

Final Report
Cook Tri-County Watershed
Drainage Petition per O.R.C. Chapter 6133
September 14, 2022

This report has been prepared for the Final Hearing on a drainage improvement petition filed by Patti Priest and others on December 4, 2018. The petition has been signed by representatives of 21 of the 107 parcels in the watershed.

The general location and course of the requested improvement is quoted from the petition as follows:

"In Franklin County, Delaware County, and Licking County within the Cook Tri-County Watershed and generally following, but not limited to the course and termini of the existing improvements."

The following is the nature of the work petitioned, as quoted from the petition:

"To generally improve the drainage, both surface and subsurface, to a good and sufficient outlet, by replacing, repairing or altering the existing improvements as required and/or creating new surface and subsurface drainage mains or laterals as requested, by this petition."

The Cook Tri-County watershed is approximately 824 acres. The predominant land uses within the watershed are agricultural and rural residential.

Petition Process

This petition has been submitted pursuant to Chapter 6133 of the Ohio Revised Code (O.R.C.), which authorizes a joint board of commissioners to act on behalf of benefited property owners to make drainage improvements. If the joint board of commissioners decides to proceed with a project, the costs related to the improvements and the development of plans, reports and schedules will be assessed to the landowners in the watershed according to the benefit received to their watershed acreage. These special assessments will be added to the property taxes for each property and can be spread over a maximum of a 15-year period. Property owners may also choose to pay their assessment in a lump sum payment prior to placement on their property taxes. Additionally, the improvements will be placed on the Franklin County Drainage Maintenance Program in perpetuity, per O.R.C. Chapter 6137, and the annual maintenance assessment will appear on property tax statements as a special assessment in the same manner as the construction assessments. These annual maintenance assessments are, generally, in the range of two to five percent of the construction assessment.

It should be noted that property owners are only assessed for those improvements that are located downstream from their properties. No property is assessed for improvements located upstream. The public agencies that own rights-of-way for public roads and other public lands are also assessed for both construction and maintenance costs in the same manner as private property owners.

The decision to approve a petition project is a 3-step process. First, a viewing of the proposed improvement is conducted for the Joint Board to familiarize themselves with the watershed and general conditions. The joint board conducted the viewing for this project on February 21, 2019. Next, the first hearing was held on April 23, 2019. At the first hearing, the joint board found in favor of the petition. They requested the Delaware County Engineer, Licking County Engineer, and Franklin County Engineer to proceed in the development of engineering plans and specifications and the schedule of assessments. It is this information that is before the Joint Board for consideration at this second and final hearing.

Existing Conditions

The Franklin County Engineer's Office, Delaware Soil & Water Conservation District, Delaware County Engineer's Office, and Licking County Engineer's Office have made the following observations of the watershed using onsite evaluation, and a review of available aerial photography, topographic mapping, and soils mapping.

Improvements have been constructed in the watershed in 1899, 1905, 1930, 1946, and 1962. These improvements consisted of open channel construction and subsurface drain installation. The improvements constructed in 1962 were placed on the Drainage Maintenance program in Franklin County per O.R.C. 6137. This portion of the project currently under maintenance is limited in scope and is not sufficient to provide a good and sufficient outlet as requested by this petition.

The drainage system does not appear to be functioning at or near optimum capacity due to a lack of comprehensive maintenance and the generally deteriorated condition of the infrastructure. The open channel also has a large amount of brush and debris on the banks and in the channel thus restricting flow. Numerous blowouts have been observed in the subsurface drainage system, and there is an absence of uniform surface grading that has resulted in areas of extensive surface ponding. In addition, flooding near intersection during winter conditions has led to salt being washed away from the pavement, resulting in icy conditions at the road intersections, creating a public safety hazard. These conditions are indicators of an aged, overburdened, and unmaintained drainage infrastructure. While the existing drainage system still provides some degree of drainage benefit, it does not appear to function as a good and sufficient outlet.

Project Scope

The proposed project has been divided into three distinct parts. The first part will be the open channel section from U.S. Route 62 to the tile outlet. The second part will be the tile and surface drain to the culvert at County Line Road. The third will be the portions in Licking County that are east of County Line Road.

