaska District	Chief, Engineering Division	907-753-5773
Stephen Simeon	City of Aniak	Public Works	
Francis Vaska	City of Aniak	Public Works	
Twain Cacek	USACE - Alaska District	Geotechnical Engineer	907-753-2784
Lenore Kameroff	City of Aniak	City Manager	907-675-4481

Levee Segment Inspection Summary:

[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.]

A formal inspection of the Aniak Levee was completed on July 24th, 2024. The Aniak Levee was built by the Federal Aviation Administration in 1951 to protect the airport runway from ice jam flooding from the Kuskokwim River. The Corps of Engineers repaired the levee in 1968, raised the crest in 1972, and did emergency repairs on the levee from damage caused by ice jam floods in 1987, 1989, and 1991. The City of Aniak added approximately 4,000 feet of levee during the 1980's. The State of Alaska, Department of Transportation and Public Facilities now owns and operates the airfield portions of the levee, whereas the City of Aniak owns and operates the extensions that were added upstream and downstream of the airport.

There are several areas along the levee that pose a threat to the stability and integrity of the levee due to severe erosion from ice and deep ruts from ATV and vehicle use. Dense vegetation growth impacted our ability to thoroughly inspect the levee and note any other possible deficiencies. Trees can also increase seepage through the levee and cause potential areas for a failure or increased localized erosion. The articulated concrete mat has exposed ends and the toe should be covered. Some blocks are missing at the toe and need to be replaced. It would be advised to add erosion protection measures downstream of the articulated concrete blocks to limit the erosion of the levee side slopes from ice erosion. There are several encroachments along the levee crest, toe, and side slopes that adversely effect the structural integrity of the levee and can impact flood fighting efforts. If prior documentation cannot be found for approval of these structures, then they need to be moved to be further than 15 feet from the toe or a risk assessment needs to be done to allow these structures to remain. This risk assessment would be at the expense of the sponsor.

Levee System Inspection Summary:

[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.]

See summary above.

General Items

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
1. Operations and Maintenance Manuals	M	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)	M	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)	M	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.

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

Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
1. Unwanted Vegetation Growth	U	<p>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.</p>	<p>2024-0002 : There is dense vegetation along the levee crest and slopes. Trees are greater than 2 inches in diameter, with most trees having diameters of 6 inches or greater. Cut vegetation along levee crest, side slopes, and within 15 feet of the toe on the land and river side of the levee.(U)</p> <p>2024-0051 : There is dense vegetation along the levee crest and slopes. Trees are greater than 2 inches in diameter, with most trees having diameters of 6 inches or greater. Cut vegetation along levee crest, side slopes, and within 15 feet of the toe on the land and river side of the levee.(U)</p> <p>2024-0050 : Dense brush impeding ability to inspect levee on waterside slope. Trees along the waterside toe are greater than 2 inches in diameter, with most trees having diameters of 6 inches or greater. Cut vegetation along the side slopes, and within 15 feet of the toe.(U)</p> <p>2024-0011 : Trees greater than 2 inches in diameter along waterside slopes. Cut trees.(U)</p> <p>2024-0041 : Vegetation has been recently cut and is in acceptable condition.(A)</p> <p>2024-0048 : Dense vegetation along side slopes impacting ability to inspect levee. Waterside has trees greater than 2 inches in diameter within 15 feet of toe. Cut vegetation.(U)</p> <p>Justification: There is dense vegetation along the levee crest, side slopes, and within 15 feet of the toe. Trees are greater than 2 inches in diameter, with most trees having diameters of 6 inches or greater. Dense vegetation impacted our ability to thoroughly inspect the levee. Cut vegetation along levee crest,</p>
		<p>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.</p>	
		<p>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.</p>	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
			side slopes, and within 15 feet of the toe on the land and river side of the levee.
2. Sod Cover	NA	A There is good coverage of sod over the levee.	Justification: Not applicable.
		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.	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
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.	2024-0004 : House located within 15 feet of toe.(U) 2024-0007 : Satellite dish on crown of levee.(U)
		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.	2024-0009 : Deck built into levee side slope and there is a house foundation within 15 feet of the toe as well.(U)
		U Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	2024-0010 : Deck within 15 feet of toe.(U) 2024-0012 : Stairs built at levee toe, unknown where toe ends.(U) 2024-0013 : Houses built on levee and within 15 feet of toe.(U) 2024-0015 : Old shed along side slope and toe.(U) 2024-0016 : Houses and fuel tanks within 15 feet of toe.(U) 2024-0017 : Building foundation along slope and toe.(U) 2024-0022 : Telephone poles through levee side slopes.(U) 2024-0026 : Telephone poles through levee crest and at toe.(U) 2024-0029 : House along levee side slope and toe.(U) 2024-0036 : Telephone poles through slope near toe.(U) 2024-0038 : House within 15 feet of toe.(U)

