Montague Drain
Board of Determination

Muskegon County Drain Commissioner
Brenda M. Moore (Drain Commissioner)
Stephanie Barrett (Deputy Drain Commissioner)
Presentation Overview

- Why Are We Here?
- Drain Overview
- Historic Developments
- Drainage Issues
- Drainage District Revisions
- What Happens Next?

Eilers Road Culvert
Why Are We Here?

• Muskegon County Drain Commissioner received a petition from City of Montague for “cleaning out, relocating, widening, deepening, straightening, tiling, extending, or relocating, adding lands, and/or adding one or more branches” to the Montague Drain.

• Michigan Drain Code Act 40 of 1956, as amended, mandates that as part of the petition process, the Drain Commissioner must schedule and hold a Board of Determination (BOD).

• BOD will hear all testimony and determine if a project is necessary based on public health, welfare or convenience.
Drain Overview

- Tributary to White River / White Lake
- Established in 1946
- Total Length
  - Main Line: 1,539-ft
  - Branch #1: 300-ft
  - Branch #2: 300-ft
  - Branch #3: 1,180-ft
- Easement Width
  - Main Line: 66-ft
  - Branch #1 & #2: 24-ft
  - Branch #3: 50-ft
Drain Overview

- 815 Acre Watershed
- Buttermilk Creek primary Tributary
- Hilly Topography
  - 130-ft Drop from Upper Watershed to White River
- Upper Watershed
  - Primarily Agricultural
  - Clay / Loam (less Permeable Soils)
- Lower Watershed
  - More Urbanized
  - Sandy Soils (susceptible to Erosion)
Historic Developments

- Factors Affecting Watershed
  - Hillslope (Steep Topography, Erodible Soils)
  - Hydrologic Processes (Changes in Land Use)
  - Channel Processes (Direct / Indirect Impacts)
Historic Developments

• 1946 – Construction of Montague Drain Storm Sewer

Profile – 1946 Construction Drawings

RCP Storm Sewer Outlet – Looking Upstream from Montague Foods
Historic Developments

• 1986 – Failure of Dam along Buttermilk Creek ~ 1000-ft Downstream (South) Eilers Road

Breached Dam, Looking Upstream
Historic Developments

• 1993 – USDA / Soil Conservation District Construct Sediment Basin near Downstream Terminus to Reduce Sediment Delivery to White River

Sediment Basin – Requires Cleanout
Historic Developments

- 1990’s or 2000’s? – Construction of CMP Control Structure along Buttermilk Creek, Upstream Park Street

Control Structure – Upstream of Park Street
Historic Developments

• 2014 – Eilers Road Culvert Failure along Buttermilk Creek

Eilers Road Washout - 2014

Eilers Road Culvert - 2017
Drainage Issues

• Flashy Flows in Upper Watershed

Flooding – January 2017

Montague Drain – Upper Watershed
Drainage Issues

- Severe Channel Erosion between Eilers Road and Utility R.O.W.
  - Channel Head-Cut / Down-Cut
  - Lateral Expansion (Bank Erosion)
  - Channel Evolution

Bank Erosion – Downstream of Eilers Rd.
Drainage Issues

- Sedimentation and Woody Debris Downstream Utility R.O.W.

  Sediment Bar – DS Utility ROW
  Woody Debris Obstructions – US Cook St.
Drainage Issues

• Flooding within City of Montague

Post Office – Reported Flooding Issues
Drainage District Revisions

- Update Drainage District Boundary based on Contributing Watershed
- Historic Area: 649.9 Acres
- Add Lands: 178.8 Acres
- Remove Lands: 13.7 Acres
- Revised Area: 815 Acres
What Happens Next?

• Open floor to public testimony (written and oral).
• BOD to decide if petition is necessary:
  • If the BOD finds that the petition is not necessary, the project ceases immediately and no petition can be heard for the same project until 12 months have passed.
  • If the BOD finds that the petition is necessary based on health, welfare or convenience, the Drain Commissioner proceeds with a project. Each project is unique, however, in accordance with the Drain Code, the following tasks must be completed:
    1. Complete Topographic Survey / Engineering Design
    2. Obtain Easements (if necessary)
    3. Apply for Permits (if necessary)
    4. Bid Project
    5. Hold “Day of Review”
    6. Construct Project