

**First Hearing Report
Norris Run
Drainage Petition per O.R.C. 6131
April 6, 2017**

This report has been prepared for the preliminary hearing on a drainage improvement petition filed by Mark A. James and LaDonna D. James and others on December 8, 2016.

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

"In Delaware County, Radnor and Troy Township, within the Norris Run Full Watershed and generally following, but not limited to the course and termini of the existing improvements. Additional laterals by the name of Prugh Main 517, Hadley Main (534) 109, Price Main 179, Shaw Main 13, Lewis Main 130, Miller 538, Klee 13, and Wilson Main 87.

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, report 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 an 8-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 would also be 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 March 6, 2017. 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 using onsite evaluation, and a review of available aerial photography, topographic mapping, and soils mapping.

The Norris Run watershed, as defined for this hearing, measures 3,258 acres. Approximately 2,957 acres, or 91%, of the watershed is agricultural use, residential use measures approximately 229 acres, or 7%, with wooded areas comprising 72 acres, or 2%.

The Norris Run drainage system was originally constructed in 1872, and revisited in 1883, 1891, 1901, 1906, 1915, 1916, 1923, and 1930. Subsequent improvements were also made to the laterals in the watershed upstream of the main as follows:

- Prugh Main #517 (Appx. 396 Acres): 1882, 1887, 1902, 1921
- Hadley Main (#534) #109 (Appx. 171 Acres): 1887, 1922
- Price Main #179 (Appx. 162 Acres): 1893
- Shaw Main #13 (Appx. 151 Acres): 1883
- Lewis Main #130 (Appx. 137 Acres): 1890
- Miller #538: 1922
- Klee #13: 1883, 1891

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 absence of uniform surface grading has resulted in areas of surface ponding. Sporadic "blowouts" along the course of the existing subsurface drain were also observed. These "blowouts" are a result of an aged and overburdened subsurface drainage system. While the outlets for the various subsurface drainage systems appears to be unobstructed, the downstream channel has evidence of being affected by logjams

and debris accumulation, and some evidence of siltation is present in the upstream portion of the channel. While the existing drainage system still provides some degree of drainage benefit, it does not appear to function as a good and sufficient outlet.

Construction Estimate

The proposed project estimate has been prepared to reflect the cost of the Main and each of the laterals named on the petition separately with the exception of the Miller #538 and Klee #13. These two laterals are included in the cost estimate for the Main. Two alternative cost estimates for the Main are being presented for your consideration. Alternative A involves keeping the location of the tile outlets and open channel as it exists now. Alternative B proposes to extend the open channel upstream approximately 4,200' to the point where the major laterals diverge. These alternatives have been derived through preliminary discussions with the landowners.

Main - Alternative A

Items of work would include the following basic elements: open channel restoration and logjam removal, installation of a grade stabilization structure, surface drain shaping and grading, seeding and mulching of disturbed areas, and subsurface drain installation ranging in size of approximately 30"-36" in diameter.

Construction	\$ 345,920.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 17,296.00
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SUBTOTAL \$ 363,216.00	

Main - Alternative B

Items of work would include the following basic elements: open channel restoration and logjam removal, new open channel construction, installation of grade stabilization structures, and seeding and mulching of disturbed areas.

Construction	\$ 148,695.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 7,434.75
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SUBTOTAL \$ 156,129.75	

Prugh #517

Items of work would include the following basic elements: surface drain shaping and grading, and subsurface drain installation ranging in size of approximately 8"-24" in diameter.

Construction	\$ 185,840.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 9,292.00
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SUBTOTAL \$ 195,132.00	

Hadley #109

Items of work would include the following basic elements: surface drain shaping and grading, and subsurface drain installation ranging in size of approximately 10"-15" in diameter.

Construction	\$ 74,750.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 3,737.50
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SUBTOTAL \$ 78,487.50	

Shaw #13

Items of work would include the following basic elements: surface drain shaping and grading, and subsurface drain installation approximately 15" in diameter.

Construction	\$ 25,300.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 1,100.00
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SUBTOTAL \$ 26,400.00	

Price #79

Items of work would include the following basic elements: surface drain shaping and grading, and subsurface drain installation approximately 15" in diameter.

Construction	\$ 54,625.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 2,375.00
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SUBTOTAL \$ 57,000.00	

Wilson #87

Items of work would include the following basic elements: surface drain shaping and grading, subsurface drain installation ranging in size of approximately 15"-24" in diameter, and seeding and mulching of disturbed areas.

Construction	\$ 177,215.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 8,860.75
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SUBTOTAL \$ 186,075.75	

Lewis #130

Special Note: Improvements to the Lewis #130 watershed are already under consideration as part of the Thomas #9 O.R.C. 6131 petition filed by Richard Lehner and others on April 28, 2016. If the improvements are constructed as part of the Thomas #9 petition, they will not be included as items of work for the Norris Run petition. Should the petition for the Thomas #9 be denied, any proposed work for the Lewis #130 could be considered as part of the Norris Run petition.

Items of work would include the following basic elements: surface drain shaping and grading, subsurface drain installation ranging in size of approximately 8"-15" in diameter, and seeding and mulching of disturbed areas.