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
			<p>2024-0039 : Fence on crown.(U)</p> <p>2024-0040 : Deck on levee crown into slope.(U)</p> <p>2024-0047 : Telephone poles through levee.(U)</p> <p>Justification: There are several encroachments along the levee, including houses and telephone poles. There is no known documentation where these encroachments were approved. Look for this documentation for approval of these features.</p>
4. Closure Structures	NA	A	<p>Justification: No closure structures.</p>
		U	
		NA	
5. Slope Stability	M	A	<p>Justification: Sections of levee with steep side slopes, almost 1H:1V, seen along levee that pose a risk to the stability of the embankment. See section on Erosion/Bank Caving for more information.</p>
		M	
		U	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
6. Erosion/Bank Caving	U	<p>A No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.</p>	<p>2024-0001 : Erosion cutting into levee embankment and crest. Slopes steeper than 2H:1V.(U)</p>
		<p>M There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.</p>	<p>2024-0021 : Banks over steepened from potential ice erosion. Banks are at almost a 1H:1V side slope. (U)</p>
		<p>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.</p>	<p>2024-0027 : Banks are steepened along levee to almost 1H:1V side slopes potentially from ice erosion. Extent is unclear due to vegetation.(U)</p> <p>2024-0031 : Ice erosion along waterside side slopes and toe. Undercutting of banks starting to occur.(U)</p> <p>Justification: Severe erosion has occurred along sections of the levee from ice erosion that threatens the stability and integrity of the levee. Fill should be added to the levee side slopes to repair these sections and bring them back to a 2H:1V side slope. Ideally, additional bank protection measures (i.e. riprap, articulate concrete blocks, etc.) would be added to protect the banks and reduce the damages from the ice erosion.</p>
7. Settlement	A	<p>A No observed depressions in crown. Records exist and indicate no unexplained historical changes.</p>	<p>Justification: No observed depressions in the crown from settlement.</p>
		<p>M Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.</p>	
		<p>U Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.</p>	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
8. Depressions / Rutting	U	A There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	2024-0003 : Less than 6 inches of rutting along side slopes and toe from 4 wheeler access(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.	2024-0005 : Acceptable trail for 4 wheeler along side slope with no noticeable rutting.(A)
		U There are depressions greater than 6 inches deep that will pond water.	2024-0006 : Road going down the side slope of levee without significant rutting(M) 2024-0008 : Depressions close to 6 inches deep on both slopes and crown from possibly pedestrian foot traffic.(M) 2024-0014 : Depression from where house was removed along levee crest and slope. Depth of depression roughly 1.5 feet deep.(U) 2024-0018 : Walking path depression less than 6 inches deep.(M) 2024-0019 : ATV path rutting greater than 6" in sections.(U) 2024-0020 : ATV trail along side slope with less than 6 inches of rutting.(M) 2024-0023 : ATV trail along side slopes with less than 6 inches of rutting.(M) 2024-0024 : ATV rutting greater than 6 inches deep(U) 2024-0025 : ATV rutting less than 6 inches deep.(M) 2024-0028 : Steep bank and deep rutting from ATV use.(U)

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
			<p>2024-0030 : Pedestrian traffic caused deep rutting and use of ladders to get down steep side slopes of levee.(U)</p> <p>2024-0032 : ATV rutting created steep side slopes with simultaneous erosion from ice and bank undercutting.(U)</p> <p>2024-0035 : ATV trails along side slope with less than 6 inches of rutting.(M)</p> <p>2024-0042 : Road access has caused minor lowering of the crest and lowering of side slopes.(M)</p> <p>2024-0043 : Minor depressions from vehicle traffic on crown.(M)</p> <p>2024-0044 : ATV use along side slope causing minor rutting.(M)</p> <p>2024-0045 : Minor rutting from vehicle traffic on crown.(M)</p> <p>2024-0046 : Road over levee has lowered crown almost a foot.(U)</p> <p>2024-0049 : Minor rutting along crest from vehicle traffic.(M)</p> <p>Justification: Several sections along the levee have areas with depressions greater than 6 inches deep and need to be filled in with gravel.</p>

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
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 cracking was observed along the levee.
		M Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	A	A Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	Justification: No animal burrows were found. Due to the amount of vegetation, it made it difficult to thoroughly inspect the levee for animal burrows.
		M The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
11. Culverts / Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	NA	A There are no breaks, holes, cracks in the discharge pipes / culverts that would result in significant water leakage. 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.	Justification: There are no discharge pipes or culverts.
		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	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.	Justification: There is no riprap protecting this system.
		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.	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
13. Revetments other than Riprap	U	<p>A Existing revetment protection is properly maintained, undamaged, and clearly visible.</p>	<p>2024-0033 : Articulated concrete blocks (ACB) section is starting to erode at the toe. Anchors are exposed in sections.(M)</p> <p>2024-0037 : Erosion at toe along ACB's exposing anchors and wires.(M)</p> <p>2024-0034 : Missing concrete blocks at toe and missing anchors.(U)</p> <p>Justification: Several sections along the toe of the articulated concrete blocks have exposed anchors/wiring, as well as missing blocks. Repair toe to original design and replace missing blocks.</p>
		<p>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.</p>	
		<p>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.</p>	
		<p>NA There are no such revetments protecting this feature of the system.</p>	

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Levee Embankments

Rated Item	Rating	Rating Guidelines	Observation Locations with Descriptions and Resulting Item Rating Justification
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	<p>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.</p>	<p>Justification: There are no relief wells/ toe drainage systems along the levee.</p>
		<p>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.</p>	
		<p>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 pumping tests, drain inspections, or piezometric data collected during >50% load, in the last 5 years.</p>	
		<p>NA There are no relief wells / toe drainage systems along this component of the levee segment / system.</p>	
15. Seepage	A	<p>A No evidence or history of unrepaired seepage, saturated areas, or boils.</p>	<p>Justification: No evidence or history of unrepaired seepage, saturated areas, or boils.</p>
		<p>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.</p>	
		<p>U Evidence or history of active seepage, extensive saturated areas, or boils.</p>	

