Mason Drain
Preliminary Engineering Summary

DISTRICT BOUNDARY OVERVIEW:

- Proposed Mason Drain Drainage District Boundary
Mason Drain
Preliminary Engineering Summary

WORK PERFORMED:

• Review of Drain Commissioner’s historic files.
• Research existing map data (GIS, aerial photographs, topographic info, district boundaries, etc.)
• Review any Drain complaint records & maintenance issues.
• Review prior construction work.
• Identify the proposed Drainage District boundary for the Mason Drain.
• Survey and inspect the Mason Drain study area to review stormwater conditions.
• Meet with property owners to understand their drainage issues (or non-issues) in the District.
• Provide an *independent and unbiased* assessment of the stormwater conditions.
• Compile all analysis in a Preliminary Engineering Summary and report on those findings at a Board of Determination.
Mason Drain
Preliminary Engineering Summary

HISTORY OF THE DRAIN:

- Originally established as a County Drain in 1910

Recent Maintenance History:
- Pipe Repair North of South Shore Drive to Outlet (1990s)
- Several Root Cutting repairs at South Shore Drive (1990s & 2000s)

Current Petition: Dated June 23, 2013
Mason Drain
Preliminary Engineering Summary

DISTRICT BOUNDARIES

- Existing Mason Drain Drainage District Boundary (1910 Final Order)
- Proposed Drainage District Boundary

- Site Inspections
- Muskegon County GIS
- Topographic Maps
- Review of Drainage Maps
- Structure Inventories
Mason Drain
Preliminary Engineering Summary

What is a Drainage District / Watershed Boundary?

- It's the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater through which these inputs of water then seek a common outlet.

- You're sitting in a watershed now. Homes, farms, ranches, forests, small towns, big cities and more can make up watersheds. Some cross county, state, and even international borders. Watersheds come in all shapes and sizes. Some are millions of square miles, others are just a few acres. Just as creeks drain into rivers, watersheds are nearly always part of a larger watershed.

Drainage District Boundary Information

- Existing Drainage District Boundary = 196 acres
- Proposed Drainage District Boundary = 364 acres
- Approximately 109 properties within Proposed Drainage District Boundary
Mason Drain
Preliminary Engineering Summary

SUMMARY OF DRAIN SYSTEM

Mason Drain – 12-inch Pipe to White Lake
Mason Drain – Golf Course Pond
Private Retention Pond

P.O.B. - Mason Drain
Private Branch Drain to Golf Course pond provides relief for upper watershed
WHAT IS THE DIFFERENCE BETWEEN A COUNTY (EXISTING DRAIN) AND A PRIVATE (PROPOSED DRAIN OR WATERCOURSE) DRAIN?

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

Private – Drains not under the jurisdiction of the Drain Commissioner. Private landowners, Township, etc. must maintain or improve.
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:
• Existing Infrastructure Issues
• Outlet to White Lake
• Groundwater Seepage
• Potential Illicit Discharges
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:

- Existing Infrastructure Issues
  - Tree Root Intrusion
- No Water Level Control Structure
EXISTING CONDITIONS:

- Existing Infrastructure Issues
  - Algae Blooms & Invasive Species
- Water Capacity Reduced
- Maintenance Issues
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:
• Existing Infrastructure Issues
  • Vegetative overgrowth detrimental to flow and capacity
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:

• Existing Infrastructure Issues
  • Lack of water flow through system
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:
- Private retention pond – significant capacity to retain stormwater
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:
• Existing Infrastructure Issues
  • No Outlet for Private Pond
• Pond Levels Rise and Flood Surrounding Land
Mason Drain
Preliminary Engineering Summary

EXISTING CONDITIONS:

• Existing Infrastructure Issues
  • Flooding
Mason Drain
Preliminary Engineering Summary

QUESTIONS?