AGENDA

Red Run Intercounty Drain Drainage Board
Macomb and Oakland Counties

May 17, 2023 – 10:30 a.m.
Office of the Oakland County Water Resources Commissioner
One Public Works, Building 95 West
Waterford, Michigan, and Microsoft Teams

1. Call meeting to order

   Board Members:
   Michael Gregg, Chair, Michigan Department of Agriculture and Rural Development
   Candice Miller, Macomb County Public Works Commissioner
   Jim Nash, Oakland County Water Resources Commissioner

2. Approval of the meeting agenda for May 17, 2023

3. Approval of Drainage District Board Meeting Minutes from April 19, 2023

4. Public Comment

5. Red Run Freedom Hill
   a. Account of Project Standing

6. Present U.S. Army Corps. of Engineers Inspection Report

7. Present U.S. Army Corps. of Engineers Spill Response Work Plan Agreement for Approval

8. Present trial balance

9. Present for approval payment of invoices in the amount of $1,543.75

10. Other business

11. Adjourn

Agenda Item No. 3

Board Meeting Minutes from
April 19, 2023

Minutes of the Meeting
of the Intercounty Drainage Board for the
Red Run Drain

April 19, 2023

Minutes of the regular meeting of the Drainage Board of the Red Run Drain Drainage District held at the office of the Oakland County Water Resources Commissioner, One Public Works Drive, Building 95 West, Waterford, Michigan on the 19th day of April at 10:00 a.m. Eastern Standard Time and via Microsoft Teams.

Present:

Michael Gregg, Chairperson and Deputy for Gary McDowell, Director of the Michigan Department of Agriculture and Rural Development; Candice Miller, Member and Macomb County Public Works Commissioner; and Anne Vaara for Jim Nash, Secretary and Oakland County Water Resources Commissioner.

Also Present: Representing the office of the Macomb County Public Works Commissioner; Brian Baker, Norb Franz, Jeff Bednar and Danielle Devlin. Representing the office of the Oakland County Water Resources Commissioner: Steve Korth, Gary Nigro, Lesli Maes, George Nichols, Meg Koss, and Stephanie Lajdziak. Others in attendance: Jeff Ragle (OC Fiscal Services); Shannon Bergt (U.S. Army); Nancy Kolinski (Hubbell, Roth & Clark); Brady Harrington (MDARD)

1. Call meeting to order.
Chairperson Gregg called the meeting to order at 10:02 a.m.

2. Agenda.
Motion by Miller, supported by Vaara, to approve the April 19, 2023, agenda as presented.

Adopted: YEAS – 3
NAYS – 0

3. Minutes.
Motion by Vaara, supported by Miller, to approve the minutes of the March 15, 2023, meeting.

Adopted: YEAS – 3
NAYS – 0

4. Public Comment.
None.

5. Freedom Hill.

5a. HRC – Account of Project Standing
Nancy Kolinski gave the Board an update on the Freedom Hill projects. Again, due to the current season, not much progress can be made, but most work is expected to be

completed in the Fall of this year once the invasive species control program results have been realized.

Ms. Kolinksi advised the Board of access concerns along Metro Parkway. She noted that 4 wheelers and 4x4 vehicles were on the trail and although a snow fence was put up, discussion of a permanent fence ensued to limit access. Discussion of seasonal closures proceeded due to the concern of flooding along the trail. Ms. Kolinski advised that it could be possible to close the trail at Schoenherr and Metro Parkway with a gate, but more options can be considered if closures are something the Board would like to consider due to the delicate balance of Michigan weather. It was agreed that discussion with Sterling Heights would be appropriate to address off-road vehicle access signage and concerns.

Ms. Kolinski briefly noted that the Phase II project will be completed by American Engineers, and they submitted 65% plans to the Army Corps. of Engineers with comments due back at the end of the week of April 24th.

Motion by Vaara, supported by Miller, to receive and file the Freedom Hill update as presented.

Adopted: YEAS – 3
NAYS – 0

5b. Pipeline Magazine Article

Macomb County presented an article from Pipeline Magazine highlighting the hike and bike path within the Drainage District in the City of Sterling Heights (attached).

Motion by Miller, supported by Vaara, to receive and file the Pipeline Magazine article as presented.

Adopted: YEAS – 3
NAYS – 0

6. Detroit Arsenal Regional Defense Assessment of Resilience Phase II Partnership Letter

Shannon Bergt with U.S. Army Garrison – Detroit Arsenal presented a letter requesting to partner with the Drainage District in a grant from the Office of Local Defense Community Cooperation (OLDCC). As discussed in great detail at the March 2023 meeting, this partnership will provide essential reporting and recommendations regarding the infrastructure and the effects of climate change. Discussion of the steps to follow ensued. It was advised that with the Board's approval of the partnership letter presented, it would allow a work session to be scheduled to come up with the scope to attach to the application to pursue the project study.

Motion by Miller, supported by Vaara, to approve the Department of Defense request for partnership on the resiliency grant and authorize the Chairman of the Board to execute the grant agreement after review by staff and then authorize the 10% grant match of up to $150,000, which would include in kind services.

Adopted: YEAS – 3
NAYS – 0

7. Trial Balance.
Mr. Nichols presented the Trial Balance report dated April 12, 2023, indicating a cash available balance of $1,193,908.76. Motion by Vaara, supported by Miller, to receive and file the updated Trial Balance as provided.

Adopted: YEAS – 3
NAYS – 0

8. Invoices and/or Reimbursement of the Drain Revolving Fund.
A request for approval of payment of invoices and/or reimbursement of the Drain Revolving Fund in the amount of $2,995.23 was presented. Motion by Miller, supported by Vaara, to approve the payment of invoices and/or reimbursement of the Drain Revolving Fund as presented.

Adopted: YEAS – 3
NAYS – 0

9. Other Business.
Gary Nigro advised the Board of a rust-colored hue in the Drainage District that was brought to staff's attention on Sunday, April 9th. Mr. Nigro advised that a resident called 911 and Warren Fire Department did test the water, which came back with negative results and a neutral PH. It was also noted that staff was sent out on Monday, April 10th and the hue was gone.

George Nichols reminded the Board that weather permitting, the walk through of the Drain with the Army Corps of Engineers and Drainage District representatives is scheduled for Thursday, May 11th

10. Adjourn.
Motion by Vaara, supported by Miller, to adjourn the April 19, 2023, meeting at 11:01 a.m.

Adopted: YEAS – 3
NAYS – 0

Next Regular Meeting: *Office of the Oakland County Water Resources Commissioner, One Public Works Drive, Building 95 West, Waterford, Michigan* and electronically at 10:30 a.m., Eastern Standard Time on May 17, 2023.

Anne Vaara, Acting Secretary
Red Run Intercounty Drain Drainage Board

STATE OF MICHIGAN)
)SS.
COUNTY OF OAKLAND)

I hereby certify that the foregoing is a true and complete copy of the minutes of the Red Run Intercounty Drain Drainage Board, at a meeting held on the 19th day of April 2023 and that the meeting was conducted and public notice was given in compliance with the Open Meetings Act being Act 267, Public Acts of Michigan, 1976, as may be amended from time to time and that the minutes were kept and will be or have been made available to the public as required by the Act.

IN WITNESS WHEREOF, I have hereunto affixed my official signature on this 19th day of April 2023.

Anne Vaara, Acting Secretary
Red Run Intercounty Drain Drainage Board

Agenda Item No. 4

Public Comment

Agenda Item No. 5

Red Run Freedom Hill

Red Run Drain Freedom Hill Restoration

Account of Project Standing

APS #: 29

Time Period: April 01, 2023 thru April 30, 2023

Prepared By: Nancy Kolinski
Date Issued: May 02, 2023

Project Task Summary:

Construction Update:

- Project on winter shut down

Focus of Efforts in Next Period /Spring:

- Failed B&B (balled & burlapped) at Schoenherr Rd trailhead, Metro Pkwy trailhead, and along Red Run, to be replaced (timeframe: Spring 2023).
- Native seeding of the area beneath the power transmission lines on the north side of Red Run remains to be completed (Fall 2023). Site preparation will need to be re-done (removal of existing vegetation, tilling of earth, etc.), prior to placement of Lo Prairie seed and mulch.
- Due to the amount of invasive species (Japanese Hops) treated in 2022, plantings are being postponed until Fall
    - Native shrub plantings in the Transition Side Slope along Sterling Relief remain to be planted (Fall 2023).
    - Bare-root tree plantings in the Transition Side Slope along Red Run remain to be planted (Fall 2023).
    - Planting of bare-root shrubs and herbaceous plugs along the south side of the amphitheater to be planted (Fall 2023).
- Site visit to review project area and identify impacts from winter season.

Critical Decisions Made:

- N/A

Outstanding Critical Questions:

- N/A

Client Assistance Needed:

- Access concerns along Metro Parkway
- Trail flooding and possible seasonal closures.

Schedule Concerns

- Contract with LJ Construction will be extended thru Fall of 2023

Scope and/or Budget Concerns:

- None at this time

Red Run Drain Supplemental Services

Project Task Summary:

Task 1 – Permitting- In Progress

- Submitted USACE Section 408 Certification – Full approval unknown.

Task 2 – Drainage District Assistance- In Progress

Task 3 – Monitoring Assistance- In Progress

Task 4– Grant Reporting- In Progress

- No work for this period

Task 5 – Meetings- No work requested under this task

Task 6 – USACE Phase 2 Coordination-. Red Run South bank (AEI): Design started. Biweekly meetings of the design team occur. 65% plans submitted.

Task 7 – Project Signage- No work requested under this task

Miscellaneous:

- GWK Outfall project (KZF): Final documents submitted to USACE. Funding for implementation is yet to be allocated by USACE.
- Invasive species – Coordination continues.
  - Next treatment May 2023
- Red Run Spill Response USACE Work Plan Agreement submitted for review and execution
- Annual Red Run Drain Walk Thru with USACE scheduled for May 11th
- Red Run Resilience Study - Staff is working with the Office of Local Defense Community (OLDCC) and University of Michigan. Discussion ongoing with staff and OLDCC. The study is expected to have a 10% local match.

