

**First Hearing Report
Zerbe-O'Keefe #265 Watershed
Drainage Petition per O.R.C. 6131
October 1, 2020**

This report has been prepared for the preliminary hearing on a drainage improvement petition filed by Gary Graham and Linda Graham and others on November 22, 2019. The original petition has been signed by representatives of 10 of the 25 parcels in the watershed.

The general location and course of the requested improvements are quoted from the petition as follows:

"In Delaware County, Brown Township, within the Zerbe-O'Keefe #265 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."

Petition Process

This petition has been submitted according to Section 6131 of the Ohio Revised Code (O.R.C.), which authorizes the Board of Commissioners to act on behalf of benefited property owners to make drainage improvements. If the Board of Commissioners decides to proceed with a project, the costs related to the improvements and the development of plans, reports and schedules are 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 Delaware County drainage maintenance program in perpetuity, per O.R.C. Section 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 three 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 Commissioners to familiarize themselves with the watershed and general conditions. The Commissioners conducted the viewing for this project by drone video on February 20, 2020. Next, a preliminary hearing is held to consider the initial feasibility of the proposal. It is this preliminary First Hearing that is before us today. If this petition is approved, a final hearing will be conducted to further consider this petition. At that time, final details such as engineering plans and specifications, cost estimates, and a proposed schedule of assessments will be known.

Existing Conditions

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

The Zerbe-O'Keefe #265 watershed is approximately 448 acres. The predominant landuse within the watershed is agricultural. There are also areas of rural residential, road right-of-way, railroad right-of-way, and woods.

Improvements in the watershed have been constructed using the ORC 6131 process in 1906. These improvements consisted of subsurface drain installation only.

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 lack of uniform and maintained surface grading results in significant areas of ponded water. The subsurface drain system appears to have significant areas of structural failure as observed by sporadic "blowouts" along its course. These conditions are indicators of an overburdened and aged 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.

Estimate of Cost, Factors Favorable/Unfavorable, Benefit vs Cost

O.R.C. 6131 requires the County Engineer to state in a report factors favorable and unfavorable to a proposed project, estimate the cost of the project, and state an opinion as to whether the benefits of the project exceed the cost. The following information is presented for your consideration:

Construction Estimate

The project would begin at the junction of the Zerbe-O'Keefe drainage system and Sugar Run (Delaware County Drainage Maintenance Project #8402) and extend upstream to meet the request of the petitioners. The primary items of work along the entire length would include surface drain shaping and grading, the replacement of existing subsurface drains ranging in size from 10" to 18" in diameter, the construction of a grade stabilization structure, brush and vegetation removal, and seeding and mulching of disturbed areas.

If the project proceeds to a final hearing, portions of the watershed may be further divided into sections to better define the areas of work and the associated costs and benefits. This level of detail is not determined for the preliminary hearing and is only undertaken if the petition moves forward to a second, or final, hearing. The cost estimate as presented below reflects the entire requested project area.

Construction	\$ 229,170.00
Drainage Maintenance (O.R.C. 6137) first year start up (5% of construction estimate)	\$ 11,458.50
Project Administration, Survey, and Engineering (10% of construction estimate)	\$ 22,917.00
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TOTAL PROJECT ESTIMATE:	\$ 263,545.50

NOTES:

- It is important to understand that the above estimates are preliminary and made in the absence of a current detailed topographic survey of the project area.
- The above estimate assumes complete replacement of the subsurface drainage system. Should the project be approved to proceed to a final hearing, improvements made by private property owners will be evaluated for acceptance onto drainage maintenance in their current condition. If part of the current subsurface drainage system is able to be accepted onto maintenance, the value of that infrastructure would be removed from future construction estimates, however, said value would remain a part of the Drainage Maintenance base for the project.
- The above estimate does not contain a contingency amount. The amount of necessary contingency would be evaluated as part of the survey and engineering design of the project, and added to the estimate presented at the Final Hearing. Contingency cost is typically estimated at 15-20% of the final construction estimate.

- **Should the project fail to be approved at the final hearing the benefiting land owners, as defined by O.R.C. 6131, may still be responsible for the cost of project administration, survey, and engineering design.**

Assessments

If the project moves forward to the second hearing, 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. O.R.C. 6131 states that *“uplands 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.”* Benefits are further defined by the O.R.C. as *“elimination or reduction of damage from flood; removal of water conditions that jeopardize public health, safety, or welfare; and increased value of land resulting from the improvement.”*

Individual parcel assessments are not calculated for the preliminary hearing and are only calculated if the petition moves forward to a second, or final, hearing.

Factors Favorable/Unfavorable

Factors favorable to the improvement:

1. Improved surface and subsurface drainage in the watershed.
2. Improved outlet for subsurface drainage components of household sewage treatment systems and for residential drainage systems.
3. Reduction of future deterioration of surface and subsurface drainage infrastructure.
4. Annual inspections, maintenance, and protection of the improvement in perpetuity.

Factors unfavorable to the improvement:

1. Temporary land use disruption during construction.
2. Cost of construction and maintenance may be a burden to some landowners.
3. Removal of existing trees and brush in improvement area.

Benefits versus Cost

Assessments for property within the watershed are calculated based on the benefits derived. 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%. The same study also analyzed the return on investment for installing subsurface drainage in a field. It found that for corn, \$4 is returned for every \$1 invested, and for soybeans, \$3 is returned for every \$1 invested. To state it generally, the benefits of drainage will equal the increased yield multiplied by the market price.