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Photos



Inspect ID: 2024-0002

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Landside and Waterside

GPS Coordinates Start: 61.5865901250248, -159.552317836159

GPS Coordinates End: 61.5862749836643, -159.551836870088

Caption: 0002 - Unacceptable - There is dense vegetation along the levee crest and slopes. Trees are greater than 2 inches in diameter, with most trees having diameters of 6 inches or greater. Cut vegetation along levee crest, side slopes, and within 15 feet of the toe on the land and river side of the levee.



Inspect ID: 2024-0011

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Waterside Toe

GPS Coordinates Start: 61.5835272506157, -159.539277563014

GPS Coordinates End: 61.5833129914082, -159.538700761208

Caption: 0011 - Unacceptable - Trees greater than 2 inches in diameter along waterside slopes. Cut trees.

Photos



Inspect ID: 2024-0011

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Waterside Toe

GPS Coordinates Start: 61.5835272506157, -159.539277563014

GPS Coordinates End: 61.5833129914082, -159.538700761208

Caption: 0011 - Unacceptable - Trees greater than 2 inches in diameter along waterside slopes. Cut trees.



Inspect ID: 2024-0041

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Landside and Waterside

GPS Coordinates Start: 61.5775966217398, -159.523923135639

GPS Coordinates End: 61.575349977978, -159.52650417729

Caption: 0041 - Acceptable - Vegetation has been recently cut and is in acceptable condition.

Photos



Inspect ID: 2024-0041

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Landside and Waterside

GPS Coordinates Start: 61.5775966217398, -159.523923135639

GPS Coordinates End: 61.575349977978, -159.52650417729

Caption: 0041 - Acceptable - Vegetation has been recently cut and is in acceptable condition.



Inspect ID: 2024-0048

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Landside and Waterside

GPS Coordinates Start: 61.5747041858697, -159.530419129039

GPS Coordinates End: 61.5721677278528, -159.534577849723

Caption: 0048 - Unacceptable - Dense vegetation along side slopes impacting ability to inspect levee. Waterside has trees greater than 2 inches in diameter within 15 feet of toe. Cut vegetation.

Photos



Inspect ID: 2024-0048

Feature Details: Levee Embankments - Unwanted Vegetation Growth - Landside and Waterside

GPS Coordinates Start: 61.5747041858697, -159.530419129039

GPS Coordinates End: 61.5721677278528, -159.534577849723

Caption: 0048 - Unacceptable - Dense vegetation along side slopes impacting ability to inspect levee. Waterside has trees greater than 2 inches in diameter within 15 feet of toe. Cut vegetation.



Inspect ID: 2024-0004

Feature Details: Levee Embankments - Encroachments - Landside Toe

GPS Coordinates Start: 61.5844588, -159.5455018

GPS Coordinates End:

Caption: 0004 - Unacceptable - house located within 15 feet of toe

Photos



Inspect ID: 2024-0007
Feature Details: Levee Embankments - Encroachments - Crown
GPS Coordinates Start: 61.5840004, -159.541076
GPS Coordinates End:
Caption: 0007 - Unacceptable - Satellite dish on crown of levee



Inspect ID: 2024-0009
Feature Details: Levee Embankments - Encroachments - Landside
GPS Coordinates Start: 61.5839227, -159.5406081
GPS Coordinates End:
Caption: 0009 - Unacceptable - Deck built into levee side slope and house foundation within 15 feet of the toe as well

Photos



Inspect ID: 2024-0010
Feature Details: Levee Embankments - Encroachments - Landside Toe
GPS Coordinates Start: 61.5835382, -159.5393326
GPS Coordinates End:
Caption: 0010 - Unacceptable - deck within 15 feet of toe



Inspect ID: 2024-0012
Feature Details: Levee Embankments - Encroachments - Waterside Toe
GPS Coordinates Start: 61.5834947, -159.5388353
GPS Coordinates End:
Caption: 0012 - Unacceptable - stairs built at levee toe, unknown where toe ends

Photos



Inspect ID: 2024-0012

Feature Details: Levee Embankments - Encroachments - Waterside Toe

GPS Coordinates Start: 61.5834947, -159.5388353

GPS Coordinates End:

Caption: 0012 - Unacceptable - stairs built at levee toe, unknown where toe ends



Inspect ID: 2024-0013

Feature Details: Levee Embankments - Encroachments - Landside

GPS Coordinates Start: 61.5833135838947, -159.538667862631

GPS Coordinates End: 61.5831790594335, -159.538373780785

Caption: 0013 - Unacceptable - houses built on levee and within 15 feet of toe

Photos



Inspect ID: 2024-0013

Feature Details: Levee Embankments - Encroachments - Landside

GPS Coordinates Start: 61.5833135838947, -159.538667862631

GPS Coordinates End: 61.5831790594335, -159.538373780785

Caption: 0013 - Unacceptable - houses built on levee and within 15 feet of toe



Inspect ID: 2024-0015

Feature Details: Levee Embankments - Encroachments - Waterside Toe and Slope

GPS Coordinates Start: 61.583165, -159.5382315

GPS Coordinates End:

Caption: 0015 - Unacceptable - old shed along side slope and toe

Photos



Inspect ID: 2024-0016
Feature Details: Levee Embankments - Encroachments - Landside
GPS Coordinates Start: 61.5828605, -159.5373646
GPS Coordinates End:
Caption: 0016 - Unacceptable - houses and fuel tanks within 15 feet of toe



Inspect ID: 2024-0017
Feature Details: Levee Embankments - Encroachments - Landside
GPS Coordinates Start: 61.5827802347874, -159.536962780378
GPS Coordinates End:
Caption: 0017 - Unacceptable - building foundation along slope and toe

Photos



Inspect ID: 2024-0022

Feature Details: Levee Embankments - Encroachments - Landside Slope

GPS Coordinates Start: 61.5818810208364, -159.53448563161

GPS Coordinates End:

Caption: 0022 - Unacceptable - telephone poles through slopes



Inspect ID: 2024-0026

Feature Details: Levee Embankments - Encroachments - Crown

GPS Coordinates Start: 61.5810036942363, -159.530533545236

GPS Coordinates End:

Caption: 0026 - Unacceptable - telephone poles through levee crest and at toe

Photos



Inspect ID: 2024-0026

Feature Details: Levee Embankments - Encroachments - Crown

GPS Coordinates Start: 61.5810036942363, -159.530533545236

GPS Coordinates End:

Caption: 0026 - Unacceptable - telephone poles through levee crest and at toe



Inspect ID: 2024-0029

Feature Details: Levee Embankments - Encroachments - Landside Toe and Slope

GPS Coordinates Start: 61.5804732, -159.5275939

GPS Coordinates End:

Caption: 0029 - Unacceptable - house along levee side slope and toe

Photos



Inspect ID: 2024-0036
Feature Details: Levee Embankments - Encroachments - Landside Slope
GPS Coordinates Start: 61.5795488277199, -159.524208389984
GPS Coordinates End:
Caption: 0036 - Unacceptable - telephone poles through slope near toe



Inspect ID: 2024-0038
Feature Details: Levee Embankments - Encroachments - Landside Toe
GPS Coordinates Start: 61.5786726321674, -159.523633292219
GPS Coordinates End:
Caption: 0038 - Unacceptable - house within 15 feet of toe

Photos



Inspect ID: 2024-0039
Feature Details: Levee Embankments - Encroachments - Crown
GPS Coordinates Start: 61.5783855713181, -159.523655934548
GPS Coordinates End:
Caption: 0039 - Unacceptable - fence on crown



Inspect ID: 2024-0040
Feature Details: Levee Embankments - Encroachments - Slopes and Crown
GPS Coordinates Start: 61.5780609207814, -159.523751107599
GPS Coordinates End:
Caption: 0040 - Unacceptable - deck on levee crown into slope

Photos



Inspect ID: 2024-0040

Feature Details: Levee Embankments - Encroachments - Slopes and Crown

GPS Coordinates Start: 61.5780609207814, -159.523751107599

GPS Coordinates End:

Caption: 0040 - Unacceptable - deck on levee crown into slope



Inspect ID: 2024-0047

Feature Details: Levee Embankments - Encroachments - Crown

GPS Coordinates Start: 61.5746547783807, -159.530414539226

GPS Coordinates End:

Caption: 0047 - Unacceptable - telephone poles through levee

Photos



Inspect ID: 2024-0001
Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside Slope and Crown
GPS Coordinates Start: 61.5865837925561, -159.55232788253
GPS Coordinates End:
Caption: 0001 - Unacceptable - erosion cutting into levee embankment and crest. slopes steeper than 2:1



Inspect ID: 2024-0001
Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside Slope and Crown
GPS Coordinates Start: 61.5865837925561, -159.55232788253
GPS Coordinates End:
Caption: 0001 - Unacceptable - erosion cutting into levee embankment and crest. slopes steeper than 2:1

Photos



Inspect ID: 2024-0021
Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside Slope
GPS Coordinates Start: 61.582047443963, -159.535020712518
GPS Coordinates End: 61.5819307983117, -159.534695366645
Caption: 0021 - Unacceptable - Banks over steepened from potential ice erosion. Banks are at almost a 1H:1V side slope.



Inspect ID: 2024-0021
Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside Slope
GPS Coordinates Start: 61.582047443963, -159.535020712518
GPS Coordinates End: 61.5819307983117, -159.534695366645
Caption: 0021 - Unacceptable - Banks over steepened from potential ice erosion. Banks are at almost a 1H:1V side slope.

Photos



Inspect ID: 2024-0027

Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside Toe and Slope

GPS Coordinates Start: 61.5806633983505, -159.528482205394

GPS Coordinates End:

Caption: 0027 - Unacceptable - Banks are steepened along levee to almost 1H:1V side slopes potentially from ice erosion. Extent is unclear due to vegetation.



Inspect ID: 2024-0031

Feature Details: Levee Embankments - Erosion / Bank Caving - Waterside

GPS Coordinates Start: 61.5805373584117, -159.527179320939

GPS Coordinates End: 61.5803345659354, -159.5262737115

Caption: 0031 - Unacceptable - Ice erosion along waterside side slopes and toe. Undercutting of banks starting to occur.