Critical Decisions Made:

- N/A

Outstanding Critical Questions:

- No at this time.

Client Assistance Needed:

- None at this time

Schedule Concerns

- N/A

Scope and/or Budget Concerns:

- N/A

Agenda Item No. 6

U.S. Army Corps. of Engineers Inspection Report

National Levee Database

NLD

For Official Use Only

LEVEE INSPECTION MAPBOOK

Levee Segment

Red Run Drain

NLD Levee Segment ID
2704000028

Location
Red Run Drain

Inspection Type
Routine

Start Date
06-May-2022

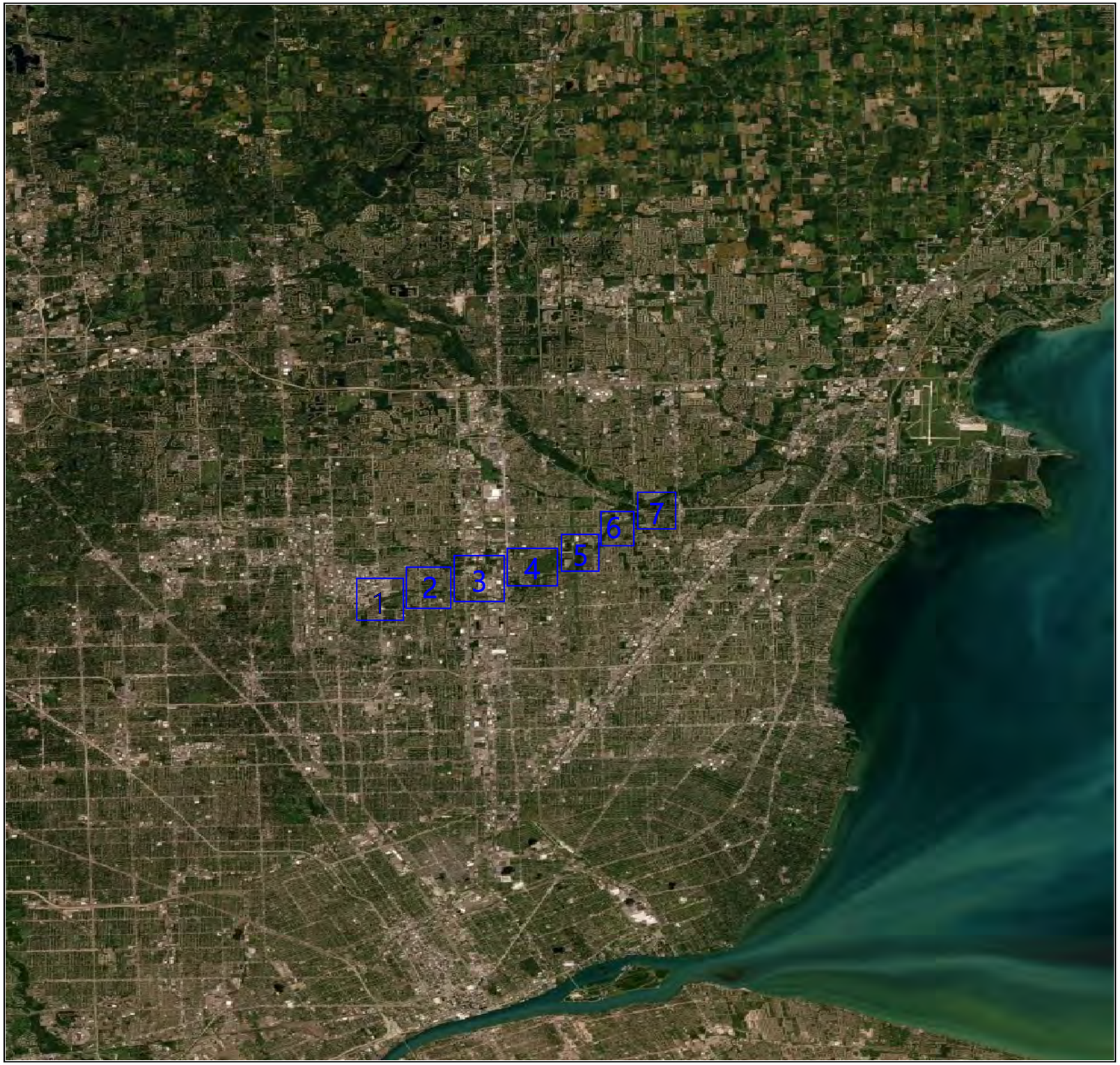
End Date
06-May-2022

Inspected By
Azza Tulba, Tina P Kowitz

US Army Corps of Engineers

SHEET INDEX

Levee: Red Run Drain



MAP ELEMENTS

7 Standard Sheets

0 2 4 6mi
0 5 10 15km

N

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 1 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 2 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 3 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 4 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 5 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS

- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 Feet

NLD

Sheet: 6 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

N

OBSERVATIONS
- Acceptable
- Minimally Acceptable
- Unacceptable
- Not Applicable

0 250 500 1,000 1,500 2,000 2,500
Feet

NLD

Sheet: 7 06-May-2022

Red Run Drain

Type: Routine 06-May-2022

US Army Corps of Engineers ®

Levee Inspection Report

Name of System: Red Run Drain

Name of Segment: Red Run Drain

NLD System ID: 2705000026 NLD Segment ID: 2704000028

Segment Type: USACE Constructed, Public sponsor O&M

Levee Sponsor (Name and Organization): Red Run Intercounty Drain

Inspection Report Prepared by: Azza Tulba Date(s) of Inspection: 05/06/2022 - 05/06/2022

Other Segments Within This System

Segment Name	NLD Segment ID#	Segment Type	Segment Inspection Rating

Contents of Inspection Report:

- ☒ Levee Inspection Summary
- Inspection Checklist
  - ☐ General Items
  - ☐ Levee Embankment
  - ☐ Concrete Floodwalls
  - ☐ Interior Drainage System
  - ☐ Pump Stations
  - ☒ FDR System Channels
- ☒ Public Sponsor Pre-Inspection Form
- ☒ National Flood Insurance Program (NFIP) - 44 CFR 65.10 Provision Ev
- ☐ 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: Tina Kowitz, P.E. Date Approved: 6/1/2022

LSO Signature: Phillip Ross, P.E. Date Approved: 6/21/2022

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

Name	Organization	Discipline	Phone Number
Tina P Kowitz	USACE - Detroit District	Levee Safety Program Manager	313 226-6719
Phillip Ross	USACE - Detroit District	Chief, Engineering and Construction	313-226-4761
Azza Tulba	USACE - Detroit District	Geotechnical Engineer	313-226-2713
Adam Virga	USACE - Detroit District	Project Engineer, Detroit Area Office	313-226-1315
Dovg Stover	WRC		
Steve Roznowski	Spicer Group		
Nancy Kolinski	HRC		
Anne Valur	WRC		
Steve Kelh	WRC		
George Nichocs	WRC		
Jim Nash	WRC		
Danielle Devlin	MCPWD		
Jeff Bednar	MCPWD		
Mike Gregg	MDARD		

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.]

The Red Run Drain project is not a levee segment, and an overall levee segment rating was not assigned. See the attached channel inspection checklist for individual ratings.

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.]

N/A (Channel project)

Flood Damage Reduction Channels: Red Run Drain

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	**Justification:** No vegetation was observed within the channel.
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling (sediment deposition)	**M**	**A**	No shoaling or minor, non-vegetated shoaling is present.	2022-0003 : Minor shoaling of channel bottom. (M) 2022-0005 : Minor shoaling of channel bottom. (M) 2022-0006 : Minor shoaling of channel bottom. (M) 2022-0007 : Minor shoaling. (M) 2022-0022 : Minor shoaling. (M) 2022-0023 : Minor shoaling. Noted oily sheen spill. County reported spill, and had oil booms deployed. (M) 2022-0027 : Minor shoaling. (M) 2022-0308 : Minor shoaling. Noted manhole location. (M) 2022-0321 : Minor shoaling of channel bottom. (M) 2022-0326 : Shoaling of channel bottom. (U) 2022-0346 : Minor shoaling. (M) 2022-0351 : No shoaling noted at Metro Parkway Bridge. (A) 2022-0352 : No shoaling at Utica Rd Bridge. (A) 2022-0353 : Minor shoaling. (M) **Justification:** Shoaling of channel bottom is observed at several locations.
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	

Flood Damage Reduction Channels: Red Run Drain

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
3. Encroachments	**M**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	2022-0010 : Unauthorized drain pipe outlet from a house. (M) 2022-0020 : An old pump shed noted, sink hole due to corroded pipe underneath. (noted, but not part of project) (A) 2022-0030 : J-Hooks construction. Bench will be regraded to eliminate standing water. Rated as M since modifications were not approved. (M) 2022-0031 : Launching riprap to address erosion. Rated as M since modifications were not approved. (M) 2022-0318 : Yard waste dumped on river bank. (M) 2022-0338 : Oily sheen noted. County reported spill, and had oil booms deployed. (M) 2022-0347 : Dumping of yard waste (M) 2022-0348 : Plastic tarp on banks prevent vegetation from establishing. (M) **Justification:** Waste and plastic tarp dumped on channel banks. J-hook modification was submitted to USACE for approval in Nov 2021, but is not yet approved. The sponsor has proceeded with construction at their own risk due to their concern with erosion near the landfill area.
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	