The increased value or benefit for residential properties is much more subjective and difficult to quantify. For residential properties, the lack of an adequate drainage outlet can negatively impact the condition of household sewage treatment systems, potentially limiting the value of the home for resale. Should the existing system fail, the cost to perform repairs, or construct an alternate sewage treatment system, can range from the thousands to tens of thousands of dollars. It would also be reasonable to consider the cost of environmental degradation due to residential sewage treatment systems that may not be functioning properly. Other benefits that are commonly perceived as a result of drainage improvements focus on quality of life and positive neighborhood perception. Communities that have planned and maintained storm water drainage infrastructures generally have higher resale values than those communities that are known to have a history of drainage problems or flooding.

Conclusions

Based on all of the information gathered and generated for this project, I believe this project is technically feasible and would adequately serve the project area's drainage needs. However, the testimony brought to the Board 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.

Should the current petition be approved to proceed to a final hearing, the petition bond will be returned and detailed plans, specifications, estimated costs, and a schedule of assessments would be prepared. Additionally, a benefit versus cost analysis will also be performed to further determine the feasibility of advancing this proposed project.

Prepared by,



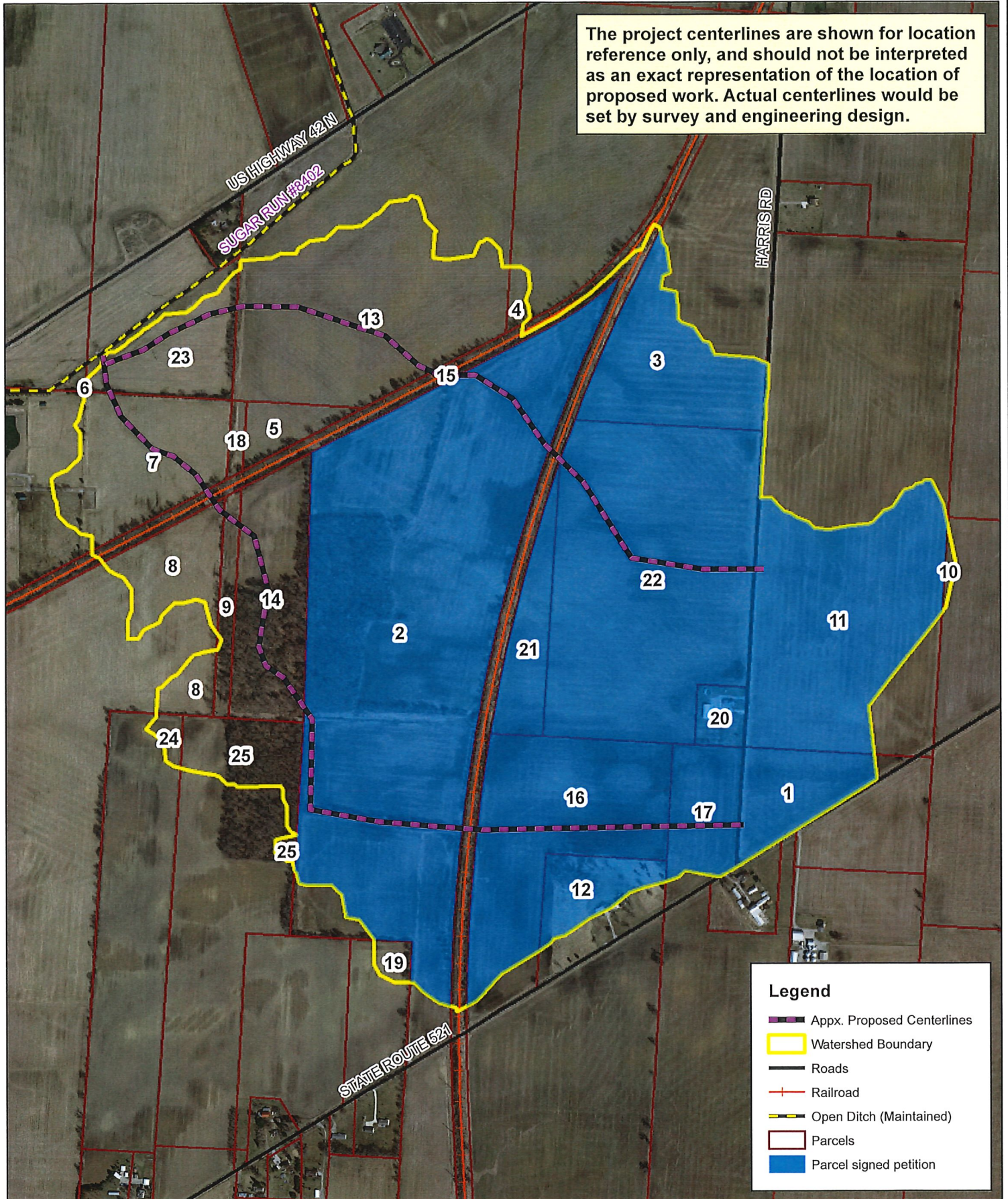
Bret Bacon
Resource Conservation Program Coordinator
Delaware Soil and Water
Conservation District

Approved by,



Chris Bauserman P.E., P.S.
Delaware County Engineer

The project centerlines are shown for location reference only, and should not be interpreted as an exact representation of the location of proposed work. Actual centerlines would be set by survey and engineering design.



Legend

- Appx. Proposed Centerlines
- Watershed Boundary
- Roads
- Railroad
- Open Ditch (Maintained)
- Parcels
- Parcel signed petition



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Note:
 Delaware SWCD makes no guaranty or warranty as to the accuracy of the information on this map.