The primary items of work for each part are as follows:

Part 1

- Open channel maintenance
- Rock lined channel construction
- Clearing of brush and vegetation

Part 2

- Surface drain reconstruction
- Subsurface drain tile installation
- Clearing of brush and vegetation

Part 3

- Subsurface drain tile installation
- Clearing of brush and vegetation
- Private drive culvert replacement
- Road culvert replacement
- Surface drain reconstruction

All disturbed areas will be returned to their pre-construction condition or seeded and mulched.

Project Estimate - Part 1

Construction	\$	20,245.20
Engineering, Administration, Planning & Inspection	\$	6,430.57
Drainage Maintenance Startup (5%)	\$	1,333.79
Contingency (15%)	\$	4,001.37
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TOTAL ESTIMATED COST:	\$	32,010.79

Project Estimate - Part 2

Construction	\$	153,744.31
Administration, Planning and Inspection	\$	27,919.87
Drainage Maintenance Startup (5%)	\$	9,083.21
Contingency (15%)	\$	27,249.63
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TOTAL ESTIMATED COST:	\$	217,997.02

NOTE: Of the total estimated cost, \$11,405.70 has been direct assessed to Delaware County for work directly benefitting or within the County Line Road right-of way. The total amount to be assessed to the watershed parcels is \$206,591.32.

Project Estimate - Part 3

Construction	\$	149,125.00
Administration, Planning and Inspection	\$	27,603.06
Drainage Maintenance Startup (5%)	\$	8,836.40
Contingency (15%)	\$	26,509.21
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TOTAL ESTIMATED COST:	\$	212,073.67

NOTE: Of the total estimated cost, \$8,500.80 has been direct assessed to Monroe Township for work directly benefitting or within the Fancher Road right-of-way. The total amount to be assessed to the watershed parcels is \$203,572.87.

TOTAL PROJECT ESTIMATED COST: \$ 462,081.61

Calculation of Assessments

The Ohio Revised Code instructs the County Engineer to calculate the assessments to individual property owners based on the benefits received from the improvements for the various properties in the watershed. The Ohio Revised Code further defines benefited land as:

Lands that have been removed from their natural state by deforestation, cultivation, artificial drainage, urban development, or other manmade causes shall be considered as benefited by an improvement required to dispose of the accelerated flow of water from the uplands.

Assessments to individual parcels have been calculated using the following formula, a rationale that is widely used throughout the state of Ohio.

(Acres Benefited) X (Land Use Factor) X (Percent of Improvement Used) X (Remote Factor) =
(Individual Parcel Assessment Factor)

Each parcel's assessment is then determined by:

(Individual Parcel Assessment Factor) / (Total of all Individual Assessment Factors) X (Total Construction Cost) = (Parcel Assessment)

Explanation of Factors:

- **Acres Benefited**
Total number of acres within a given parcel that contribute drainage to the improvement.
- **Land Use Factor**
The relative benefit to parcels of drainage based on the amount of increased storm water runoff resulting from the land use of the parcel.
- **Percent of Improvement used**
The point at which drainage from a given parcel enters the improvement.
- **Remote Factor**
The remote factors are based upon a parcel's distance from the improved section of the drainage course and have been established in 0.5 mile increments. Parcels that are most "remote" from the actual improvement receive the greatest reduction on their assessment.

Benefits versus Cost

One of the primary factors set forth for consideration in the approval or dismissal of a petition request is the actual benefit of the proposed improvements to the watershed in question. The following analysis examines this factor from the standpoint of land productivity for the agricultural acres as well as the value of drainage to residential parcels.

A publication by The Ohio State University Extension titled "Returns to Farm Drainage" details several studies, conducted by Ohio State researchers, on the effects of drainage on crop yields. The studies show that fields with good drainage will produce higher yields than fields that have poor drainage. A recently completed 25-year study showed that subsurface drainage increased corn yields by 24%-39%, and increased soybean yields by 13%-46%. This produces average yield, increases of 31% and 29% respectively. The benefits of drainage will thus equal this increased yield multiplied by the market price.

