

**First Hearing Report
Hoover #61 Watershed
Drainage Petition per O.R.C. 6131
October 10, 2019**

This report has been prepared for the preliminary hearing on a drainage improvement petition filed by Tony C. Hill & Christy S. Hill and others on April 19, 2019. The petition was signed by representatives of 21 of the 156 parcels in the watershed.

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

"In Delaware County, Harlem Township within the Hoover #61 Watershed and generally following, but not limited to the course and termini of the existing watershed."

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 on July 15, 2019. 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 Hoover #61 watershed is approximately 1,429 acres. The predominant landuse within the watershed is agricultural with rural residential also comprising a large portion of the area. There are also areas of woods and road rights-of-way.

Improvements in the watershed have been constructed, improved, or modified using the ORC 6131 process in 1878, 1906, 1919, 1911, 1918, 1927, 1945, and 1961. These improvements consisted of open ditch construction and subsurface drain installation. Work has been performed on the Hoover #61 main, as well as the Paul, McElwee #324, and Crabill #589 laterals.

A portion of the Crabill #589 lateral, which was constructed in 1961, is on the Delaware County Drainage Maintenance Program. This project consisted of subsurface drain installation only, and did not address any surface drainage component. Significant ponding occurs in many areas of this subwatershed. Furthermore, the subsurface drain which was installed as part of the project, does not extend to an open channel. This increases the difficulty in maintaining the system as a good and sufficient outlet for the subwatershed.

The remainder of 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 grading has led to significant ponding in many areas of the watershed, and the subsurface drain system appears to have significant areas of structural failure as observed by sporadic "blowouts" along its course. The open channel has significant brush and vegetation on the banks and in the flowpath. 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 has been divided into three distinct areas of work: Hoover #61 Main, McElwee #324 Lateral, and Crabill #589 Lateral.

The Hoover #61 Main is the open channel beginning at the culvert under State Route 605 South and extending approximately 5,300 feet downstream. It is inclusive of a lateral running north approximately 1,500 feet to the Woodtown Road right-of-way. The primary items of work would include log jam removal, open channel restoration, the installation of private drive culverts, surface drain shaping and grading, the construction of a grade stabilization structure, brush and vegetation removal, subsurface drain installation, seeding and mulching of disturbed areas, and possible road right-of-way improvements.

The McElwee #324 Lateral would begin at the junction with the Main approximately 3,100 feet downstream of the Main culvert crossing under State Route 605 South and extend upstream approximately 4,800 feet. The primary items of work would include surface drain shaping and grading, subsurface drain installation, brush and vegetation removal, the installation of private drive culverts, seeding and mulching of disturbed areas, and possible road right-of-way improvements.

The Crabill #589 Lateral would begin at the junction with the Main approximately 4,500 feet downstream of the Main culvert crossing under State Route 605 South and extend upstream approximately 4,200 feet. The primary items of work would include surface drain shaping and grading, subsurface drain installation, brush and vegetation removal, the installation of private drive and road culverts, seeding and mulching of disturbed areas, and possible road right-of-way improvements.

Hoover #61 Main Construction	\$ 90,735.00
McElwee #324 Lateral Construction	\$ 108,500.00
Crabill #589 Lateral Construction	\$ 97,400.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 14,831.75
<u>Project Administration, Survey, and Engineering</u>	<u>\$ 25,000.00</u>

TOTAL PROJECT ESTIMATE **\$ 336,466.75**

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 Ohio Department of Transportation, Delaware County, and Harlem Township would be direct assessed for improvements made within their respective road rights-of-way.
- 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 and maintenance 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,