Flood Damage Reduction Channels: Red Run Drain

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
4. Erosion	**U**	**A**	No head cutting or horizontal deviation observed.	2022-0002 : Steep slopes. Toe erosion. (M) 2022-0009 : Toe erosion (M) 2022-0011 : Bank erosion. (M) 2022-0012 : Toe erosion. Outlet location noticed. (M) 2022-0013 : Bank erosion. (M) 2022-0014 : Bank and toe erosion. (M) 2022-0015 : Sloughing of bank. (M) 2022-0017 : Bank and toe erosion under Denton Dr bridge. (M) 2022-0018 : Typical condition of toe erosion. (M) 2022-0021 (U) 2022-0024 : Bank and toe erosion. (M) 2022-0025 : Typical conditions of bank erosion. (M) 2022-0026 : Large depression on bank. (M) 2022-0029 : Eroded banks. (M) 2022-0300 : Toe erosion. (M) 2022-0301 : Erosion, slope stability. Overly steep slopes with past failures. (M) 2022-0302 : Slope failures. (M) 2022-0303 : S : Toe erosion. (M) 2022-0304 : Heavier erosion of bank. Access road unsafe. (U) 2022-0305 : Recent slope failure. (M) 2022-0306 : Toe and bank erosion. (M) 2022-0309 : Repaired areas stable. (A) 2022-0310 : Typical erosion. (M) 2022-0313 : Toe erosion. Outlet location also noted. (M) 2022-0314 : Recent failure (M) 2022-0315 : Bank failure. (M) 2022-0316 : Bank failure. (U) 2022-0317 : Toe erosion. (M) 2022-0319 : Toe erosion. (M) 2022-0320 : Heavier slope failure, bank and toe. (U) 2022-0323 : Recent slope failure (U) 2022-0324 : Heavy erosion around manhole (M)
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				2022-0325 : Toe erosion. (M) 2022-0327 : Toe erosion. (M) 2022-0329 : Typical erosion. (M) 2022-0330 : Slope failure (M) 2022-0331 : Eroded slope. (M) 2022-0332 : Toe erosion and rust colored seepage noted. (M) 2022-0333 : Typical erosion of banks. (M) 2022-0339 : Slope failure on high bank (U) 2022-0340 : Erosion and oil sheen noted. County reported spill, and had oil booms deployed. (M) 2022-0341 : High, deep slope failure. (U) 2022-0342 : Depression on bank. (M) 2022-0344 : Steep slopes. Bank erosion. (M) 2022-0345 : Eroded banks. (M) 2022-0349 : Toe erosion. (M) 2022-0350 : Eroded banks. (M) **Justification:** No head cutting or horizontal deviation was noted on the channel bottom. However, significant erosion and slope failures were noted throughout the project. NOTE: We strongly recommend closing access roads along the top of the unstable banks to vehicles.
5. Concrete Surfaces	**NA**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
6. Tilting, Sliding or Settlement of Concrete Structures	**NA**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures	**NA**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. 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 stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
8. Slab and Monolith Joints	**NA**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves	**M**	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	2022-0004 : Outfall in poor condition. (M) 2022-0008 : Manhole location. (A) 2022-0016 : Sediment deposition near left riverbank toe. (A) 2022-0019 : Drain outlet. (A) 2022-0028 : Outlet location. (A) 2022-0307 : Manhole location. (A) 2022-0311 : Plugged drainpipe. Phragmites indicate standing water behind drain. (U) 2022-0322 : Erosion around pipe noted. (M) 2022-0334 : Outlet location. (A) 2022-0335 : Erosion of bank due to drain outlets. (M) 2022-0337 : Macomb County Drain discharge point to the Red Run Drain. Not part of USACE constructed project. Oily sheen noted and reported. (A) 2022-0343 : Sediment blocking outlet. (M) **Justification:** Plugged outlets need cleaning. Erosion of pipe base.
		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.	

Flood Damage Reduction Channels: Red Run Drain

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

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
10. Riprap Revetments & Banks	**M**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	2022-0328 : Trees in riprap (M) **Justification:** Some vegetation in riprap.
		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.	
11. Revetments other than Riprap	**M**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	2022-0336 : Steel sheet pile is tilting towards the channel. (M) **Justification:** Minor tilting of steel sheet pile.
		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.	

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

	**Inspect ID:** 2022-0003 **Title:** 2704000028_CELRE_2022_A_2022-0003_2_20220506T134434.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling of channel bottom.
	**Inspect ID:** 2022-0005 **Title:** 2704000028_CELRE_2022_A_0005_1_20220506T134834.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling of channel bottom.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0006 **Title:** 2704000028_CELRE_2022_A_0006_1_20220506T135204.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling of channel bottom.
	**Inspect ID:** 2022-0006 **Title:** 2704000028_CELRE_2022_A_2022-0006_2_20220506T135318.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling of channel bottom.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0007 **Title:** 2704000028_CELRE_2022_A_0007_1_20220506T140326.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.
	**Inspect ID:** 2022-0022 **Title:** 2704000028_CELRE_2022_A_0022_1_20220506T170228.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.

	**Inspect ID:** 2022-0023 **Title:** 2704000028_CELRE_2022_A_0023_3_20220506T170325.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.
	**Inspect ID:** 2022-0023 **Title:** 2704000028_CELRE_2022_A_2022-0023_4_20220506T170628.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling. Noted oily sheen spill. County reported spill, and had oil booms deployed.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0027 **Title:** 2704000028_CELRE_2022_A_0027_1_20220506T173941.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.
	**Inspect ID:** 2022-0308 **Title:** 2704000028_CELRE_2022_A_0308_1_20220506T135544.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0308 **Title:** 2704000028_CELRE_2022_A_0308_2_20220506T135553.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling. Noted manhole location.
	**Inspect ID:** 2022-0321 **Title:** 2704000028_CELRE_2022_A_0321_1_20220506T143901.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling of channel bottom.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0326 **Title:** 2704000028_CELRE_2022_A_0326_1_20220506T150225.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Unacceptable - Shoaling of channel bottom.
	**Inspect ID:** 2022-0346 **Title:** 2704000028_CELRE_2022_A_0346_2_20220506T174142.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0351 **Title:** 2704000028_CELRE_2022_A_0351_1_20220506T185400.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Acceptable - No shoaling noted at Metro Parkway Bridge.
	**Inspect ID:** 2022-0351 **Title:** 2704000028_CELRE_2022_A_0351_2_20220516T155017.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Acceptable - No shoaling noted at Metro Parkway Bridge.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0352 **Title:** 2704000028_CELRE_2022_A_0352_1_20220516T182535.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Acceptable - No shoaling at Utica Rd Bridge.
	**Inspect ID:** 2022-0352 **Title:** 2704000028_CELRE_2022_A_0352_2_20220516T182639.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Acceptable - No shoaling at Utica Rd Bridge.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0353 **Title:** 2704000028_CELRE_2022_A_0353_1_20220601T133455.jpg **Rated Item:** 2. Shoaling (sediment deposition) **Caption:** Minimally Acceptable - Minor shoaling.
	**Inspect ID:** 2022-0010 **Title:** 2704000028_CELRE_2022_A_0010_1_20220506T141705.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Unauthorized drain pipe outlet from a house.

	**Inspect ID:** 2022-0020 **Title:** 2704000028_CELRE_2022_A_0020_2_20220506T163542.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - An old pump shed noted, sink hole due to corroded pipe underneath. (noted, but not part of project)
	**Inspect ID:** 2022-0020 **Title:** 2704000028_CELRE_2022_A_2022-0020_6_20220506T163908.jpg **Rated Item:** 3. Encroachments **Caption:** Acceptable - An old pump shed noted, sink hole due to corroded pipe underneath. (noted, but not part of project)

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0030 **Title:** 2704000028_CELRE_2022_A_0030_1_20220506T180553.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - J-Hooks construction. Bench will be regraded to eliminate standing water. Rated as M since modifications were not approved.
	**Inspect ID:** 2022-0030 **Title:** 2704000028_CELRE_2022_A_0030_2_20220506T180615.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - J-Hooks construction. Bench will be regraded to eliminate standing water. Rated as M since modifications were not approved.

	**Inspect ID:** 2022-0030 **Title:** 2704000028_CELRE_2022_A_2022-0030_4_20220506T182122.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - J-Hooks construction. Bench will be regraded to eliminate standing water. Rated as M since modifications were not approved.
	**Inspect ID:** 2022-0031 **Title:** 2704000028_CELRE_2022_A_0031_1_20220506T183013.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Launching riprap to address erosion. Rated as M since modifications were not approved.

	**Inspect ID:** 2022-0031 **Title:** 2704000028_CELRE_2022_A_0031_2_20220506T183030.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Launching riprap to address erosion. Rated as M since modifications were not approved.
	**Inspect ID:** 2022-0318 **Title:** 2704000028_CELRE_2022_A_0318_1_20220506T142255.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Yard waste dumped on river bank.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0338 **Title:** 2704000028_CELRE_2022_A_0338_1_20220506T170321.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Oily sheen noted. County reported spill, and had oil booms deployed.
	**Inspect ID:** 2022-0347 **Title:** 2704000028_CELRE_2022_A_0347_1_20220506T174457.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Dumping of yard waste

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0348 **Title:** 2704000028_CELRE_2022_A_0348_1_20220506T174822.jpg **Rated Item:** 3. Encroachments **Caption:** Minimally Acceptable - Plastic tarp on banks prevent vegetation from establishing.
	**Inspect ID:** 2022-0002 **Title:** 2704000028_CELRE_2022_A_0002_1_20220506T133352.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Steep slopes. Toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0002 **Title:** 2704000028_CELRE_2022_A_2022-0002_4_20220506T133640.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Steep slopes. Toe erosion.
	**Inspect ID:** 2022-0009 **Title:** 2704000028_CELRE_2022_A_0009_1_20220506T141352.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion

	**Inspect ID:** 2022-0011 **Title:** 2704000028_CELRE_2022_A_0011_1_20220506T141823.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank erosion.
	**Inspect ID:** 2022-0012 **Title:** 2704000028_CELRE_2022_A_0012_1_20220506T142436.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.

