

# Kingston #2017-2 Drainage Improvement Project

## Requested per ORC 6131

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DELAWARE COUNTY COMMISSIONERS  
DELAWARE COUNTY ENGINEER'S OFFICE  
DELAWARE SOIL & WATER CONSERVATION DISTRICT

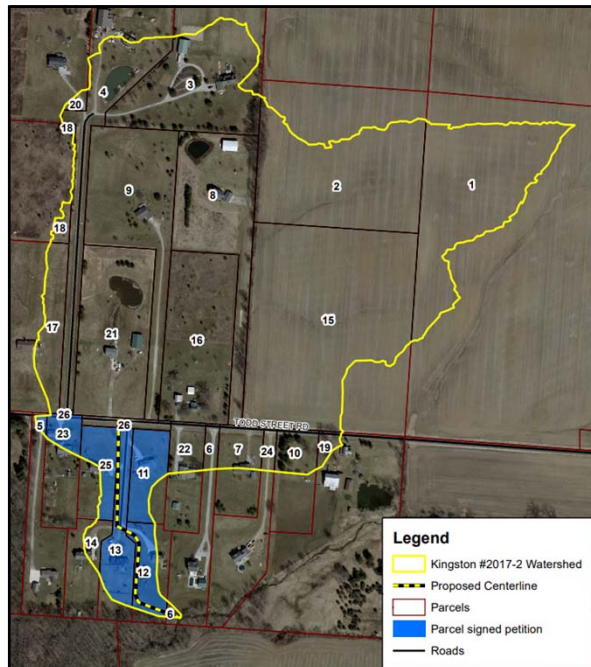
*"In Delaware County, Ohio – Kingston Township – within the Kingston Township Watershed #2017-2 watershed and generally following but not limited to the course and termination of existing improvements on the south side of Todd Street Road."*

*"To improve the drainage (both surface and sub-surface) to a sufficient and direct outlet. This could include replacing, repairing, or altering the existing surroundings and/or creating new surface and sub-surface drainage ditches, culverts, mains, or laterals as necessary. The work requested by this petition includes the area to the south of Todd Street Road in anticipation of additional water being forced upon this area via the installation of a culvert by the Township."*

-As quoted from the petition

## Project Timeline

- **March 17, 2021:** Petition for drainage improvements filed by Kathy Magee and others
- **June 15, 2021:** View held
- **August 26, 2021:** 1<sup>st</sup> Hearing



- Watershed is approximately 66 acres
- 39% agricultural, 59% rural residential, 2% road right-of-way
- Original petition signed by representatives of 6 of the 26 parcels in the Kingston #2017-2 watershed



## Summary of Work

- Open Channel, 2-4' deep
- Clearing and snagging of brush and debris
- Rock-lined channel
- Drive culvert replacements
- Subsurface drain installation



Construction Items – Representative Pictures



OPEN CHANNEL

Construction Items – Representative Pictures



ROCK LINED  
CHANNEL

Construction Items – Representative Pictures



RE-SEEDING  
FOLLOWING  
SUBSURFACE DRAIN  
INSTALLATION

Project Cost Estimate

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Construction - \$47,968.80

Administration, Construction Inspection, Drainage  
Maintenance Pay-in - \$14,753.76

**Total: \$62,722.56**

## Calculation of Assessments

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- ORC instructs the County Engineer to calculate assessments to individual property owners based on the benefits received
- “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.” (ORC 6131.01)*

## Calculation of Assessments

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- Acres Benefited x Landuse Factor x % Use = Parcel Assessment Factor
- Parcel % Share = Parcel Assessment Factor / Sum of Assessment Factors
- Parcel Assessment = % Share x Total Estimated Cost

## Payment Options

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- Pay full assessment upfront within 30 days of the final hearing (by June 8, 2022, also must give Notice of Intent by May 30, 2022)
- Have assessment placed on property tax bill as a Special Assessment
- Having the assessment placed on property taxes will include interest and other fees if the project is bonded and Auditor's/Treasurer's 2% collection fee