Construction	\$ 52,670.00
Drainage Maintenance (ORC 6137) first year start up (5% of construction estimate)	\$ 2,633.50
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SUBTOTAL	\$ 55,303.50

Project Administration and Engineering	\$ 45,000.00
Construction Supervision and Inspection	\$ 25,000.00
Total Project Estimate using Main Alternative A	\$1,031,614.75
Total Project Estimate using Main Alternative B	\$ 824,528.50

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 drains. Should the project proceed beyond this first hearing, the capacity and condition of the existing tile will be evaluated according to the applicable engineering standards. Any reach of the project that meets these standards in its current condition may be considered for inclusion onto the Drainage Maintenance program without requiring improvement.
- 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 as:

- Elimination or reduction of damage from flood;
- Removal of water conditions that jeopardize public health, safety, or welfare;

- 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

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:

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, and 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 dramatically deteriorate 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. Additionally, should the prayer of the petition be granted, the Board should consider which of the two Main alternatives with which to proceed. An affirmative decision to move forward with the Main would be necessary in order to move forward with any of the laterals, however, the laterals can be considered independently of each other.


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 benefits versus cost analysis will also be performed to further determine the feasibility of advancing this proposed project.

Prepared by,

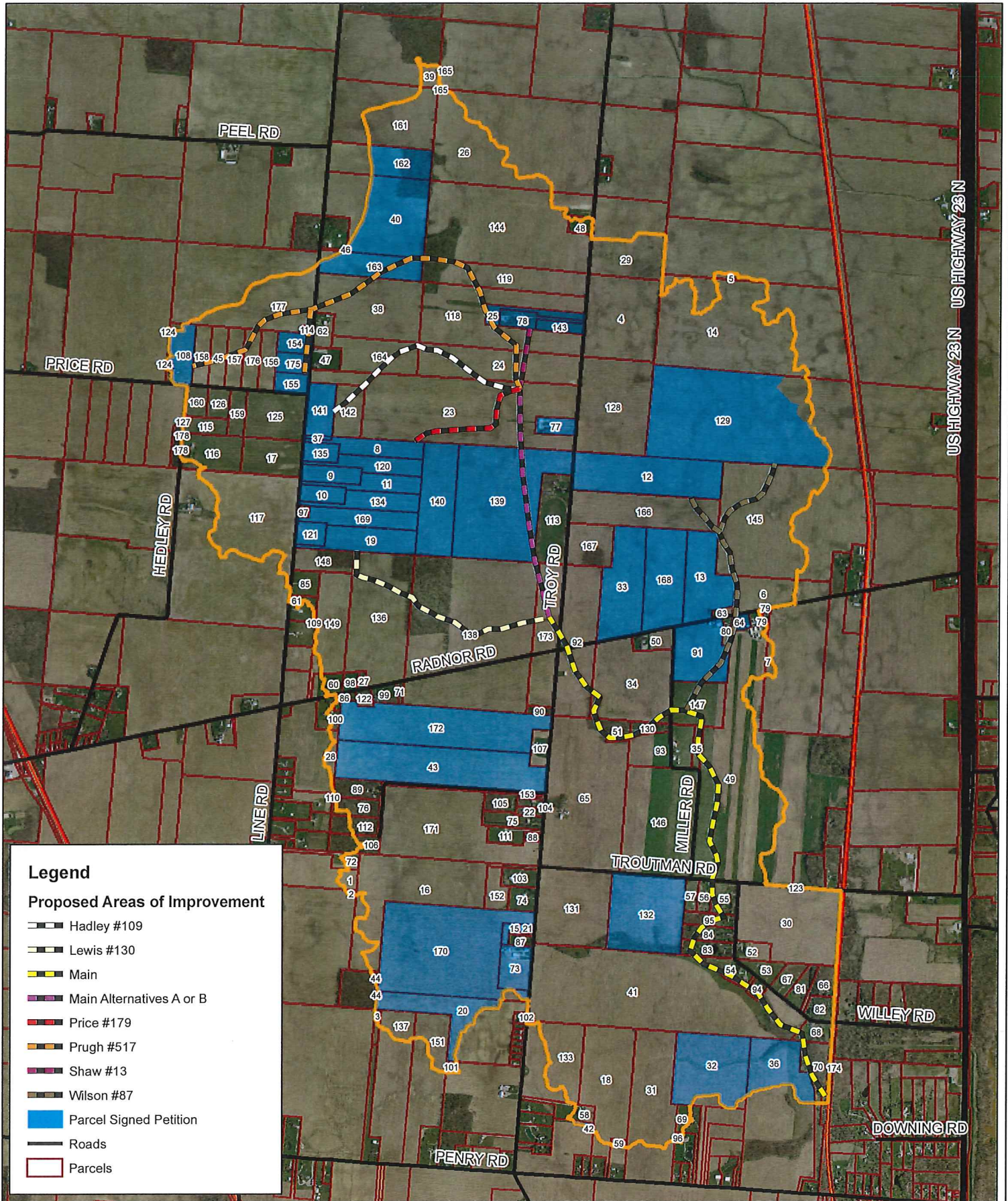


Bret Bacon
Conservation Services Coordinator
Delaware Soil and Water
Conservation District

Approved by,



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



Legend

Proposed Areas of Improvement

- Hadley #109
- Lewis #130
- Main
- Main Alternatives A or B
- Price #179
- Prugh #517
- Shaw #13
- Wilson #87
- Parcel Signed Petition
- Roads
- Parcels



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0 1,100 2,200 Feet

Note:
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