	**Inspect ID:** 2022-0012 **Title:** 2704000028_CELRE_2022_A_0012_2_20220506T142447.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion. Outlet location noticed.
	**Inspect ID:** 2022-0013 **Title:** 2704000028_CELRE_2022_A_0013_1_20220506T143838.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0014 **Title:** 2704000028_CELRE_2022_A_0014_1_20220506T145729.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion.
	**Inspect ID:** 2022-0014 **Title:** 2704000028_CELRE_2022_A_0014_2_20220506T145740.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0015 **Title:** 2704000028_CELRE_2022_A_0015_1_20220506T145949.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Sloughing of bank.
	**Inspect ID:** 2022-0015 **Title:** 2704000028_CELRE_2022_A_2022-0015_2_20220506T150052.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Sloughing of bank.

	**Inspect ID:** 2022-0017 **Title:** 2704000028_CELRE_2022_A_0017_1_20220506T151555.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion under Denton Dr bridge.
	**Inspect ID:** 2022-0017 **Title:** 2704000028_CELRE_2022_A_0017_3_20220506T151618.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion under Denton Dr bridge.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0018 **Title:** 2704000028_CELRE_2022_A_0018_1_20220506T152558.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical condition of toe erosion.
	**Inspect ID:** 2022-0021 **Title:** 2704000028_CELRE_2022_A_0021_1_20220506T170005.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Bank failure. Recommend closing access road.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0024 **Title:** 2704000028_CELRE_2022_A_0024_1_20220506T172249.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion.
	**Inspect ID:** 2022-0024 **Title:** 2704000028_CELRE_2022_A_0024_2_20220506T172301.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0024 **Title:** 2704000028_CELRE_2022_A_0024_3_20220506T172340.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank and toe erosion.
	**Inspect ID:** 2022-0025 **Title:** 2704000028_CELRE_2022_A_0025_1_20220506T172615.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical conditions of bank erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0025 **Title:** 2704000028_CELRE_2022_A_0025_2_20220506T172630.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical conditions of bank erosion.
	**Inspect ID:** 2022-0026 **Title:** 2704000028_CELRE_2022_A_0026_1_20220506T173553.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Large depression on bank.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0029 **Title:** 2704000028_CELRE_2022_A_0029_1_20220506T174609.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded banks
	**Inspect ID:** 2022-0029 **Title:** 2704000028_CELRE_2022_A_0029_2_20220506T174618.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded banks

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0029 **Title:** 2704000028_CELRE_2022_A_0029_3_20220506T174726.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded banks
	**Inspect ID:** 2022-0300 **Title:** 2704000028_CELRE_2022_A_0300_1_20220506T132531.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.

	**Inspect ID:** 2022-0300 **Title:** 2704000028_CELRE_2022_A_0300_2_20220506T132542.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0301 **Title:** 2704000028_CELRE_2022_A_0301_1_20220506T133537.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Erosion, slope stability. Overly steep slopes with past failures.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0301 **Title:** 2704000028_CELRE_2022_A_0301_2_20220506T133550.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Erosion, slope stability. Overly steep slopes with past failures.
	**Inspect ID:** 2022-0302 **Title:** 2704000028_CELRE_2022_A_0302_1_20220506T133909.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Slope failures.

	**Inspect ID:** 2022-0303 **Title:** 2704000028_CELRE_2022_A_0303_1_20220506T134246.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0303 **Title:** 2704000028_CELRE_2022_A_0303_2_20220506T134301.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0304 **Title:** 2704000028_CELRE_2022_A_0304_1_20220506T134650.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Heavier erosion of bank. Access road unsafe.
	**Inspect ID:** 2022-0305 **Title:** 2704000028_CELRE_2022_A_0305_1_20220506T134814.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Recent slope failure.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0306 **Title:** 2704000028_CELRE_2022_A_0306_1_20220506T135225.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe and bank erosion.
	**Inspect ID:** 2022-0309 **Title:** 2704000028_CELRE_2022_A_0309_1_20220506T135653.jpg **Rated Item:** 4. Erosion **Caption:** Acceptable - Repaired areas stable.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0310 **Title:** 2704000028_CELRE_2022_A_0310_1_20220506T135917.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical erosion.
	**Inspect ID:** 2022-0310 **Title:** 2704000028_CELRE_2022_A_0310_2_20220506T135929.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0313 **Title:** 2704000028_CELRE_2022_A_0311_1_20220506T140545.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion. Outlet location also noted.
	**Inspect ID:** 2022-0314 **Title:** 2704000028_CELRE_2022_A_0314_1_20220506T140854.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Recent failure

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0315 **Title:** 2704000028_CELRE_2022_A_0315_1_20220506T140928.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Bank failure.
	**Inspect ID:** 2022-0316 **Title:** 2704000028_CELRE_2022_A_0316_1_20220506T141036.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Bank failure.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0317 **Title:** 2704000028_CELRE_2022_A_0317_1_20220506T141308.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0319 **Title:** 2704000028_CELRE_2022_A_0319_1_20220506T142450.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0320 **Title:** 2704000028_CELRE_2022_A_0320_2_20220506T143620.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Heavier slope failure, bank and toe.
	**Inspect ID:** 2022-0320 **Title:** 2704000028_CELRE_2022_A_0320_3_20220506T143633.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Heavier slope failure, bank and toe.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0323 **Title:** 2704000028_CELRE_2022_A_0323_1_20220506T145420.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Recent slope failure
	**Inspect ID:** 2022-0324 **Title:** 2704000028_CELRE_2022_A_0324_1_20220506T150033.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Heavy erosion around manhole

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0325 **Title:** 2704000028_CELRE_2022_A_0325_1_20220506T150157.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0327 **Title:** 2704000028_CELRE_2022_A_0327_1_20220506T151555.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0327 **Title:** 2704000028_CELRE_2022_A_0327_2_20220506T151615.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0329 **Title:** 2704000028_CELRE_2022_A_0329_1_20220506T152646.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical erosion.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0330 **Title:** 2704000028_CELRE_2022_A_0330_1_20220506T152906.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Slope failure
	**Inspect ID:** 2022-0331 **Title:** 2704000028_CELRE_2022_A_0331_1_20220506T153227.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded slope.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0332 **Title:** 2704000028_CELRE_2022_A_0332_1_20220506T153345.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion and rust colored seepage noted.
	**Inspect ID:** 2022-0333 **Title:** 2704000028_CELRE_2022_A_0333_1_20220506T163729.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Typical erosion of banks.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0339 **Title:** 2704000028_CELRE_2022_A_0339_1_20220506T170436.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - Slope failure on high bank
	**Inspect ID:** 2022-0340 **Title:** 2704000028_CELRE_2022_A_0340_1_20220506T170604.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Erosion and oil sheen noted. County reported spill, and had oil booms deployed.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0341 **Title:** 2704000028_CELRE_2022_A_0341_1_20220506T170800.jpg **Rated Item:** 4. Erosion **Caption:** Unacceptable - High, deep slope failure.
	**Inspect ID:** 2022-0342 **Title:** 2704000028_CELRE_2022_A_0342_1_20220506T172428.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Depression on bank.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0344 **Title:** 2704000028_CELRE_2022_A_0344_1_20220506T173702.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Steep slopes. Bank erosion.
	**Inspect ID:** 2022-0345 **Title:** 2704000028_CELRE_2022_A_0345_1_20220506T173948.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded banks.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0349 **Title:** 2704000028_CELRE_2022_A_0349_1_20220506T174854.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Toe erosion.
	**Inspect ID:** 2022-0350 **Title:** 2704000028_CELRE_2022_A_0350_1_20220506T182942.jpg **Rated Item:** 4. Erosion **Caption:** Minimally Acceptable - Eroded banks.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0004 **Title:** 2704000028_CELRE_2022_A_0004_1_20220506T134537.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Outfall in poor condition.
	**Inspect ID:** 2022-0008 **Title:** 2704000028_CELRE_2022_A_0008_2_20220506T140458.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Manhole location.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0016 **Title:** 2704000028_CELRE_2022_A_0016_1_20220506T150311.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Sediment deposition near left riverbank toe.
	**Inspect ID:** 2022-0019 **Title:** 2704000028_CELRE_2022_A_0019_1_20220506T152924.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Drain outlet.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0028 **Title:** 2704000028_CELRE_2022_A_0028_1_20220506T174044.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Outlet location.
	**Inspect ID:** 2022-0307 **Title:** 2704000028_CELRE_2022_A_0307_1_20220506T135413.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Manhole location.

	**Inspect ID:** 2022-0311 **Title:** 2704000028_CELRE_2022_A_0311_1_20220510T140117.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Unacceptable - Plugged drainpipe. Phragmites indicate standing water behind drain.
	**Inspect ID:** 2022-0322 **Title:** 2704000028_CELRE_2022_A_0322_1_20220506T144206.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Erosion around pipe noted.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0334 **Title:** 2704000028_CELRE_2022_A_0334_1_20220506T164014.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Outlet location.
	**Inspect ID:** 2022-0335 **Title:** 2704000028_CELRE_2022_A_0335_1_20220506T164400.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Erosion of bank due to drain outlets.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0337 **Title:** 2704000028_CELRE_2022_A_0337_1_20220506T165923.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Acceptable - Macomb County Drain discharge point to the Red Run Drain. Not part of USACE constructed project. Oily sheen noted and reported.
	**Inspect ID:** 2022-0343 **Title:** 2704000028_CELRE_2022_A_0343_1_20220506T172735.jpg **Rated Item:** 9. Flap Gates/ Flap Valves/ Pinch Valves **Caption:** Minimally Acceptable - Sediment blocking outlet.

Photos: Red Run Drain

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

	**Inspect ID:** 2022-0328 **Title:** 2704000028_CELRE_2022_A_0328_1_20220506T151834.jpg **Rated Item:** 10. Riprap Revetments & Banks **Caption:** Minimally Acceptable - Trees in riprap
	**Inspect ID:** 2022-0336 **Title:** 2704000028_CELRE_2022_A_0336_1_20220506T164546.jpg **Rated Item:** 11. Revetments other than Riprap **Caption:** Minimally Acceptable - Steel sheet pile is tilting towards the channel.

