

Preliminary Engineering Report for:

Board of

Union County Commissioners

December 18, 2023

Submitted by: Jeff Stauch, P.E., P.S.
Union County Engineer

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SUBJECT: PETITION FOR THE MILL CREEK WATERWAY IMPROVEMENT PROJECT---REMOVAL OF OBSTRUCTIONS FROM MILL CREEK

SCOPE : *... « to remove logjams and debris from the main channel of Mill Creek, beginning at the Logan County line and proceeding in a southeasterly direction through the City of Marysville to the project terminus at the Delaware County line. The project also includes the lateral known as Infirmary Ditch, beginning at Scott Farm Blvd. and terminating at its outlet into Mill Creek. »*

PURPOSE OF PRELIMINARY ENGINEERING REPORT

To provide information to the Board of Commissioners regarding the project, helping them to determine whether to proceed with further project development or to dismiss the petition. The information contained within the report includes the following per ORC 6131.09.

1. A preliminary estimate of the cost of the improvement
2. Comments regarding the feasibility of the project
3. Opinion of whether the benefits from the project are likely to exceed the estimated cost
4. Factors apparent to the engineer that are both favorable and unfavorable to the proposed improvement

Background

The proposed Mill Creek improvements have been initiated by petition of affected townships representing themselves/landowners in the Mill Creek Watershed in accordance with Section 6131.04 of the ORC. Of particular concern are the areas adjacent to Mill Creek that are impacted by the logjam constrictions and those lands draining via sub-surface (artificial) drainage. Furthermore, poor drainage caused by obstructions in the channel can create hazardous road conditions and increased road maintenance requirements. An example of this would include debris that becomes wedged onto bridge piers along the waterway.

The logjams generally degrade the conveyance of water during most flow conditions. During high flow events increased flooding can be traced to poor drainage outlet conditions that result in back-up of runoff, and in some locations adjacent fields are impacted by new channels being cut. The goal of the proposed project is to provide a cost-effective solution that balances environmental protection, while removing the existing debris constrictions and dead trees that could contribute to future logjams. Additionally, the project would place the waterway under perpetual maintenance to help keep Mill Creek free of these major obstructions going forward.

The option of channelizing the main channel was briefly considered and found not viable due to cost and environmental impacts. Channelizing the main channel would theoretically increase the flow of storm water and relieve significant flood activities, however in today's environment that burden can not be justified.

The following is a general description of the proposed scope for the main channels of the Mill Creek and Infirmary Ditch.

Proposed Scope of Work

- a) Remove existing log jams and debris from the main channel
- b) Removal of dead and leaning trees that are imminent threats to the main channel
- c) Establishment of access points and easement areas for future maintenance
- d) Seeding of any disturbed areas within the permanent and temporary easements

It is recommended that any work begin at the Logan-Union County line and proceed downstream to the terminus of the project at the Union-Delaware County line. Work on the Infirmary Ditch is included in this project and could proceed simultaneously with the Main channel. The specifics of the work sequence would be determined during preconstruction meetings with the successful contractor. Some flexibility is expected to be granted to the contractor team if it results in cost savings, time savings, etc.

Project Development Discussion

Section 6131 of the ORC prescribes the process and timelines that must be followed in response to a petition for drainage works. Following is a list of steps taken to date and the potential future steps in the process.

Steps Taken To Date:

1. Petition Filed October 4, 2023, and ordered to prepare preliminary engineering report.
2. Determination of affected parcels.
3. Three separate informational Open House meetings held on October 17-19 in Liberty, Millcreek and Paris Townships.
4. Notices regarding viewing and first hearing sent to affected (benefitted) landowners.
5. Survey of obstructions on Mill Creek reviewed and recompiled by Union County Soil and Water Conservation District.
6. Presented project information to Marysville City Council on 10.23.23.
7. Conducted Viewing on 11.08.23 to share preliminary information on project, hear comments and answer questions. These sessions were conducted as three individual, but identical presentations to help with managing attendance (100p, 300p and 700p).
8. Preliminary report filed on 12.18.23.

Note: Step 2 has been corrected to capture only benefitted parcels. Benefitted parcels are parcels that are both in the Mill Creek watershed and drain into Mill Creek *prior* to Mill Creek exiting Union County. The attached Map of the Mill Creek watershed shows a green line encompassing the benefitted parcels. A modification/correction of the number of parcels in the Mill Creek watershed is hereby noted in this preliminary report, since the filing of the Mill Creek petition on 10/04/23. The filed petition listed 12,614 parcels, actual benefitted parcels now total 11,623 parcels, a reduction in previously noted parcels of 991.

Current and Future Steps:

- Conduct the First Hearing - The open meeting (hearing) to consider support and opposition to the proposed drainage improvements: Scheduled for 12/20/2023 @ 6:30 p.m.