Photos



Inspect ID: 2024-0003
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope
GPS Coordinates Start: 61.586011944608, -159.550993038576
GPS Coordinates End:
Caption: 0003 - Minimally Acceptable - Less than 6 inches of rutting along side slopes and toe from 4 wheeler access



Inspect ID: 2024-0005
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope
GPS Coordinates Start: 61.5841396, -159.5421721
GPS Coordinates End:
Caption: 0005 - Acceptable - Acceptable trail for 4 wheeler along side slope with no noticeable rutting.

Photos



Inspect ID: 2024-0006
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope
GPS Coordinates Start: 61.5840824, -159.5416683
GPS Coordinates End:
Caption: 0006 - Minimally Acceptable - Road going down the side slope of levee without significant rutting



Inspect ID: 2024-0008
Feature Details: Levee Embankments - Depressions / Rutting - Slopes and Crown
GPS Coordinates Start: 61.5839883455511, -159.540962026609
GPS Coordinates End:
Caption: 0008 - Minimally Acceptable - Depressions close to 6 inches deep on both slopes and crown from possibly pedestrian foot traffic.

Photos



Inspect ID: 2024-0014

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope

GPS Coordinates Start: 61.5832911, -159.5384426

GPS Coordinates End:

Caption: 0014 - Unacceptable - Depression from where house was removed along levee crest and slope. Depth of depression roughly 1.5 feet deep.



Inspect ID: 2024-0018

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope

GPS Coordinates Start: 61.582560563385, -159.536417408288

GPS Coordinates End:

Caption: 0018 - Minimally Acceptable - Walking path depression less than 6 inches deep.

Photos



Inspect ID: 2024-0019

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope

GPS Coordinates Start: 61.5822035111833, -159.535526824283

GPS Coordinates End:

Caption: 0019 - Unacceptable - ATV path rutting greater than 6" in sections.



Inspect ID: 2024-0019

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope

GPS Coordinates Start: 61.5822035111833, -159.535526824283

GPS Coordinates End:

Caption: 0019 - Unacceptable - ATV path rutting greater than 6" in sections.

Photos



Inspect ID: 2024-0019
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope
GPS Coordinates Start: 61.5822035111833, -159.535526824283
GPS Coordinates End:
Caption: 0019 - Unacceptable - ATV path rutting greater than 6" in sections.



Inspect ID: 2024-0020
Feature Details: Levee Embankments - Depressions / Rutting - Landside Slope
GPS Coordinates Start: 61.5820712578179, -159.535111593399
GPS Coordinates End:
Caption: 0020 - Minimally Acceptable - ATV trail along side slope with less than 6 inches of rutting.

Photos



Inspect ID: 2024-0023

Feature Details: Levee Embankments - Depressions / Rutting - Landside Slope

GPS Coordinates Start: 61.5818470711254, -159.534416894273

GPS Coordinates End:

Caption: 0023 - Minimally Acceptable - ATV trail along side slopes with less than 6 inches of rutting.



Inspect ID: 2024-0024

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope

GPS Coordinates Start: 61.5814919050929, -159.532810668804

GPS Coordinates End:

Caption: 0024 - Unacceptable - ATV rutting greater than 6 inches deep

Photos



Inspect ID: 2024-0025
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope
GPS Coordinates Start: 61.5810921227112, -159.530821400053
GPS Coordinates End:
Caption: 0025 - Minimally Acceptable - ATV rutting less than 6 inches deep.



Inspect ID: 2024-0028
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope
GPS Coordinates Start: 61.5806281, -159.5282954
GPS Coordinates End:
Caption: 0028 - Unacceptable - Steep bank and deep rutting from ATV use.

Photos



Inspect ID: 2024-0030
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope
GPS Coordinates Start: 61.5804875, -159.5274792
GPS Coordinates End:
Caption: 0030 - Unacceptable - Pedestrian traffic caused deep rutting and use of ladders to get down steep side slopes of levee.



Inspect ID: 2024-0032
Feature Details: Levee Embankments - Depressions / Rutting - Waterside Toe and Slope
GPS Coordinates Start: 61.5804244572605, -159.526995369844
GPS Coordinates End:
Caption: 0032 - Unacceptable - ATV rutting created steep side slopes with simultaneous erosion from ice and bank undercutting.

Photos



Inspect ID: 2024-0035

Feature Details: Levee Embankments - Depressions / Rutting - Landside Toe and Slope

GPS Coordinates Start: 61.5799472761583, -159.52531654142

GPS Coordinates End: 61.5793616046363, -159.523981134346

Caption: 0035 - Minimally Acceptable - ATV trails along side slope with less than 6 inches of rutting.



Inspect ID: 2024-0035

Feature Details: Levee Embankments - Depressions / Rutting - Landside Toe and Slope

GPS Coordinates Start: 61.5799472761583, -159.52531654142

GPS Coordinates End: 61.5793616046363, -159.523981134346

Caption: 0035 - Minimally Acceptable - ATV trails along side slope with less than 6 inches of rutting.

Photos



Inspect ID: 2024-0042

Feature Details: Levee Embankments - Depressions / Rutting - Landside Slope

GPS Coordinates Start: 61.577013821613, -159.524250036967

GPS Coordinates End:

Caption: 0042 - Minimally Acceptable - Road access has caused minor lowering of the crest and lowering of side slopes.