### Amortization Example

*\*Assuming no upfront payments*

Total Estimated Construction Cost – Direct Assessments = \$59,422.56

Average (mean) Assessment not including ROW = \$2,201 = 3.5% Share of Project

Debt Issuing Fees (Bond Counsel, Bank) = \$8,000

Bond Interest, 4% (estimate) = \$67,422.56 x 4% = \$2,696.90

Total Estimated Cost = \$70,119.46

3.5% Share of Total Estimated Cost = \$2,454.18

Auditor/Treasurer Fees (2%) = \$49.08

Total Assessment for Average Parcel = \$2,503.26

Amortization Example

Total Assessment = \$2,503.26    Semi-annual payment = \$156.45

8-Year Repayment Schedule

	<u>1<sup>st</sup> Half</u>	<u>2<sup>nd</sup> Half</u>
2024:	\$156.45	\$156.45
2025:	\$156.45	\$156.45
2026:	\$156.45	\$156.45
2027:	\$156.45	\$156.45
2028:	\$156.45	\$156.45
2029:	\$156.45	\$156.45
2030:	\$156.45	\$156.45
2031:	\$156.45	\$156.45

Bidding & Construction

- Approved projects are advertised for public bid
- Lowest and best bid to be awarded contract
- Projects are typically not subject to prevailing wage



## Bidding & Construction

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- Bids may not be accepted in excess of Final Hearing Engineer's Estimate (ORC 6131.40)
- Final schedule of assessments is reduced pro rata by the difference between the estimated cost and final cost
- Upfront payments receive a refund

## Drainage Maintenance

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- ORC 6137 requires completed projects to be placed onto Drainage Maintenance
- Purpose of Drainage Maintenance is to keep the project operating at its designed capacity
- Maintenance funds are collected as a Special Assessment
- Common Maintenance activities include inspections, seeding, repairs, and erosion control

## Drainage Maintenance

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- Maintenance assessments are determined based on the Final Schedule of Construction Assessments
- Most projects average 2.0 – 5.0% annual collections
- Collection Percentage can vary depending on the maintenance needs of the project
- Drainage Maintenance is perpetual

### Amortization Example

Construction Assessment = \$ 2,201 x 3% Maintenance Collection + 2% Auditor/Treasurer = \$67.35 - Annual Maintenance Assessment

### 8-Year Repayment Schedule

	<u>1<sup>st</sup> Half</u>	<u>2<sup>nd</sup> Half</u>
2024:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2025:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2026:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2027:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2028:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2029:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2030:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2031:	\$156.45 (C) + \$33.68 (M)	\$156.45 (C) + \$33.68 (M)
2032:	\$33.68 (M)	\$33.68 (M)

## Cost/Benefit Analysis

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- Benefits of drainage improvements exist for both agricultural and residential parcels
- Benefit to agricultural parcels is realized by the increased yield as a result of good drainage
- Estimated yield increases given the soils in the area would average 46 bushels per acre for corn, and 14 bushels per acre for soybeans given the appropriate drainage improvements are in place

## Cost/Benefit Analysis

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- USDA Average Crop price (2016-2020) for corn is \$3.87 per bushel, and for soybeans is \$9.66 per bushel
- 26 acres of the land in the watershed is currently agricultural
- Corn:  $46 \text{ bu/acre increase} \times \$3.87 \times 26 \text{ acres} = \$4,629$
- Soybeans:  $14 \text{ bu/acre increase} \times \$9.66 \times 26 \text{ acres} = \$3,516$
- Average Annual Benefit = \$4,072

## Cost/Benefit Analysis

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- Benefits to residential parcels focus on quality of life, neighborhood perception, and homesite sewage treatment systems (HSTS)
- A failed HSTS can cost \$15,000 - \$25,000 to repair or replace
- New developments average \$1000 - \$3000 per lot spent on providing adequate drainage outlets
- 22 residential parcels = \$22,000 - \$66,000 benefit at minimum

## Decisions

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- Options:
  - Approve project
  - Deny project
- Approval will require setting repayment period and whether to bond, confirming the schedule of assessments, and ordering the project be advertised for competitive bid

## Decisions

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- If decision is to deny, it is recommended to distribute costs incurred to this point to the landowners in the same ratio as determined by the final schedule of assessments
- Estimated costs to date = \$1,300

## Engineer's Recommendation

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*Based on all of the information gathered and generated, I believe this project 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.*