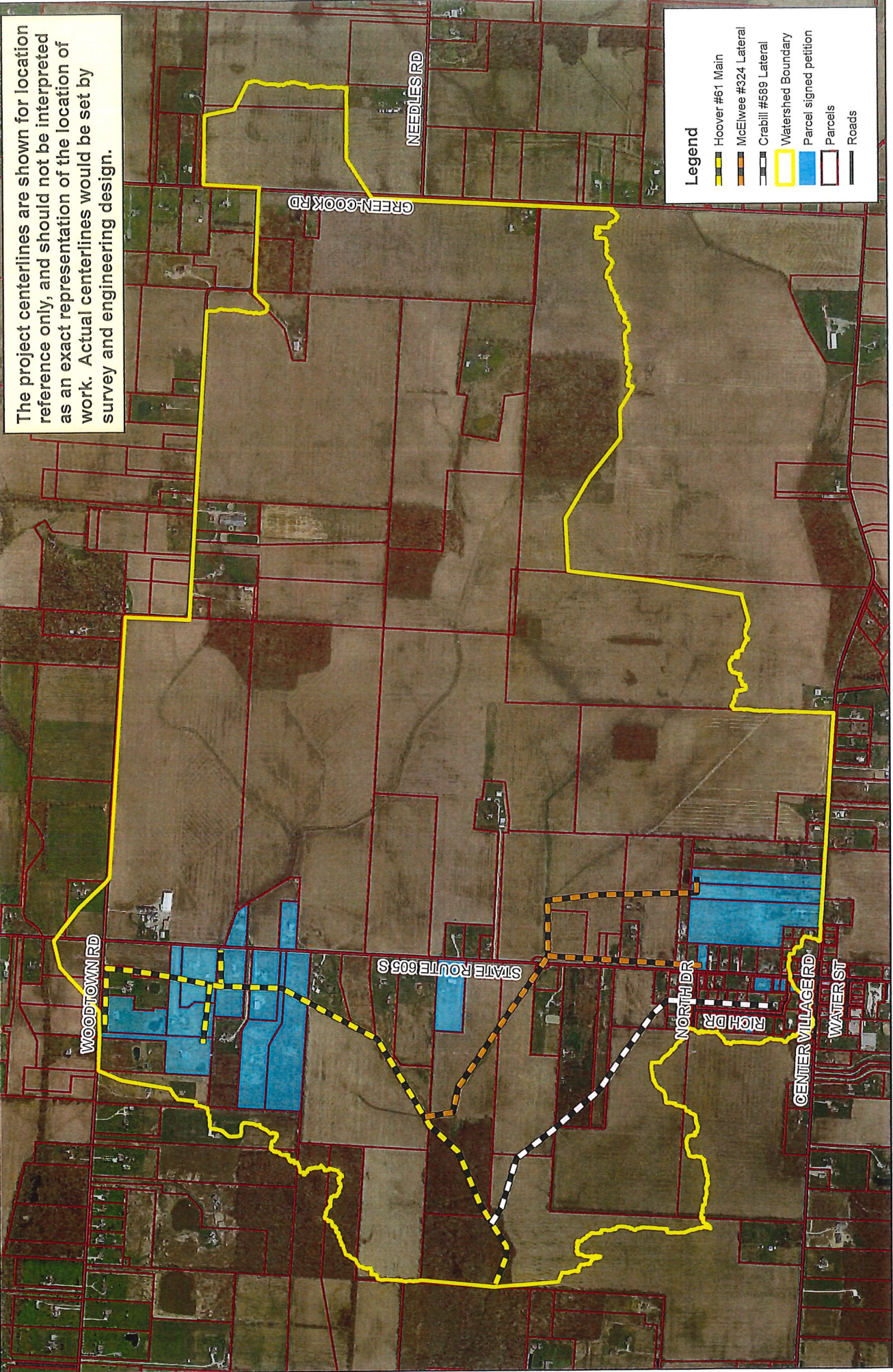
Bret Bacon
Resource Conservation Program Coordinator
Delaware Soil and Water
Conservation District

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 work. Actual centerlines would be set by survey and engineering design.



Legend

- Hoover #61 Main
- McElwee #324 Lateral
- Crabill #589 Lateral
- Watershed Boundary
- Parcel signed petition
- Parcels
- Roads



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



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