Inspect ID: 2024-0042

Feature Details: Levee Embankments - Depressions / Rutting - Landside Slope

GPS Coordinates Start: 61.577013821613, -159.524250036967

GPS Coordinates End:

Caption: 0042 - Minimally Acceptable - Road access has caused minor lowering of the crest and lowering of side slopes.

Photos



Inspect ID: 2024-0042
Feature Details: Levee Embankments - Depressions / Rutting - Landside Slope
GPS Coordinates Start: 61.577013821613, -159.524250036967
GPS Coordinates End:
Caption: 0042 - Minimally Acceptable - Road access has caused minor lowering of the crest and lowering of side slopes.



Inspect ID: 2024-0043
Feature Details: Levee Embankments - Depressions / Rutting - Crown
GPS Coordinates Start: 61.576661, -159.5245142
GPS Coordinates End:
Caption: 0043 - Minimally Acceptable - Minor depressions from vehicle traffic on crown.

Photos



Inspect ID: 2024-0044

Feature Details: Levee Embankments - Depressions / Rutting - Waterside Slope

GPS Coordinates Start: 61.5753242624508, -159.526271820698

GPS Coordinates End:

Caption: 0044 - Minimally Acceptable - ATV use along side slope causing minor rutting.



Inspect ID: 2024-0045

Feature Details: Levee Embankments - Depressions / Rutting - Crown

GPS Coordinates Start: 61.5752358, -159.5269528

GPS Coordinates End:

Caption: 0045 - Minimally Acceptable - Minor rutting from vehicle traffic on crown.

Photos



Inspect ID: 2024-0046

Feature Details: Levee Embankments - Depressions / Rutting - Crown

GPS Coordinates Start: 61.5746389034793, -159.53040046414

GPS Coordinates End:

Caption: 0046 - Unacceptable - Road over levee has lowered crown almost a foot.



Inspect ID: 2024-0049

Feature Details: Levee Embankments - Depressions / Rutting - Crown

GPS Coordinates Start: 61.5746543012507, -159.530438483422

GPS Coordinates End: 61.5721961544515, -159.534734365382

Caption: 0049 - Minimally Acceptable - Minor rutting along crest from vehicle traffic.

Photos



Inspect ID: 2024-0033

Feature Details: Levee Embankments - Revetments other than Riprap - Waterside Toe

GPS Coordinates Start: 61.5803690529279, -159.526216531064

GPS Coordinates End:

Caption: 0033 - Minimally Acceptable - Articulated concrete blocks (ACB) section is starting to erode at the toe. Anchors are exposed in sections.



Inspect ID: 2024-0033

Feature Details: Levee Embankments - Revetments other than Riprap - Waterside Toe

GPS Coordinates Start: 61.5803690529279, -159.526216531064

GPS Coordinates End:

Caption: 0033 - Minimally Acceptable - Articulated concrete blocks (ACB) section is starting to erode at the toe. Anchors are exposed in sections.

Photos



Inspect ID: 2024-0033

Feature Details: Levee Embankments - Revetments other than Riprap - Waterside Toe

GPS Coordinates Start: 61.5803690529279, -159.526216531064

GPS Coordinates End:

Caption: 0033 - Minimally Acceptable - Articulated concrete blocks (ACB) section is starting to erode at the toe. Anchors are exposed in sections.



Inspect ID: 2024-0034

Feature Details: Levee Embankments - Revetments other than Riprap - Waterside Toe

GPS Coordinates Start: 61.5802175993587, -159.52524159183

GPS Coordinates End:

Caption: 0034 - Unacceptable - Missing concrete blocks at toe and missing anchors.



**US Army Corps
of Engineers®**

Levee System 2105000004 / Segment 2104000004 Levee Sponsor Pre-Inspection Form

Purpose: To collect the best and most recent information to ensure all maintenance activities, including any improvements or repair work, and any other changes in condition are appropriately noted and documented during this inspection. This information is important to help pre-plan locations for inspectors during the field inspection.

Directions: To be filled out directly by the levee sponsor/maintaining agency or by USACE through interviewing the levee sponsor/maintaining agency during coordination efforts in preparation for the inspection. If the requested information is contained in supplemental documentation that was provided to USACE separately then only referencing to that supplemental documentation or providing information different than what is in the supplemental documentation is required on this form.

Levee Sponsor/Maintaining Agency: City of Aniak, Alaska D.O.T. and Public Facilities

Date of last USACE Inspection: 09/25/2019

Date Levee Sponsor was notified of upcoming Inspection: 05/01/2024

1. Summary of maintenance/repairs/modifications performed since the last USACE inspection (if not captured in maintenance logs/documentation that has been provided separately):

Cut willows and grass, added gravel as needed.

2. Summary of planned actions/improvements/recommendations, but not yet accomplished:

Cut willows and grass, add gravel as needed.

3. Results from inspections conducted by the levee sponsor/maintaining agency (if inspection documentation has not been provided separately):

4. Description of any performance information observed, including successful performance, since the last USACE inspection. Include intervention measures taken, such as floodfighting or operational actions (e.g. operating pumps or closures) during high water events:

5. Identify any specific locations or components that you would like to be closely inspected or have planned testing scheduled (e.g. for pump stations/closures/relief wells) to correspond with the USACE inspection:

Bottom of cement at point.

