Coles Park Drain
Preliminary Engineering Summary

Ottawa County
Where You Belong

Coles Park Drain

Board of Determination

Joe Bush

Ottawa County Water Resources Commissioner

December 5, 2019

Presented by: Ryan C. McEnhill, PE

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BOARD OF DETERMINATION OVERVIEW

- Petition filed by Spring Lake Township for maintenance and improvements to alleviate drainage issues and to extend, add branches and add lands
- Michigan Drain Code requires a Board of Determination meeting
- Board composed of 3 disinterested members outside of Township affected
- Determine project necessity based on public health, welfare and convenience after hearing testimony

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PRELIMINARY WORK PERFORMED:

- Review the plat maps and history of drainage within the area of concern at the OCWRC's Office. Coles Park Drain established in 1972.
- Review and Research existing record information (GIS, aerial photographs, topographic info, previous design drawings, etc.)
- Evaluate appropriate drain extension(s) and determine the lands drained ("Drainage District") by the Coles Park Drain
- Field inspection of the drainage and watercourses within the Coles Park Drain Drainage District
- Provide an independent and unbiased assessment of the storm water conditions within the Drainage District
- Compile all analyses and report on those findings at the Board of Determination

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DISTRICT BOUNDARY OVERVIEW:

DISTRICT BOUNDARIES:

How Determined:

- Topographic Maps
- Ottawa Co. GIS
- Storm Sewer and Runoff Review
- Site Inspections

Drainage District Boundary Information:

- Proposed Drainage District Boundary = 57.6 Acres +/-
- Entirely within Spring Lake Township

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ORPHAN DRAIN SYSTEM:

WHAT IS THE DIFFERENCE BETWEEN A COUNTY DRAIN AND A PRIVATE (ORPHAN) DRAIN?

County – An existing drain on which the County Drain Commissioner legally maintains & oversees any improvements.

Private – Drains not under the jurisdiction of the Drain Commissioner. Private landowners, Subdivision Associations, Township, etc. must maintain or improve.

Only the 12-inch pipe on Coles Park Drive was established as County Drain.

Other catch basins and leaching systems are considered private (orphan) systems currently

Runoff from Ottawa Avenue being conveyed to lawn areas with no storm water infrastructure available

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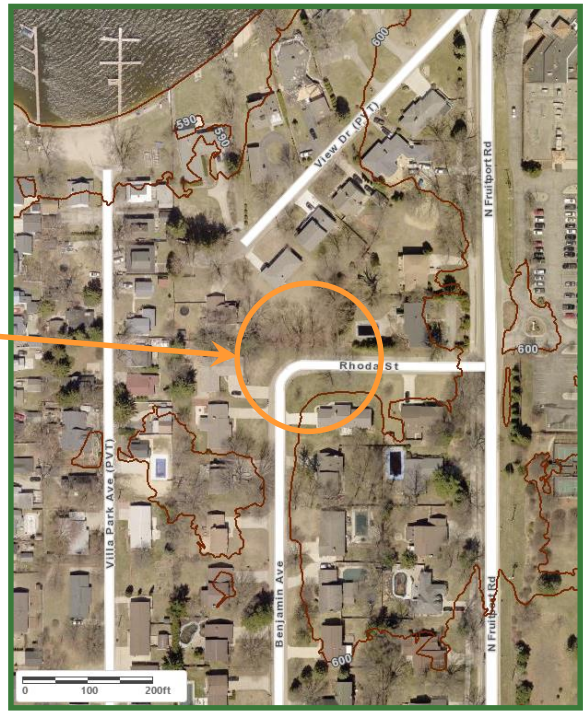
EXISTING DRAINAGE CONDITIONS OVERVIEW

Identified low areas with present standing water or drainage issues based on recent site visits



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EXISTING DRAINAGE CONDITIONS OVERVIEW

Standing water along the east side of Oak St between Pine St and Cherry St

Standing water along the east side and saturated lawns on the west side of Oak St between Pine St and Cherry St

*Similar issues on Ottawa Avenue (one block west)

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EXISTING DRAINAGE CONDITIONS OVERVIEW

Standing water along both sides of Beach Dr west of Franklin Ave looking west

Standing water within lawn area at intersection of Beach Dr and Laura St

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EXISTING DRAINAGE CONDITIONS OVERVIEW

