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Project Summary

Name: Joint Drainage District No. 1 (Kossuth and Palo Alto County) Main Open Ditch Repairs

Background: Several repair requests have been filed regarding damages to the Main Open Ditch of JDD1. A major flood in May 2023 following ice melt of historic 2022/2023 caused major damages along the 30-mile ditch that extends from near Fenton southerly to near the Kossuth/Humboldt County line. The damages follow a major repair project to the ditch completed in 2020 and 2021.

Damages: The ditch was surveyed and damages inventoried in November – December 2023. Damages generally include sloughed and failed ditch banks, bent and smashed pipes, and sloughed material in the channel bottom. The severity of damages ranges from minor to severe, with the severe bank damages tending to be in areas with sandy/gravelly ditch banks. Pipe damages appear to be concentrated, and were likely primarily caused by snow/ice melt. We note that additional damages are likely to have occurred in 2024, but the ditch has not been re-surveyed.

Repair Options: Ditches have the capacity to heal themselves, we therefore are recommending that minor damages be left. More harm could be done if the banks are re-disturbed. However, the moderate to severe damages to the banks need repairs, or will continue to worsen. The ends can be cut off many of the damaged outlet pipes, others will need to be replaced. The goal is to make effective and cost-efficient repairs.

Option #1: Primarily Riprap Bank Repairs

- a. Shape bank and place riprap
- b. Costly but reliable, lose less land to channel

Option #2: Primarily Bank Shaping Repairs

- c. Re-shape the bank, except in locations of severe damages where riprap would be used.
- d. Cheaper but more of a patch job, less of a fix, lose more land to the channel

Option #3: Flatten Bank Slopes of Entire Ditch

- e. Original ditch banks dug at 1:1 slope (horizontal:vertical)
- f. Much of the ditch has eroded to approximately 1.5:1 bank slopes
- g. We would slope the ditch banks back to 2:1, a more stable slope

- h. Roughly 40 acres of land may be lost to the channel, may need to compensate landowners / purchase additional right-of-way (ROW)

Permitting: We are working with the Iowa DNR and United States Army Corps of Engineers (USACE) regarding permitting. We are hopeful that no permit from the Iowa DNR will be required, but it is possible one may be required for the bank flattening option. It appears likely an individual permit will be required from the USACE as we are planning in excess of 2,000 feet of bank stabilization via riprap.

Project Cost Estimates:

Primarily Riprap Bank Repairs - **\$3,010,000**

Primarily Bank Shaping Repairs - **\$1,548,000**

Flatten Bank Slopes of Entire Ditch - **TBD**

We will issue an amendment with a cost estimate for the bank flattening option, but anticipate it will fall between the estimated costs of Options #1 and #2.

Buffer Strips: Recent USDA/NRCS policy changes have made it more difficult to get approval to disturb CRP along drainage district open ditches in Iowa during the primary nesting season (May 15 – August 1). Approval is required from the Iowa State Technical Committee, which meets approximately once every 3 months. An environmental review is also required. We ask that landowners request this approval as soon as possible. We cannot do this on behalf of the landowners, but are willing to assist as needed.

Funding: The damages sustained in 2023 are not eligible for FEMA funding. We attempted to secure alternative funding but have been unsuccessful. There is a chance that funding will be available for damages sustained in 2024.

Final Thoughts: At this point in time, it appears likely that flattening the banks will be our preferred method of repair. However, uncertainties in permitting, and potential compensation for loss of land to the channel and/or damaging adjacent lands with poor quality spoils, may yet affect the final decision. We will continue to seek information regarding potential permitting requirements and will work on finalizing a cost estimate for flattening the banks of the entire Main Open Ditch.

If it is ultimately determined that flattening the banks is undesirable, we recommend being allowed to use our best professional judgment in deciding how to repair each individual site, taking into account the severity of the damages, the composition of the existing bank (sand/gravel/silt/clay), cost, effectiveness, and longevity of the repairs, etc. Our goal would be to adequately fix the ditch in the most cost-effective manner possible.