6. Provide any other information you want to note to have occurred since the last USACE inspection, such as any training/testing/emergency exercises or communication activities:

The purpose of the Levee Inspection Reference Guide is to provide supporting direction for conducting formal and special levee inspections, determining item ratings and finalizing the results of the inspection. This Checklist is to be used with the Standard Operation Procedures (SOP) for Levee Inspections and Site Visits.

A. Definitions:

Approved Alteration - Any action that builds upon, alters, improves, moves, or occupies a levee system. For federally authorized levee systems, a USACE Section 408 permission has been issued. For non-federally constructed and locally maintained levee systems, the levee sponsor is aware of and has approved the alteration. Often, observations of approved alterations are handled under the Encroachment item in the Levee Inspection Checklist. These observations should be noted as such and details included in the observation descriptions.

Encroachment - A non-project item such as trash, debris, structures, obstructions or unauthorized/inappropriate activities within the easement/right-of-way of the levee. For federally authorized levee systems, no USACE Section 408 permission has been issued. For non-federally constructed and locally maintained levee systems, the levee sponsor is unaware of and/or has not approved the non-project item or activity.

Feature - A component of a levee segment/system (e.g. Embankment, Floodwall, Channel, etc.). Levee segments/systems may have multiple Features that function together to exclude water from a defined leveed area. Main Features have their own section in the Levee Inspection Checklist.

Formal Inspection - A pre-scheduled comprehensive levee inspection by a team of subject matter experts led by a professional engineer or professional geologist to (1) document levee condition, (2) assess progress of ongoing risk management activities, (3) inform risk assessments and new risk management recommendations, and (4) include specific evaluations or testing, such as exercising closures or performing relief well pump tests.

Item - A characteristic of a levee Feature (e.g. Encroachments, Sod Cover, Seepage, etc.) that is used to assess the condition of the levee, inform risk assessments, and/or evaluate adequacy of operations and maintenance.

Levee Segment - A levee segment is a discrete portion of a levee system that is operated and maintained by a single entity. A levee segment may be composed of one or more levee features.

Levee System or Levee - A man-made structure that does not cross a watercourse, usually an earthen embankment or floodwall, designed and constructed with the principle function of excluding flood waters for a limited range of flood events from a portion of the floodplain (referred to as "leveed area").

Non-Project Segment - a form of manmade high ground which a levee system/segment ties into, whose existence and performance is necessary for excluding flood waters from the leveed area, but is not under any USACE authority.

Observation - A specific location (point or line) where an Item is evaluated and rated based on the rating guidelines (e.g. an area of levee that has less than 50% sod coverage).

Observation Location Description - Information that further describes the observation location such as land or waterside of the levee or proximity along the slope or crown that provides the reader with sufficient information to find the observation during future maintenance activities or inspections. Observation location descriptions may include the following: landside toe, landside toe and slope, landside levee slope only, landside slope and crown, slopes and crown, crown, slopes, toes, waterside toe, waterside toe and slope, waterside levee slope only, waterside slope and crown, other.

Observation Number - A numeric value that is used to identify a specific observation location during an inspection.

Rating Guidelines - Established parameters to assist an inspector in assessing the visual condition of a specific location (point or line) or multiple locations that serve as the rationale for a final Item rating.

Special Inspection - A formally documented visual inspection that is requested by the levee sponsor or required due to changed conditions or to document performance.

B. Use of the Levee Inspection Checklist:

General Notes:

- Each individual levee segment will have its own inspection results.
- Include only the feature sections of the Checklist that apply to the segment being inspected.
- The Levee Inspection Summary and the section labeled "General Items" is required for every formal and special inspection.
- Specific data fields have been included in the National Levee Database (NLD) to document frequency of inspection, testing or operation and condition for the following Features or Items: pipes, gates, relief wells, toe drains and closures. Applicable tables should be attached to the Levee Inspection Report (see Appendix G of the SOP for Levee Inspections and Site Visits. Specific corrective recommendations should not be included with the inspection results. Inspection results should be used to develop risk-informed recommendations as part of the Levee Risk Management Summary (See EC 1165-2-218).

- If there is a non-project segment as part of a levee system with a federally authorized segment that rights-of-entry could not be obtained, then visual observations should be documented in a Site Visit Summary.

Specific Levee Inspection Features Sections and Items:

- The items labeled “Culverts and Discharge Pipes” includes all gravity flow and pressurized pipes that pass over or through the levee and its foundation, as well as pipes away from the levee. Judgment and consistency should be exercised when determining if pipes should be rated under the Levee Embankment Feature or the Interior Drainage Feature “Culverts and Discharge Pipes” rated items. Pipe closures and drainage features should be rated in their respective items under the Interior Drainage System Feature. This includes all associated gates and drainage ditches, ponding areas and structures that are functioning as interior drainage components along the levee. The pump station feature has a separate item for intake and discharge pipes associated with those Features.
- The items labeled “Closure Structures” includes all closure structures, sandbag and earthen closures, stop logs and gates. Conduit and culvert closures are documented and rated in the appropriate items within the Interior Drainage System Feature.
- The starting and stopping location for embankments, floodwalls and closures shall be determined in a case-by-case basis.
- The section labeled “Flood Risk Management Channels” includes channels that have been constructed in association with the levee system. This section may also be used to inspect channels independent of levees. For “shoaling”, the rating guidelines describing vegetation in a shoal are intended to document the permanence of the shoal and its likely impact on channel integrity or flow capacity.
- The Feature section labeled “Pump Stations” includes the structure of the pump station and all associated intake/discharge pipe, mechanical/electrical systems and equipment.
- For “Interior Drainage System”, “Flood Risk Management Channels”, and “Pump Stations”, conditions of Items that impact levee embankments or floodwalls (e.g. ditches, ponding areas, bank stability or erosion) should also be rated under the appropriate Levee Embankments or Floodwalls section to reflect the impact on levee integrity.