Standing water on Lane Avenue north of Railroad Avenue looking north

Standing water in the driveway approach along Beach Drive

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EXISTING DRAINAGE CONDITIONS OVERVIEW

Lack of routine maintenance of existing leach basins

SUMMARY

- Widespread drainage issues throughout the platted areas.
- Low lying areas trapped between roadways without adequate storm water infrastructure causing prolonged standing water and saturated conditions

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EXISTING DRAINAGE CONDITIONS OVERVIEW

SOIL CONDITIONS

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes	1.0	0.8%
Me	Marsh	0.2	0.1%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	114.4	88.6%
W	Water	13.5	10.4%
Totals for Area of Interest		**129.1**	**100.0%**

Primary Soil Characteristics:

- Plainfield Sand
- Depth to water table at greater than 6-feet below grade
- Infiltration rates ranging from 1.5 to 14 inches per hour

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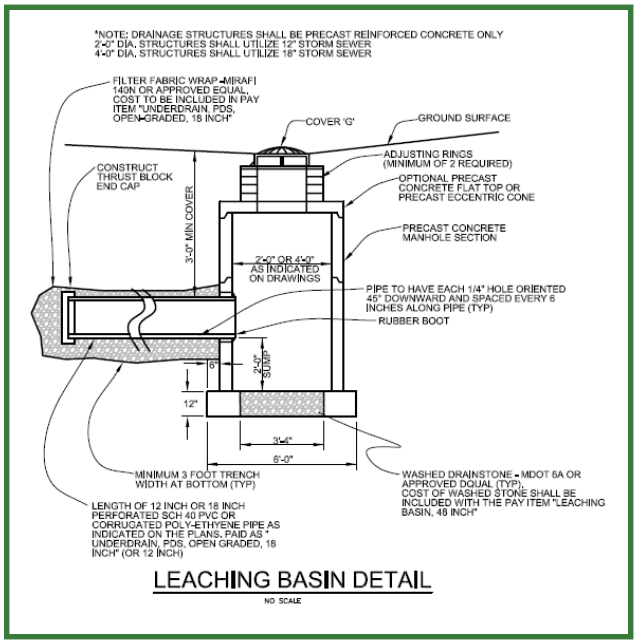
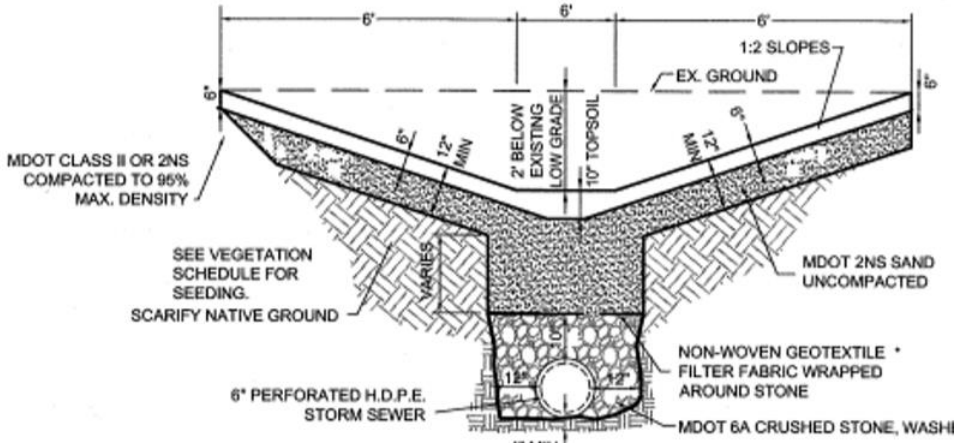
POTENTIAL SOLUTIONS

- Cost / Benefit Analysis
- Place leaching basins and/or bioswales in low areas to provide relief
- Minimize roadway reconstruction & costs by utilizing leaching (infiltration) systems





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NEXT STEPS

- Public Testimony
- Board to Determine Necessity of Petition
- If project found not necessary:
  - Project ends
- If project found necessary:
  - Evaluate scope of project and design alternatives
  - Finalize Design (obtain easements and permits, if necessary, and prepare bid plans)

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