US Army Corps of Engineers ®

Flood Damage Reduction System 2705000026 / Segment 2704000028
Public Sponsor Pre-Inspection Form

The following information is to be provided by the levee district sponsor prior to an inspection. This information will be used to help evaluate the organizational capability of the levee district to manage the levee segment / system maintenance program.

1. Levee segment / system and sponsor: (name of the segment / system and levee sponsor)

System 2705000026 / Segment 2704000028 CELRE

2. Reporting period: (month/day/year to month/day/year)

to

3. Summary of maintenance required by last inspection report:

4. Summary of maintenance performed this reporting period:

5. Summary of maintenance planned next reporting period:

6. Summary of changes to segment / system since last inspection:

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

National Flood Insurance Program (NFIP) - 44 CFR 65.10 Provision Evaluation

FINDING		44 CFR 65.10 Criterion	CFR Section
☐ POSITIVE	☐ NEGATIVE	All closure devices, whether manual or automatic, are operated in accordance with an officially adopted operation manual.	65.10(c)
☐ POSITIVE	☐ NEGATIVE	Manuals document a flood warning system that will be used to trigger emergency operation activities and demonstration that sufficient flood warning time exists for the completed operation of all closure structures.	65.10(c)(1)i
☐ POSITIVE	☐ NEGATIVE	Manuals identify specific actions and assignments of responsibility by individual name or title.	65.10(c)(1)ii
☐ POSITIVE	☐ NEGATIVE	Manuals identify provisions for periodic operation of closure structures for testing and training purposes, in accordance with the adopted operation manual.	65.10(c)(1)iii
☐ POSITIVE	☐ NEGATIVE	Officially adopted maintenance plans documents the formal procedure that ensures that the stability, height, & overall integrity of the levee and its associated structures and systems are maintained.	65.10(d)
☐ POSITIVE	☐ NEGATIVE	Maintenance plans specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for their performance.	65.10(d)

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

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

B. **Types of Inspections:**
The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

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

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

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

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

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

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

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

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

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

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

H. **Eligibility for PL84-99 Rehabilitation Assistance:**
Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

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

I. **Reporting:**

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

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)

b. Photos of the general system condition and noted deficiencies.

c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.

d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.

e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. **Notification:**

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

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

Agenda Item No. 7

Spill Response Work Plan Agreement

OAKLAND COUNTY
WATER RESOURCES COMMISSIONER

MEMORANDUM

TO: Michael Gregg, Chairman of the Drainage Board for the Red Run Drain

FROM: George P. Nichols, P.E., Civil Engineer III, GPN
Oakland County Water Resources Commissioner

SUBJECT: Red Run Spill Response USACE Work Plan Agreement

DATE: May 17, 2023

The Red Run Intercounty Drain receives an average of ten (10) discharges of unidentified pollutants per year requiring staff from Sterling Heights, Warren, Oakland County Water Resources Commissioner and Macomb County Public Works Office to mobilize, investigate, react, and clean up the affected areas. As discussed with the Board, the Counties have been working together over the past few years to improve the process and explore boom and monitoring technologies. These on-going efforts, along with some engineering consultant time, are eligible to be used as a match for a Planning Assistance to States grant from the US Army Corps of Engineers. Staff has led discussions with the Army Corps to create the scope for developing a spill response plan as outlined in attached Agreement with the Department of the Army.

With the urbanization of the Red Run Drain watershed, spills in the drain will require a prompt and effective response to protect the drain. This grant will work toward increasing efficiency, speed of detection and reaction time. Entering into this agreement will leverage funds already being expended to develop a spill response plan.

A 50% District match of $204,760 will be provided from cash contributions and in-kind contributions of staff time, contractor fees, and consultant fees to assist with the development of a detection program and to create a pilot boom installation procedure. Specifically, the Drainage Board will be responsible for creating access points to the drain (bank stabilization) for the installation of booms and to evaluate locations and types of booms to increase response time and protection to the drain.

During the December 2021 assessment, there was $125,00 budgeted for spill response work. Some of this budget has been used for costs developing this scope, meetings with the communities, and on-going engineering consultant activities, leaving a balance of approximately $100,000. There was also an assessment of $241,596 for contingency items that would be used for projects/drain repairs as needed before the next round of assessments was implemented. Therefore, to proceed with this project, $104,760 will need to be transferred from the contingency line item to the spill response line item.

Requested Action

Approval to enter into an Agreement with the Department of the Army for the development of a comprehensive plan to improve spill response procedures within the Red Run Drain, and to allocate $204,760 for the in-kind match contribution. Also, to authorize the Chairman to sign the attached agreement on behalf of the Red Run Drain Drainage District.

AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
RED RUN INTER-COUNTY DRAIN DRAINAGE BOARD, MICHIGAN
FOR DEVELOPMENT OF A COMPREHENSIVE PLAN

THIS AGREEMENT is entered into this ___ day of _____, ____, by and between the Department of the Army (hereinafter the "Government"), represented by the District Commander for the Detroit District (hereinafter the "District Commander") and Red Run Inter-County Drain Drainage Board, Michigan (hereinafter the "Non-Federal Sponsor"), represented by the Board Chair.

WITNESSETH, THAT:

WHEREAS, Section 22 of the Water Resources Development Act of 1974, as amended (42 U.S.C. 1962d-16) authorizes the Secretary of the Army, acting through the Chief of Engineers, to provide assistance in the preparation of a comprehensive water resources plan (hereinafter the "Plan") to a State, group of States, or non-Federal interest working with a State, and to establish and collect fees for the purpose of recovering 50 percent of the costs of such assistance except that Secretary may accept and expend non-Federal funds provided that are in excess of such fee; and

WHEREAS, the Government and the Non-Federal Sponsor have the full authority and capability to perform in accordance with the terms of this Agreement.

NOW, THEREFORE, the parties agree as follows:

1. The Government shall develop the Plan, in coordination with the Non-Federal Sponsor, in accordance with the attached Scope of Work, and any modifications thereto, that specifies the scope, cost, and schedule for activities and tasks, including the Non-Federal Sponsor's in-kind services. In carrying out its obligations under this Agreement, the Non-Federal Sponsor shall comply with all the requirements of applicable Federal laws and implementing regulations.

2. The Non-Federal Sponsor shall provide 50 percent of the costs for developing the Plan in accordance with the provisions of this paragraph. As of the effective date of this Agreement, the costs of developing the Plan are projected to be $409,520, with the Government's share of such costs projected to be $204,760 and the Non-Federal Sponsor's share of such costs projected to be $204,760, which includes creditable in-kind services projected to be $204,760 and the amount of funds required to meet its cost share projected to be $0.

a. After considering the estimated amount of credit for in-kind services that will be afforded in accordance with paragraph 4, if any, the Government shall provide the Non-Federal Sponsor with a written estimate of the amount of funds required from the Non-Federal Sponsor for the initial fiscal year of development of the Plan, with a fiscal year beginning on October 1st and ending on September 30th of the following year. No later than 15 calendar days

after such notification, the Non-Federal Sponsor shall provide the full amount of such funds to the Government by delivering a check payable to "FAO, USAED, Detroit District (H7) " to the District Commander or by providing an Electronic Funds Transfer of such required funds in accordance with procedures established by the Government.

b. No later than August 1st prior to each subsequent fiscal year during development of the Plan, the Government shall provide the Non-Federal Sponsor with a written estimate of the amount of funds required from the Non-Federal Sponsor during that fiscal year. No later than September 1st prior to that fiscal year, the Non-Federal Sponsor shall provide the full amount of such required funds to the Government using one of the payment mechanisms specified in paragraph 2.a. above.

c. If the Government determines at any time that additional funds are needed from the Non-Federal Sponsor to cover the Non-Federal Sponsor's costs of developing the Plan, the Government shall provide the Non-Federal Sponsor with written notice of the amount of additional funds required. Within 60 calendar days of such notice, the Non-Federal Sponsor shall provide the Government with the full amount of such additional funds.

d. Upon completion of the Plan and resolution of any relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsor with the written results of such final accounting. Should the final accounting determine that additional funds are required from the Non-Federal Sponsor, the Non-Federal Sponsor, within 60 calendar days of written notice from the Government, shall provide the Government with the full amount of such additional funds. Should the final accounting determine that the Non-Federal Sponsor has provided funds in excess of its required amount, the Government shall refund the excess amount, subject to the availability of funds. Such final accounting does not limit the Non-Federal Sponsor's responsibility to pay its share of costs, including contract claims or any other liability that may become known after the final accounting.

3. In addition to its required cost share, the Non-Federal Sponsor may determine that it is in its best interests to provide additional funds for development of the Plan. Additional funds provided under this paragraph and obligated by the Government are not included in calculating the Non-Federal Sponsor's required cost share and are not eligible for credit or repayment.

4. The in-kind services include those activities (including services, materials, supplies, or other in-kind services) that are required for development of the Plan and would otherwise have been undertaken by the Government and that are specified in the Scope of Work and performed or provided by the Non-Federal Sponsor after the effective date of this Agreement and in accordance with the Scope of Work. The Government shall credit towards the Non-Federal Sponsor's share of costs, the costs, documented to the satisfaction of the Government, that the Non-Federal Sponsor incurs in providing or performing in-kind services, including associated supervision and administration. Such costs shall be subject to audit in accordance with paragraph 8 to determine reasonableness, allocability, and allowability, and crediting shall be in accordance with the following procedures, requirements, and limitations:

a. As in-kind services are completed and no later than 60 calendar day after such completion, the Non-Federal Sponsor shall provide the Government appropriate documentation, including invoices and certification of specific payments to contractors, suppliers, and the Non-Federal Sponsor's employees. Failure to provide such documentation in a timely manner may result in denial of credit. The amount of credit afforded for in-kind services shall not exceed the Non-Federal Sponsor's share of costs.

b. No credit shall be afforded for interest charges, or any adjustment to reflect changes in price levels between the time the in-kind services are completed and credit is afforded; for the value of in-kind services obtained at no cost to the Non-Federal Sponsor; or for costs that exceed the Government's estimate of the cost for such item if it had been performed by the Government.