C. Observation Ratings:

General Notes:

- For each Observation noted during the inspection, the inspector will apply a rating to the Observation based on the rating guidelines associated with the corresponding Item. Overall Item ratings are assigned based on summarizing all Observations for that Item.
- When an observation is associated with more than one feature (e.g. observed erosion identified in or near a levee embankment and a flood risk management channel), observations shall be recorded, described, and rated within each appropriate feature and item.
- Inspectors should document any observation/activity that can be visually seen from the levee that may adversely affect the integrity of the levee, even if the concern is beyond the limits of the easement/right- of-way, with documentation that the Observation is outside the easement/right-of-way. It is understood that resolution of these instances may be beyond the control of the levee sponsor.
- Observations associated with approved Section 408 permissions or levee sponsor permits for modifications should be rated under the corresponding Item and feature or under “Encroachments” and documented as such.
- Seepage Observation ratings should consider information collected during recent flood events.
- Most levee systems have components that may require testing or inspection to occur at a frequency that is outside of or more frequent than during pre-scheduled formal inspections to assess their internal condition or operability. These components usually are culverts and discharge pipes; relief wells and toe drains; closures, gates, and valves; and operational systems in pump stations. Requirements for testing/inspection of these components are typically prescribed in the levee’s operations and maintenance manual. A field observation must be recorded of visible conditions of each component during an inspection. This will be used to supplement internal conditional assessments using PACP defect codes for culverts and discharge pipes and toe drains; internal conditional assessments from pump testing for relief wells; and operational adequacy from testing/installation records for closures, gates and valves, and operational systems in pump stations in the Item Rating determination.
- If Districts schedule a walk-through pipe inspection (in accordance with EM 1110-2-2902 and EM 385-1-1) in conjunction with a levee inspection, inspectors must document both the interior conditions by assigning a PACP defect code and the pipe’s exterior conditions with an inspection Observation Rating.

General Guidelines for Assigning Observation Ratings:

Acceptable	Minimally Acceptable	Unacceptable
An “Acceptable” observation rating generally means that it has been operated and maintained in a way that meets the intent of the “Acceptable” rating guidelines herein, and is not expected to have a negative impact on performance.	A “Minimally Acceptable” observation rating generally means that it has deficiencies that should be corrected, but are not currently expected to have a negative impact. If not corrected, these deficiencies could lead to a negative impact on performance.	An “Unacceptable” observation rating generally means that it has serious deficiencies that require correction because these deficiencies are expected to have a negative impact on performance.

Documentation of the levee inspection observations should include, at a minimum:

- Observation number associated with the point or line
- Observation rating of “Acceptable”, “Minimally Acceptable” or “Unacceptable” based on rating guidelines for the Item
- Observation location description
- Levee station, river mile and/or GPS latitude/longitude associated with the point or line
- Description of the observation which is a detailed narrative that explains why an observation was documented and the rationale for the observation rating
- Photo associated with the observation point or line.
- Photo number related to a photograph of the observation point or line.

D. Item Ratings:

- Item ratings will be determined by considering all associated Observation ratings comprehensively. Rationale for overall Item ratings must be documented in the Levee Inspection Checklist.
- If the Item does not exist within the levee segment, the Item should be rated “N/A”.

General Guidelines for Assigning Item Ratings:

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
Observations are rated “Acceptable”, or one or more observations are rated “Minimally Acceptable” but the number or severity of “Minimally Acceptable” Observations collectively is not expected to have a negative impact on performance. No Observations were rated as “Unacceptable.”	One or more Observations are rated “Minimally Acceptable” or one or more Observations were rated “Unacceptable” but the number or severity of Observations collectively are not currently expected to have a negative impact, but if not corrected deficiencies could lead to a negative impact on performance.	One or more Observations are rated “Unacceptable” and the number or severity of Observations collectively has are expected to have a negative impact on performance.

Attachment B
Post-Inspection Map

Levee Inspection Map

Aniak Levee

Location: Aniak, AK
Type: Formal Inspection
Inspection Date: July 24, 2024
Inspected by: Olivia Jobin, Lauren Oliver,
and Twain Cacek

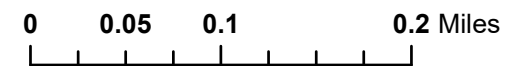
Observation Points

- Acceptable
- Minimally Acceptable
- Unacceptable

Observation Lines

- Acceptable
- Minimally Acceptable
- Unacceptable

Note: The numbers associated with the observation lines and points are the observation IDs from the levee inspection report.



US Army Corps
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