



First Hearing Report

Brown Township

Mando Ditch Drainage Petition (As Amended) per O.R.C. 6131

June 8, 2021

This report has been prepared for the First Hearing on a drainage improvement petition filed by Frank Mando on February 24, 2021.

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

In Franklin County, Brown Township, generally bounded by Morris Road, Patterson Road, and Big Darby Creek generally following, but not limited to the course and termini of the existing improvements known as Burt Ditch and Patterson Ditch with adjustments to meet the current needs of petitioners and the current land use.

The following is the nature of the petitioned work:

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. Environmental considerations will also be warranted because this project will drain through Prairie Oaks Metro Park into Big Darby Creek.

Petition Process

This petition has been submitted pursuant to Chapter 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 this project, the costs related to the improvements and the development of plans, reports, schedules and construction are assessed to the landowners in the watershed according to the benefit received to their watershed acreage. These special construction 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 construction 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. 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 they benefit from. And 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 proceed with a 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 May 5, 2021. Next, a preliminary hearing (First Hearing) is held to consider the initial feasibility of the proposal. It is this First Hearing that is before us today. If the Commissioners vote to proceed with the project survey and design at this First Hearing today, 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 Franklin County Engineer's Office has made the following observations of the watershed using onsite evaluation and a review of available aerial photography, topographic mapping, and soils mapping.

The Mando Ditch watershed is approximately 640 acres. The predominant land uses within the watershed are agricultural and rural residential.

What is now called the Mando Ditch Watershed by virtue of this petition, is a combination of two previously petitioned systems, Patterson Ditch and Burt Ditch. The two systems already combine at one point as Burt Ditch flows into Patterson Ditch. Patterson and Burt Ditch were both constructed before maintenance provisions were added to the drainage petition law and have not been comprehensively maintained since their construction in the 1870s. This new petition will officially combine them for future maintenance.

Burt, Patterson and other private drainage systems do not appear to be functioning at, or near, optimum capacity due to a lack of maintenance and their deteriorated condition. There is an absence of uniform surface grading that has resulted in areas of extensive surface ponding. These conditions are indicators of an aged, overburdened, and unmaintained drainage infrastructure. The conversion of a significant portion of the watershed to residential use requires a higher level of service and has put further strain on the system.

The section of open ditch is also overgrown and has reduced capacity and evident erosion.

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

Ohio Revised Code Section 6131.09 requires the County Engineer to prepare a preliminary report on the proposed improvement, which shall include: a preliminary estimate of the cost of the proposed improvement, comments as to the feasibility of the project, a statement of opinion as to whether the benefits from the project are likely to exceed the estimated cost, and a list of factors apparent to the County Engineer, both favorable and unfavorable to the proposed improvement.

Preliminary Cost Estimate of the Proposed Improvement

The proposed project would include the following basic elements: ground surface shaping and grading, seeding, mulching, & restoration of disturbed areas, subsurface storm tile installation, private drive culvert replacement, and road culvert replacement.

Survey, Design, Administration (15% of Construction Estimate)	\$399,666.92
Construction	\$2,264,446.16
Contingency (15% of Construction Estimate)	\$399,666.92
Drainage Maintenance (5% First Year Start Up only)	\$113,222.31
TOTAL PROJECT ESTIMATE	\$3,177,002.31

NOTES:

- It is important to understand that the above estimates are preliminary and are made in the absence of a current detailed topographic survey of the project area.
- 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 to-date cost of project administration, survey, and engineering design.

If the project moves forward to the Final Hearing, the Ohio Revised Code requires 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. 6131.01 (F) (1) defines benefit or benefits as:

“...advantages to land and owners, to public corporations as entities, and to the state resulting from drainage, conservation, control and management of water and environmental, wildlife, and recreational improvements. Factors relevant to whether such advantages result include:

(a) The watershed or entire land area drained or affected by the improvement;