5. The Non-Federal Sponsor shall not use Federal program funds to meet any of its obligations under this Agreement unless the Federal agency providing the funds verifies in writing that the funds are authorized to be used for the Plan. Federal program funds are those funds provided by a Federal agency, plus any non-Federal contribution required as a matching share therefor.

6. Upon 30 calendar days written notice to the other party, either party may elect, without penalty, to suspend or terminate further development of the Plan. Any suspension or termination shall not relieve the parties of liability for any obligation incurred.

7. The parties agree to use their best efforts to resolve any dispute in an informal fashion through consultation and communication. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to the parties. Each party shall pay an equal share of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

8. The parties shall develop procedures for the maintenance by the Non-Federal Sponsor of books, records, documents, or other evidence pertaining to costs and expenses for a minimum of three years after the final accounting. The Non-Federal Sponsor shall assure that such materials are reasonably available for examination, audit, or reproduction by the Government.

a. The Government may conduct, or arrange for the conduct of, audits of the Plan. Government audits shall be conducted in accordance with applicable Government cost principles and regulations. The Government's costs of audits for the Plan shall not be included in the shared costs of the Plan, but shall be included in calculating the overall Federal cost of the Plan.

b. To the extent permitted under applicable Federal laws and regulations, the Government shall allow the Non-Federal Sponsor to inspect books, records, documents, or other evidence pertaining to costs and expenses maintained by the Government, or at the request of the Non-Federal Sponsor, provide to the Non-Federal Sponsor or independent auditors any such information necessary to enable an audit of the Non-Federal Sponsor's activities under this

Agreement. The costs of non-Federal audits shall be paid solely by the Non-Federal Sponsor without reimbursement or credit by the Government.

9. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsor each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other. Neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights a party may have to seek relief or redress against that contractor.

10. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally or mailed by certified mail, with return receipt, as shown below. A party may change the recipient or address for such communications by giving written notice to the other party in the manner provided in this paragraph.

If to the Non-Federal Sponsor:
Jeff Bednar, Environmental Resources Manager
Macomb County Public Works Office
10 South Main Street, 8th Floor
Mount Clemens, MI 48043

If to the Government:
Commander, Detroit District
US Army Corps of Engineers
477 Michigan Avenue
Detroit, MI 48226

11. To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

12. Nothing in this Agreement is intended, nor may be construed, to create any rights, confer any benefits, or relieve any liability, of any kind whatsoever in any third person not a party to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Commander.

DEPARTMENT OF THE ARMY	RED RUN INTER-COUNTY DRAIN DRAINAGE BOARD, MICHIGAN
BY: _____	BY: _____
Brett M. Boyle Lieutenant Colonel, U.S. Army District Engineer	Michael Gregg Board Chair
DATE: _____	DATE: _____

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal officer for the Red Run Inter-County Drain Drainage Board, Michigan, that the Red Run Inter-County Drain Drainage Board, Michigan is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the Red Run Inter-County Drain Drainage Board, Michigan in connection with the Red Run Drain and Tributary Spill Response Pilot Program PAS Study, and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement, as required by Section 221 of Public Law 91-611, as amended (42 U.S.C. 1962d-5b), and that the person who executed this Agreement on behalf of the Red Run Inter-County Drain Drainage Board, Michigan, acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____ 20___.

_____
Non-Federal Sponsor's Attorney's Typed name: Kelsey Cooke
Non-Federal Sponsor's Attorney's Title in Full:

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

_____

Michael Gregg,
Board Chair
Red Run Inter-County Drain Drainage Board, Michigan

DATE: _____

NON-FEDERAL SPONSOR'S
SELF-CERTIFICATION OF FINANCIAL CAPABILITY
FOR AGREEMENTS

I, _____, do hereby certify that I am the Chief Financial Officer of the Red Run Inter-County Drain Drainage Board, Michigan, (the "Non-Federal Sponsor"); that I am aware of the financial obligations of the Non-Federal Sponsor for the Red Run Drain and Tributary Spill Response Pilot Program PAS Study; and that the Non-Federal Sponsor has the financial capability to satisfy the Non-Federal Sponsor's obligations under the Red Run Drain and Tributary Spill Response Pilot Program PAS Study.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____, _____.

BY: _____

TITLE: _____

DATE: _____

SCOPE OF STUDY

SECTION 22, PLANNING ASSISTANCE TO STATES
RED RUN DRAIN AND TRIBUTARY SPILL RESPONSE PILOT PROGRAM PAS STUDY
FISCAL YEAR 2023

TITLE: Red Run Drain and Tributary Spill Response Pilot Program PAS Study

COST SHARING: 50% - FED, 50% - NONFED

DATE OF REQUEST JUSTIFICATION: 3 May 2022

PROJECT SPONSOR: Red Run Inter-County Drain Drainage Board, Michigan

PROJECT LOCATION: Primary Location: Warren and Sterling Heights, Michigan
Macomb County
Congressional District: M
Zip Code: 48092, 48093, 48310
HUC8 Code: 04090003
HUC12 Code: 040900030202-30205

EXECUTIVE SUMMARY: This project is comprised of two components. The first component is the development of a Spill Detection System for Storm Water Systems by the Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC). USACE will develop a system to be installed in drainage structures tributary to the Red Run Intercounty Drain to detect identified contaminants. Although, USACE will develop and install the system, on behalf of the Red Run Intercounty Drain Board the Macomb County Public Works Office (MCPWO) and Oakland County Water Resources Commissioner's Office (OCWRC) will assist USACE by collaborating on development of target contaminants, selection of communications equipment/protocols, integration of detection systems with Macomb SCADA network, data collection, and data review.
The second component of the project is the planning and piloting of a standardized spill response on the Red Run Intercounty Drain. The Red Run Intercounty Drain is susceptible to spills into the Drain itself and/or its tributaries. MCPWO and OCWRC are working together to develop and implement a spill response pilot program to create a standardized approach to spill containment. The pilot program will include the installation of anchor posts at two tributaries for hard boom deployment in the event of an illicit discharge. Two alternatives for boom deployment will be examined. One alternative requires manual installation, and one alternative deploys the boom automatically. The work also includes bank modifications and improved site access. Another component of the pilot program will include researching and implementing spill tracking technology as well as more opportunities for public engagement.

PURPOSE: The Red Run Intercounty Drain (Drain) is the receiving waterbody for stormwater from both Oakland and Macomb Counties, and periodic treated combined sewer overflows from the George W. Kuhn Drain in Oakland County. Several tributaries, both open and enclosed, contribute to the Drain which combines to create a drainage area of roughly 142 square miles. The existing open

channel portion of the Drain is approximately 8.2 miles long and extends from its point of beginning at the Clinton River in Clinton Township north of 16 Mile Road (Metropolitan Parkway) and east of Hayes Road to its upper terminus at Dequindre Road near 13 ½ Mile Road (Chicago Road) in the City of Warren. It is along this stretch of open channel that illicit discharges (spills) are generally noticed and reported. However, spills do not typically occur directly into the Drain, but rather through its tributaries that are an enclosed extensive network of pipes. This makes tracking the source of a spill particularly challenging because the sheen can go largely unnoticed until it gets daylighted along the open channel. On a yearly basis, there are roughly 10 reports regarding sheens in the Drain. This results in a minimum of 4 to 5 boom deployments annually.
Given the jurisdictional boundaries, separate responsibilities for drain operation and maintenance, local storm sewer networks, private systems, and time sensitive responses, the amount of coordination between the two Counties and local jurisdictions (municipalities) is significant. Not only must the Counties respond to and mitigate the spills quickly, but they must also investigate and track the spill to its source. Discussions between the Counties and Michigan Department of Agriculture and Rural Development (MDARD) staff have identified the need to evaluate and determine improvements for effective spill management on the major tributaries discharging to the Drain. Figure 1 shows a map of the Red Run Intercounty Drain and contributing tributaries.

The development of spill detection system for water systems will include:

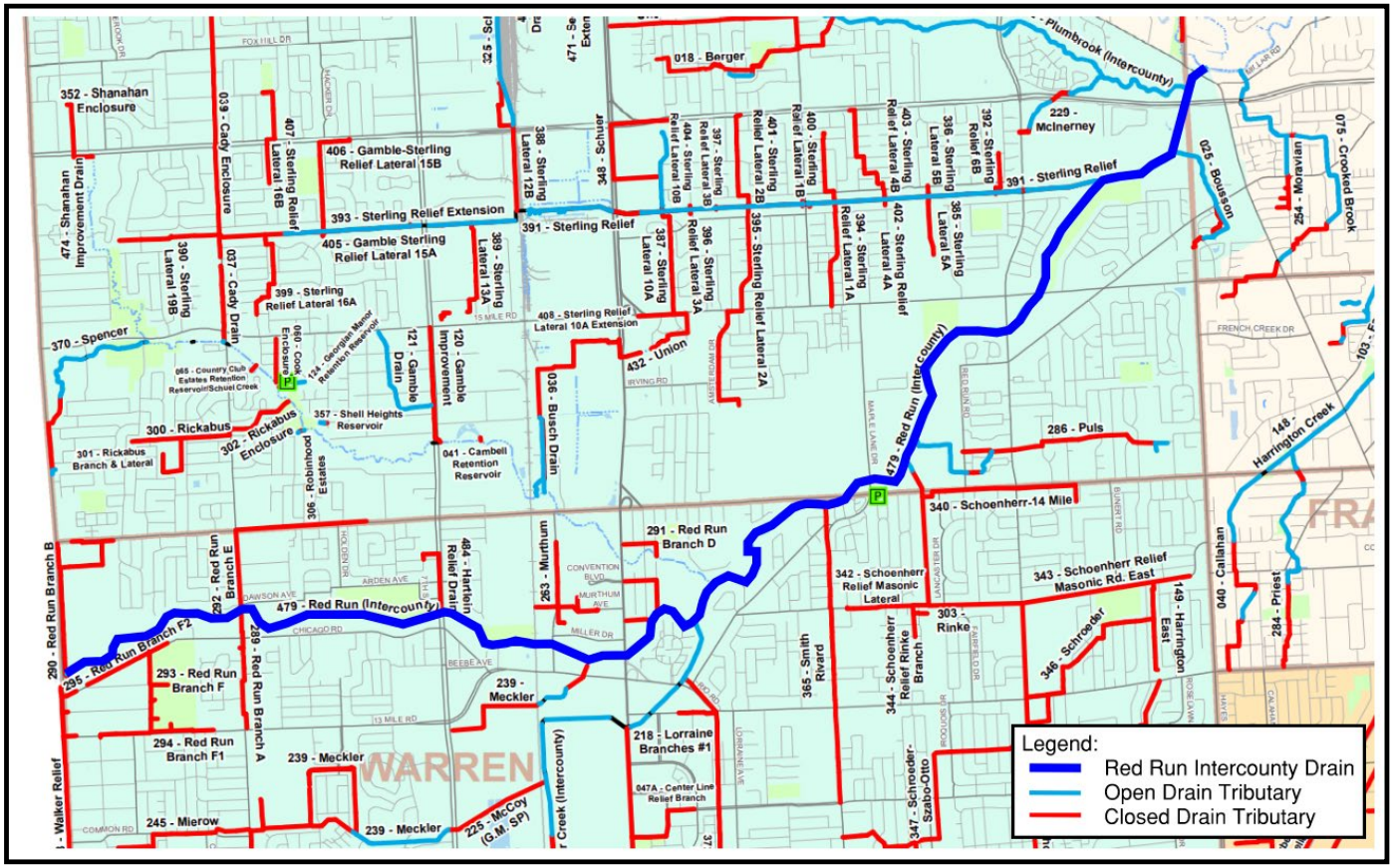
1. Establish target contaminants
2. Acquire materials and construct two complete prototype systems
3. Acquire materials and construct six fieldable systems and one for testing
4. Deploy the systems
5. Routine monitoring of systems and reporting
6. Publish report

The spill response pilot program aims to improve or expand upon the following spill responses processes and procedures:

1. Recommended Boom Types
2. Hard Boom Installation
3. Third Party Service Provider
4. Modifications to Existing Access Points
5. Updated Contact Information
6. Real Time Monitoring
7. Public Communication

The total budget of the project will be approximately $409,520. The USACE will provide $204,760 in funding for the development of a spill detection system within tributaries of the Red Run Intercounty Drain. The Drain Board will match the funding provided by the Army Corps of Engineers (USACE) for the project. Macomb County Public Works Office (MCPWO) and Oakland County Water Resources Commission (OCWRC) will work with USACE to develop the spill detection system and collect/review data once the program has been established. In addition to the work done with the USACE on the spill detection system, MCPWO will establish a plan and process for spill response measures on the Drain.

Figure 1. Red Run Intercounty Drain and Contributing Tributaries in Macomb County.



The State of Michigan Water Strategy is a 30-year plan for Michiganders to protect, manage, and enhance Michigan's water resources for current and future generations. The Water Strategy includes a series of recommendations that are a set of interconnected ideas to drive a new relationship between Michigan's communities, governments and residents to solve complex water challenges and create greater opportunities for economic and social well-being. The Water Strategy charts a course by providing recommendations and identifying strategic actions that this PAS Study conforms with such as: Inspire Stewardship for Clean Water, Protect and Restore Aquatic Ecosystems, Ensure Clean and Safe Waters, and Monitor Water Systems.

NOTE: The Estimated Study Cost table below is an estimate only and may not be a final cost. While the project was planned out in detail, the actual costs incurred during the study may vary.

SCHEDULE: The study effort should be fully completed within 24 months, assuming the timely execution of the PAS Agreement and funding is received in a timely manner. Some funding from one task may be moved to another task, if needed and agreed upon by USACE and the Red Run Inter-County Drain Drainage Board, Michigan.

WORK TO BE PERFORMED: The following task summaries are proposed to complete the Red Run Drain and Tributary Spill Response Planning and Pilot Program:

Task 1: Cost Share Agreement Reporting/Administration/Public Outreach – Overall Cost Share Agreement/Project

This task includes the following elements associated with the overall cost share agreement and projects that will be completed.

- Perform Cost Share Agreement Management Activities – Cost share agreement management services to assure compliance with terms and conditions of the cost share agreement will be provided. MCPWO will oversee cost share agreement management services.
- Cost Share Agreement Reporting – Per cost share agreement requirements, reporting will be prepared and submitted on the required schedule. Macomb County will prepare and submit the required cost share agreement reports.
- Coordinate with Partners – Coordination between partners and stakeholders in the project will be provided. Throughout the process, active participation will be fostered among the stakeholders.
- Public Outreach – MCPWO will be posting information related to all projects on their websites, project status updates will be provided to select County staff, and informational flyers will be distributed to specific organizations. MCPWO also will develop an educational program with small privately owned commercial/industrial businesses regarding the importance of proper chemical disposal and recycling.
- Final Report – A comprehensive final report summarizing all the activities conducted and outcomes achieved will be completed in draft form and submitted for review. Comments received will be incorporated into a final version for submittal. The County will prepare the final report.

Deliverables: Reporting and website updates

Task 2: Development of Spill Detection System for Storm Water Systems

USACE Engineer Research and Development Center (ERDC) will take the lead on the development of the spill detection and response system with input and consistent collaboration from MCPWO. The following tasks are planned for the spill detection system.

Target Contaminants – MCPWO will work with USACE to establish relevant target contaminants the system should detect.

~~Prototype Systems – Two complete prototype systems will be constructed and validated. One will be constructed in a lab and one will be constructed in the field including external communication setup. At this step, ERDC will begin their technical report or note for the system development.~~

System Deployment – Six fieldable detection systems will be ~~constructed~~ placed in the field including all external communication systems necessary. The systems will be located upstream of direct tributaries to the Red Run Intercounty Drain. MCPWO and OCWRC will assist ERDC with determining appropriate locations for installation of sensors to work in conjunction with automated boom deployments.

Monitoring and Reporting – Once the systems are installed Macomb County will begin data collection and the integration of the system with Macomb's SCADA network. ERDC will continue monitoring and reporting and publish a tech note or report on the system development.

Task 3: Study Phase

For the Red Run Drain and Tributary Spill Response Planning and Pilot Program, activity background data will be collected and reviewed. This information will be used as the background for the planning and implementation of the pilot program.

The following data collection needs will be completed to develop the pilot program.

Red Run Drain and Tributary Spill Response Evaluation - In May 2021, Hubbell, Roth and Clark, Inc. sent a draft Red Run Drain and Tributary Spill Response Evaluation to the Red Run Intercounty Drain Drainage Board. The Board is comprised of members from MCPWO, MDARD, and OCWRC. This document includes much of the background data needed for the pilot program including:

1. Notification
2. Spill Containment
3. Source Tracking
4. Clean up
5. Reporting and Follow Up

Notification – Examine options to increase public engagement pertaining to spill response notifications. Proposed options include install signs and markers with instructions on how to report a spill and/or setting up a remote reporting application.

Boom Selection – Research what type of booms are best suited for the program.

Site Evaluation for Boom Deployment – Several tributaries that contribute to the Red Run Drain within the project area. The project aims to install two boom deployment systems at two locations as part of the pilot program. Site visits will need to be made to determine the best locations for the boom installation. Factors that will influence the location of the boom installations include width of the drain, bank slope, bank stability, susceptibility to changing flows, and ease of access to the site.

Access – Access to the proposed sites where the booms will be deployed on the tributaries is required. A gravel path may be installed for access purposes. It must be determined if the County owns the area necessary for an access path to the boom deployment site or if easements will need to be acquired. One boom deployment alternative proposes an option for a motorized pulley system so access to power will need to be evaluated.

Deployment and Cleanup - Evaluate if it is best for hire a third-party service provider or relay on County staff to deploy the booms and manage all aspects of cleanup necessary. Factors that will influence the decision include cost, response time, and cleanup time.

Deliverables: Red Run Drain and Tributary Spill Response Evaluation Final Draft

Task 4: Planning and Pilot Program Implementation

This task will involve the planning and implementation of a pilot program to standardize the approach to spill response and will include:

Site Modifications - Depending on the chosen site for the boom installation modifications for safe access will need to be designed. A proposed design is grading the banks and adding a small shelf to allow maintenance personnel to access the channel. A gravel access path will be designed and constructed.

Boom Deployment - At two locations on tributaries permanent anchor posts will be installed on the drain banks. Two different types of booms will be installed at each location. The team will evaluate the Drain cross section and proposes regrading of the banks to add a small shelf to allow maintenance personnel to access the channel. For Alternative 1, the containment boom will be stored at an off-site location. In the event of a spill, an operator will take the boom out to the site, hook one end to the anchor post, walk across the channel and anchor the boom to the permanent post on the opposite bank. For Alternative 2, it is proposed to install a permanent cable across the channel with a hand-crank pulley system on one bank, and a containment boom reel on the opposite bank. In the event of a spill, an operator could crank the pulley system, which would pull the boom across the channel and contain the spill. There would be permanent anchor posts installed on the top of bank on both sides of the channel to allow for boom deployment during both low and high flows. If desired, the pulley system could be motorized.

Deliverables: Plans & Technical Specifications for any bank modifications and access path construction and implementation of the pilot project

Task 5: This task will be performed by USACE Detroit District. This task involves the overall management of the project including: attending monthly project meetings; upward reporting on the project's status; meeting coordination and preparing and monitoring project schedules and finances. The USACE Project Manager (PM) will be the primary point-of-contact (POC) and lead for the project.

Monthly progress meetings shall take place during the project period and will include small-group management meetings. The purpose of the small-group management meetings is to direct and coordinate the Government and Macomb County work effort towards successful and timely completion. The attendees will include appropriate project representatives from USACE and Macomb County.