At the conclusion of the First Hearing, if the Board determines that they wish to proceed with the project (petition), next steps will include:

1. Apply for and process environmental permits, if necessary
2. Gather any additional site information that is necessary
3. Preparation of the project plans and specifications
4. Setting of dates for filing plans and tentative schedules for the project
5. Refine the cost estimates for the work
6. Prepare a schedule of maintenance assessments for the benefitted owners
7. Upon the filing of plans, specifications and schedules to the Board, a date will be determined for the Final Hearing on the project

8. Notices for the Final Hearing will be provided and will include the proposed assessment amounts.

Environmental Implications

The US Army Corps of Engineers has been consulted and no Nationwide 401/404 permit is required since the project will not be working in the channel performing excavation. Project plans will be sent to the Ohio Department of Natural Resources for their review and subsequent comment.

Consultation

Consultation is ongoing between representatives of the City of Marysville and affected townships to address any concerns and impacts to those communities. Conversations to date with those officials have been very positive and supportive. Discussions have likewise continued with contractors and consultants familiar with this type of work, along with other counties that have experience with logjam removal assessment projects.

Financial Implications

The estimated cost of the project ranges from \$3,200,000-\$4,300,000. These estimates have increased substantially from the maximum estimate of \$2,300,000 shared during the View hearing held in November. Feedback from contractors familiar to this scope of work and stream length have helped to shape the new estimate range. We expect to further develop the estimate as we develop the final plans and specifications. The costs for the plan development and ultimately the project management/inspection will need to be paid directly or indirectly through the Board's funding. Those costs are not part of the above estimate, but are not expected to be significant.

Project construction costs will be paid by both the Union County Commissioners using American Rescue Plan Act (ARPA) funds and the City of Marysville stormwater fees/ARPA funds. Maintenance Fees will need to be collected from residents for the continuing future maintenance of Mill Creek (logjam and debris removal). These assessments would be applied to the annual tax bills for property owners in the unincorporated areas of the watershed. Those residents within the City of Marysville will have those same assessments covered by the city's stormwater fees (currently around \$7.75/month).

We anticipate recommending that 5-10% of the original bid be collected for the future maintenance of the Mill Creek watershed. The actual fee amount will be determined after the project bids and final project costs are determined.

Supporting Documentation

- Document 1 - Preliminary Construction Estimate
- Document 2 – Project Scope & Watershed Map of Mill Creek
- Document 3 – Preliminary Construction Plans & Obstruction Locations

Disposition and Project Feasibility


As submitted, I find through this Preliminary Engineer’s Report, along with the supporting documentation and research of the county engineer team and Union SWCD team, as we have developed the preliminary aspects of this proposed project, that it is both feasible and in the best interest of our public to move forward with the petition.

While difficult to quantify a cost benefit ratio on a project with a footprint of 33 miles of length, which encompasses so many various land uses (current and future) within its watershed, that the project benefits outweigh the costs. This opinion is greatly impacted by the fact that the construction costs are to be covered for the property owners by the Board of Commissioners and City of Marysville. Additionally, the maintenance component of this assessment project provides a valuable benefit to the stream corridor for many years to come.

The project will unquestionably present a number of challenges through its execution and completion. The large number of parcels; large footprint of the work area; coordination of the necessary access points for the contractor’s access to the stream; disposal of the timber in the most congested areas of the stream reaches; management of the assessments initially and into the future; management of the public noticing; and the extended length of the work period, all will combine to make it non-traditional and difficult project to complete.

But, executing this project provides a unique opportunity in our county to solve a major drainage issue in a substantial watershed area, that maintains the stormwater conveyance through what is expected to be nominal assessment costs due to the large area/number of parcels benefitted.

Respectfully Submitted:



Jeff Stauch, P.E., P.S.
Union County Engineer

12/18/2023

Date

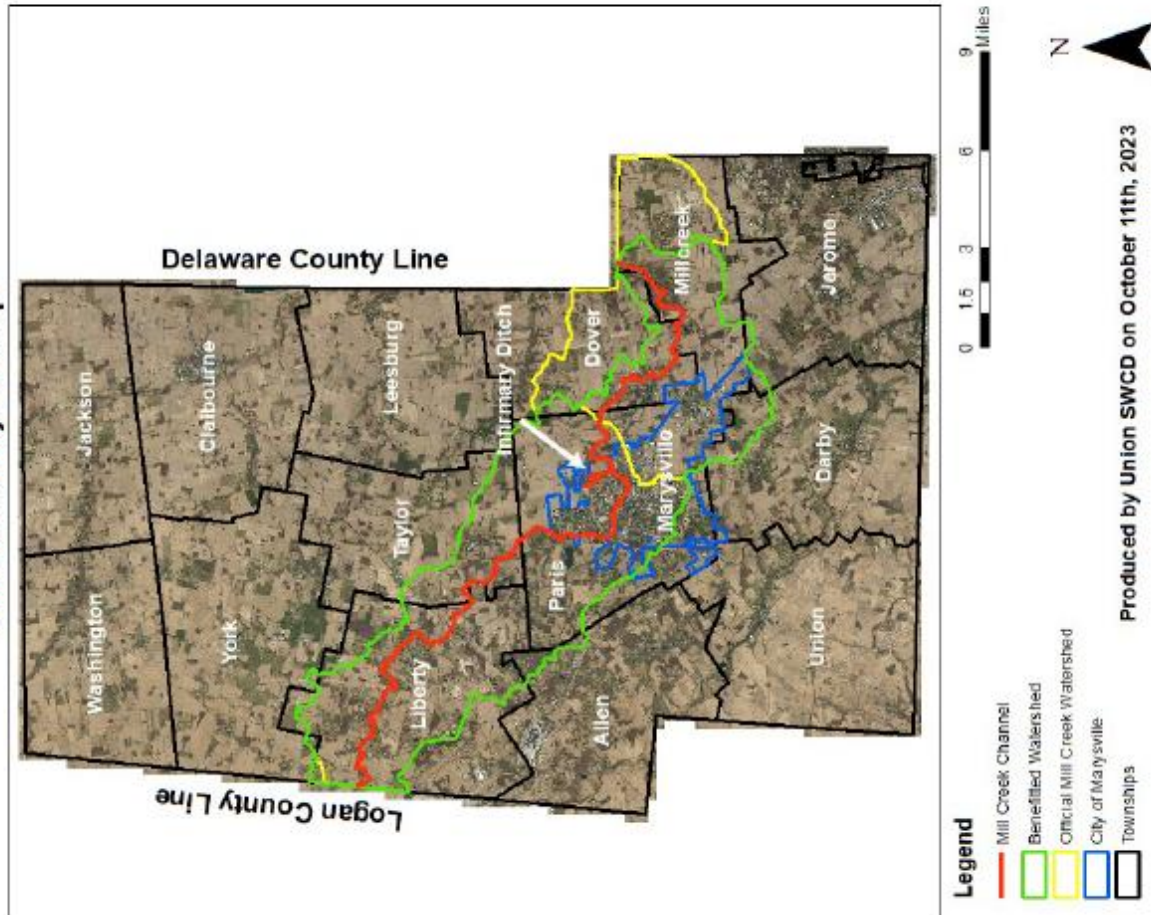
cc: Union Soil & Water Conservation District
Union County Prosecutor

Preliminary Estimate (12.15.23)

Mill Creek Improvement Project Cost Estimate

Ref #	Item	Description	Unit Quantities	Unit Desc.	Unit Price	AMOUNT
1		Major Log Jams	5	Each	\$75,000.00	\$375,000.00
2		Type A Log Jam Removal	490	Each	\$225.00	\$110,250.00
3		Type B Log Jam Removal	285	Each	\$370.00	\$105,450.00
4		Type C Log Jam Removal	168	Each	\$710.00	\$119,280.00
5		Type D Log Jam Removal	72	Each	\$1,310.00	\$94,320.00
6		Type E Log Jam Removal	50	Each	\$2,500.00	\$125,000.00
7		Dead/ Leaning Tree Removal (10")	5,250	Each	\$110.00	\$577,500.00
8		Dead/ Leaning Tree Removal (18")	2,320	Each	\$130.00	\$301,600.00
9		Dead/ Leaning tree Removal (30")	662	Each	\$264.00	\$174,768.00
10		Dead/ Leaning tree Removal (48")	60	Each	\$450.00	\$27,000.00
11		Dead/ Leaning tree Removal (60" & Larger)	20	Each	\$655.00	\$13,100.00
12		Mobilization of Equipment	1	Lump Sum	\$100,000.00	\$100,000.00
13		Hauling Trees off-site (City Parcels)	1	Lump Sum	\$125,000.00	\$125,000.00
14		Fence Removal/ Installation	2,500	Lin. Ft.	\$10.00	\$18,750.00
15	659	ODOT Roadside Mixture Seeding, Fertilizer, Mulch; Seed Mixture per NRCS Spec #342, Sec 4, table 1 Mix #1 or Mix #4	193,600	Sq Yd	\$1.00	\$193,600.00
		CRP 10Lb. Per acre	500	Lbs.	\$20.00	\$8,000.00
16	201	Clearing & Grubbing Removal/Disposal	1	Lump Sum	\$175,000.00	\$175,000.00
17		Infirmity Ditch Tree and Debris Removal	1	Lump Sum	\$1,050,000.00	\$1,050,000.00
		Temporary Drives	20	Each	\$1,500.00	\$30,000.00
		Guardrail removal/ reinstall	1,500	Lin. Ft.	\$40.00	\$40,000.00
		SUB-TOTAL				\$3,763,618.00
18	Special	Performance and Payment Bond	1	Lump Sum	\$35,000.00	\$35,000.00
		Contingency		10%		\$376,361.80
				TOTAL		\$4,174,979.80

Mill Creek Project Scope



- **Size of Watershed:**
99.7 square miles (63,816 Acres) in Union County
- **Length of Mill Creek:**
- 37 miles total
- 33 miles in Union County
- **Number of Parcels in Watershed:**
- 12,614
- **Number of Parcels in Benefitted Watershed:**
- 11,623
- **Number of Benefitted Marysville Parcels in Watershed:**
- 8,452 parcels within city limits
- **Number of Adjacent Parcels:**
- 299

Produced by Union SWCD on October 11th, 2023