Approximately 550 acres of the 823.84-acre watershed is agricultural land. The 2019 through 2022 average market price for corn and soybeans in Ohio, as reported by the USDA National Agricultural Statistics Service is \$5.12 per bushel for corn and \$12.17 per bushel for soybeans. The average estimated yield increases for the soil types present in the watershed, given appropriate drainage improvements are in place, equal 46 bushels per acre for corn and 14 bushels per acre for soybeans.

Crop Production Benefit examples:

- Corn
(46 Bushel per acre increase in yield) X (\$5.12 per bushel) X (550 acres) = \$129,536.00 increase annually.
- Soybeans
(14 Bushel per acre increase in yield) X (\$12.17 per Bushel) X (550 acres) = \$93,709.00 increase annually.

For this example, we will assume that cropland acres are distributed equally between corn and soybeans, for a potential average annual increase of \$111,622.50. If this potential annual return is multiplied over a 20-year period, the benefit equals \$2,232,450.00.

While this example does not take into consideration individual farm management practices, it does illustrate the fact that good agricultural drainage is a key factor in farm profitability and would reflect positively when considering a cost/benefit analysis for this project.

The increased value or benefit for residential parcels is typically found in two ways: the increased marketability of the home and functionality of the home sewage treatment system and associated drainage needs. An inadequate subsurface drainage outlet can dramatically deteriorate the condition of household sewage treatment systems potentially limiting the value of the home for resale. Locally, the cost to construct an alternate sewage treatment system, should the existing system fail, ranges from \$15,000 to \$25,000 on average. Other benefits that are commonly perceived as a result of suburban drainage improvements focus on quality of life and positive neighborhood perception. Watersheds that have planned and maintained drainage infrastructures generally have higher resale values than those communities that are known to have a history of drainage problems.

Approximately 188 acres of the land use in the watershed is residential in nature. When evaluating the cost of providing adequate drainage outlets for residential properties, we find that for new construction, developers or homebuilders spend on average \$8,700.00 per lot to attain adequate drainage infrastructure within a development. With 71 residential parcels in the watershed, the potential average benefit is \$617,700.00. While this analysis does not consider many potential variables, it could aid in the decision-making process

The benefits to this proposed project will be realized well beyond the construction repayment term. As previously stated, the construction assessments would be placed on the property tax bills of the benefited landowners and can be spread over a maximum of 15 years. Alternatively, assessments can be paid in full within 30 days after the close of the final hearing without paying interest. The long-term benefits will be realized by virtue of this project being placed on the Franklin County Drainage Maintenance Program in perpetuity per Ohio Revised Code Section 6137, which requires maintenance funds to be collected semi-annually similar to the construction costs. These maintenance funds are applied to the annual inspection and maintenance of this specific project.

Recommendations

A decision to move forward with Part 1 can be made independent of any other portion of the proposed project. Part 2 and Part 3 are contingent upon approval of Part 1, and Part 3 is thus contingent upon the approval of Part 2. A decision to deny Part 1 will necessitate denial of all other portions of the project.

Based on all the information gathered and generated, we believe this project and all three parts as proposed is technically feasible and would serve as an adequate outlet for the drainage needs of the watershed. Furthermore, the parcel assessments for this project are within the range of assessments that can be expected for a project of this scope. The testimony brought to the Board of Commissioners by the landowners, as to whether the benefits of this project exceed the costs, should be given significant consideration in the decision to move forward with this project.

A resolution affirming the order to proceed detailing the approved areas of work, confirming the schedule of assessments, and ordering the project to be advertised for competitive bid per Ohio Revised Code Chapter 6133, will be necessary. The resolution by the Joint Board of Commissioners shall also determine how long a period of time, in semiannual installments, as taxes are paid, shall be given the owners of land benefited to pay the construction assessments.

If the joint board of commissioners chooses to dismiss the petition in whole or in any part, we would recommend a resolution reflecting that decision, and that the costs for the proceedings, including the costs incurred by the Boards of Commissioners, the County Engineers, and the Delaware Soil and Water Conservation District in making surveys, plans, reports and schedules be distributed to the benefiting landowners in the same ratio as determined in the final estimated assessments presented at this hearing. This amount is estimated at \$54,453.50.

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