- (b) The total volume of water draining into or through the improvement and the amount of water contributed by each land owner;*
- (c) The use to be made of the improvement by any owner, public corporation, or the state.*
- (2) "Benefit" or "benefits" includes, but is not limited to, any or all of the following factors:*
 - (a) Elimination or reduction of damage from flooding;*
 - (b) Removal of water conditions that jeopardize public health, safety, or welfare;*
 - (c) Increased value of land resulting from the improvement;*
 - (d) The use of water for irrigation, storage, regulation of stream flow, soil conservation, water supply, or any other incidental purpose;*
 - (e) Providing an outlet for the accelerated runoff from artificial drainage if a stream, watercourse, channel, or ditch that is under improvement is called upon to discharge functions for which it was not designed. Uplands that have been removed from their natural state by deforestation, cultivation, artificial drainage, urban development, or other human methods shall be considered to be benefited by an improvement that is required to dispose of the accelerated flow of water from the uplands."*

Individual parcel assessments are not calculated for the First Hearing and are only calculated if the petition moves forward to the Final Hearing.

Engineer's Comments on the Feasibility of the Project

After draining through Prairie Oaks Metro Park, the Mando Ditch watershed ultimately drains to Big Darby Creek, a national scenic river. The project area is best described as rural agricultural and rural residential consisting of soils that are poorly drained with flat topography. The land use consists of crop farming, small residential farms and large lot single family homes. To our knowledge, all homes obtain water from onsite wells and treat waste water with household sewage treatment systems (HSTSs). Electric and communications utilities are expected to be present as are some geothermal systems.

It is the opinion of the Engineer that sufficient space and conditions are available to design and construct an improvement suitable to serve the needs of the petitioners while balancing the significant environmental considerations.

Stakeholders important to this process include petitioners, property owners, Columbus and Franklin County Metro Parks, Ohio Farm Bureau, ODNR Scenic Rivers, Franklin Soil and Water Conservation District, the Ohio EPA, Brown Township, and the Franklin County Engineers Office.

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 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.¹

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 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. Homes in communities that have planned and maintained storm water drainage infrastructures have higher resale values than those communities that are known to have a history of drainage problems or flooding.

Another benefit is the value of the land in this watershed will be increased from its conversion from farmland to residential land.

Having considered:

- The potential cost of the proposed project;
- The health, wellness and environmental benefits of providing adequately drained soils when HSTSs are present in abundance;
- The health, wellness and environmental benefits of preventing surface water contamination of residential water wells;
- Increased agricultural farm yields;
- Potential increase in property values;

¹ Clevenger, Wm. Bruce, OSU Extension, Returns to Farm Drainage 4/1/2013; <https://u.osu.edu/ohioagmanager/2013/01/04/returns-to-farm-drainage/>

- Reduction of sediment, nutrient, bacteria and other impacts to Big Darby Creek resulting from malfunctioning HSTSs, agricultural crop field surface runoff, and manure from large animal agriculture.

It is the opinion of the engineer that the benefits of this project exceed the cost.

Factors Favorable and Unfavorable

Factors favorable to the improvement:

1. Improved surface and subsurface drainage in the watershed;
2. Reduction in the duration of ponded water;
3. Improved outlet for subsurface drainage components of household sewage treatment systems and for residential drainage systems, which increases safety and property value;
4. Reduction of future deterioration of surface and subsurface drainage infrastructure.
5. Increased crop yield for farm fields within the watershed;
6. Annual inspections and maintenance of the improvement in perpetuity;
7. The project is consistent with other Franklin County initiatives to satisfy Clean Water Act requirements;
8. Improved road-side drainage along Morris Road and Patterson Road.

Factors unfavorable to the improvement:

1. Temporary land use disruption during construction and associated water quality impacts;
2. Cost of construction and maintenance may be a burden to some landowners.

Conclusions

Based on all of the information gathered and generated for this project, we believe this project is technically feasible, would adequately serve the project area's drainage needs and is most consistent with other Franklin County efforts to meet Clean Water Act requirements through our Ohio EPA Municipal Separate Storm Sewer System (MS4) permit to reduce contamination from HSTSs which are our primary pollutant of concern. 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 amended 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 will be prepared. Additionally, a more detailed benefit versus cost analysis will be performed to further determine the feasibility of advancing this proposed project.

Prepared by,



Jim Ramsey, P.E.

Riparian and Environmental Engineer

Franklin County Drainage Engineer's Office

Recommended by,



TJP

Cornell R. Robertson, P.E., P.S.

Franklin County Engineer

Franklin County Drainage Engineer