Project Results & Measuring Progress

Outcomes – There are two main goals of this project. The first outcome is the development and implementation of a spill detection system for storm water systems. To better track the source and alert the County of illicit discharges within the watershed sensors or monitoring devices will be installed. The second goal of the project is to standardize and improve spill response action from start to finish on the Red Run Intercounty Drain. In addition, permanent anchors will be installed at two tributary locations for two different methods of boom deployment, manual and automatic.

Relevance to Existing Spill Response Actions – As stated, the current spill response activity is as follows:

- Most often the County is informed of an illicit discharge through public or employee reporting.
- The County sends staff out to investigate and deploy a boom (approx. 60-minute response time)
- Staff tries to locate the source of the spill but it often remains unknown
- Staff cleans up the spill at the site of the boom deployment (unknown timeline)
    - While staff is quick to deploy the boom, the cleanup is less of a priority and sometimes the boom is deployed for prolonged periods of time while the staff has other more urgent matters to address.

A set outline for spill response will improve the response time and cleanup as well as the notification of an illicit discharge through increased public outreach and sensor tracking within the watershed.

Outputs

- Implementation of sensors for earlier response times and source tracking of the illicit discharge
- USACE ERDC to publish a report on the spill detection system
- Implementation of an intercounty spill response plan for the Red Run Drain and contributing tributaries
- The spill response pilot program will include a detailed outline of the following action items:
    - Emergency Response
    - Access
    - Safety

- Boom Deployment at two sites along the Red Run Drain Tributaries

Project Milestones

Task	Date
Initial Project Meeting	**Jan 2023**
Study Phase	**Jan 2023 - Jan 2024**
Pilot Program Implementation	**Jan 2024 – Jan 2025**
Final Cost Share Agreement Report	**Jan 2025**

Budget Narrative - USACE ERDC PROPOSED BUDGET ESTIMATE (50/50 Cost Share)

Materials			
Description	**Unit Cost**	**Qty**	**Total**
		~~LED and Sensor Sys~~Spill Detection Systems	
~~280 nm sealed LED~~Slick Sleuth SS100-LED	$ 8,400.00~~165.00~~	~~8~~6	$ ~~$~~ 1,320.00~~0~~50,400.00
Power Supply	$ 720.00~~82.50~~	~~8~~6	~~$ 660.00~~$ 4,320.00
~~Opt3002 Sensor~~	~~$ 66.00~~	~~8~~	~~$ 528.00~~
~~Misc Hardware~~	~~$ 165.00~~	~~8~~	~~$ 1,320.00~~
		Controller and Communication System	
~~Controller System~~	~~$ 82.50~~	~~8~~	~~$ 660.00~~
External Communication System	$ ~~123.75~~200.00	~~8~~6	~~$ 990.00~~$ 1,200.00
Misc Hardware	$ 16500.00	~~8~~6	$ 60~~1,320~~.00
Environmental tracer	$ 200.00	~~1~~	$ 200.00
		Sub Total	$ 56,720~~6,798~~.00
Overhead Rate	0.464	**Overhead**	$ ~~3,154.27~~27,112.16
		Materials Total	$ ~~9,952.27~~83,832.16
		Labor	
Staff	**Hours**	**Rate**	**Total**
José Mattei	~~750~~240	$ 1~~07.36~~12.37	$ 26,969~~80,520.00~~36
John Furey	40~~250~~	$ 1~~59.66~~65.54	$ ~~39,915.00~~6,621.60
Scott Waisner	2~~40~~50	$ ~~150.67~~157.72	$ 37,852.17~~667.50~~
		Labor Total	$ 71,443.13~~158,102.50~~
		Travel	
Staff	**Days**	**Per Diem**	**Total**
José Mattei	14	$ 155.00	$ 2,170.00
Scott Waisner	10	$ 155.00	$ 1,550.00
	Persons	**Ticket**	**Total**
Airfare	2	$ 1,000.00	$ 2,000.00

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	Days	Rate	Total
Car Rental	14	$ 55.00	$ 770.00
		Subtotal	$ 6,490.00
		Overhead	$ ~~3,245~~3,102.22~~.00~~
		ERDC Travel Total	$ 9,~~735~~592.22~~.00~~
		ERDC Project Total	**$ 16~~74~~,8~~36~~7.5~~0~~1**
		Detroit District Programs	**$ 7,922.00**
		Detroit District Management	**$ 10,500.00**
		Detroit District PM	**$ 18,500.50**
		Detroit District Total	**$ 36,922.50**
		USACE Total PAS Study Costs	**$ 20~~1~~4,7~~9~~6~~0~~**

PROPOSED BUDGET ESTIMATE FOR THE RED RUN DRAIN DRAINAGE BOARD (50/50 COST SHARE)

The Red Run Drain Drainage Board is a combination of staff from the Oakland County Water Resources Commission (OCWRC) and the Macomb County Public Works Office (MCPWO). OCWRC and MCPWO are proposing in-kind contributions of staff time match, with the Drainage Board's cash contribution to make up the difference, to match USACE's fund contributions to the project. Their funds will be used to collaborate with USACE on the spill detection system in addition to planning and piloting a standardized spill response technique.

			Cost Share Agreement Reporting/ Administration/Public Outreach		Study		Pilot Program Implementation		Collaboration with USACE for the Development of Spill Detection System		Total
MCPWO Staff	**Wage**	**Fringe**	**Hours**	**Cost**	**Hours**	**Cost**	**Hours**	**Cost**	**Hours**	**Cost**	
PROJECT MANAGER	$60	$22	15	$1,230	40	$3,280	80	$6,560	80	$6,560	
STAFF ENGINEER	$43	$17	10	$600	40	$2,400	80	$4800	80	$4,800	
PROJECT SPECIALIST	$35	$15	10	$500	20	$1000	80	$4,000	80	$4,000	
CLERICAL	$25	$15	10	$400	15	$600	35	$1,400	25	$1,000	
			45	**$2,730**	**115**	**$7,280**	**275**	**$16,760**	**265**	**$16,360**	**$43,130**
OCWRC Staff	**Wage**	**Fringe**	**Hours**	**Cost**	**Hours**	**Cost**	**Hours**	**Cost**	**Hours**	**Cost**	
PROJECT MANAGER	$60	$22	15	$1,230	40	$3,280	80	$6,560	80	$6,560	
STAFF ENGINEER	$43	$17	10	$600	40	$2,400	80	$4800	80	$4,800	
PROJECT SPECIALIST	$35	$15	10	$500	20	$1000	80	$4,000	80	$4,000	
CLERICAL	$25	$15	10	$400	15	$600	35	$1,400	25	$1,000	
			45	**$2,730**	**115**	**$7,280**	**275**	**$16,760**	**265**	**$16,360**	**$43,130**

Consultant Staff		**Rate**	**Hours**	**Cost**	**Hours**	**Cost**	**Hours**	**Cost**			
PRINCIPAL		$150	10	$1,500	20	$3,000	20	$3,000			
MANAGER		$150	10	$1,500	20	$3,000	20	$3,000			
GRAD ENGINEER		$100	5	$500	40	$4,000	20	$2,000			
SURVEY		$100	0	$0	20	$2,000	30	$3,000			
CLERICAL		$80	5	$400	10	$800	10	$800			
			30	**$3,900**	**110**	**$12,800**	**100**	**$11,800**			**$28,500**
Other											
BOOM CONTRACTOR								**$90,000**			**$90,000**
										TOTAL:	**$204,760**

Agenda Item No. 8

Trial Balance

Trial Balance

Organization Oakland County
Periods FY2023 : May
Ledger Actuals
Accounting Worktag FND82902 Red Run Federal Drain Ch21
Book Operating
Company Currency USD
Translation Currency USD
Run 05/09/2023 09:07 AM

Consolidation Data

Ledger Account	Beginning Balance	Debit Amount	Credit Amount	Ending Balance
100100:Cash - Operating	1,217,410.54	2,567.32	36.88	1,219,940.98
101500:Undeposited Cash	0.00	0.00	0.00	0.00
104100:Accrued Interest on Investment	5,530.39	0.00	1,124.13	4,406.26
126100:Due from Municipalities	0.00	0.00	0.00	0.00
126105:Due from Municipalities-AR Con	0.00	0.00	0.00	0.00
201210:Vouchers Payable AP Cont	0.00	0.00	0.00	0.00
211100:Due to Primary Government	0.00	0.00	0.00	0.00
228100:Deposits Liability	(28,244.40)	0.00	0.00	(28,244.40)
230852:Accounts Payable	0.00	0.00	0.00	0.00
381350:FB Restricted Programs	(1,224,784.17)	0.00	0.00	(1,224,784.17)
450100:Cash Sweep	0.00	0.00	0.00	0.00
605000:Special Assessments	(202,596.00)	0.00	0.00	(202,596.00)
630000:Charges for Services	(2,009.25)	0.00	0.00	(2,009.25)
655000:Investment Income	(9,722.43)	1,161.01	2,567.32	(11,128.74)
730000:Contractual Services	227,978.47	0.00	0.00	227,978.47
770000:Internal Support Expenditures	16,436.85	0.00	0.00	16,436.85
Total	0.00	3,728.33	3,728.33	0.00

Cash	$1,219,940.98
Permit Held	(28,244.40)
Total Cash	$1,191,696.58

Agenda Item No. 9

Invoices

MEMO TO: Mr. Jim Nash, Chairman
of the Intercounty Drainage Board for the RED RUN FEDERAL DRAIN

FROM: Shawn Phelps, Chief of Fiscal Services
OCWRC Accounting

For Shawn Phelps

DATE: May 17, 2023

SUBJECT: Request for Approval of Invoices

Request for Board approval of payment of the following invoices:

Date	Ref No.	Paid To	For	Amount
	TBP	ALOIA Law	Inv # 28792 - Legal Services - 03/22/23 - Proj#1-2895	$ 1,543.75
			Total	**$ 1,543.75**

Agenda Item No. 10

Other Business

Agenda Item No. 11

Adjourn