



# Shorts Creek Drain Improvements Public Informational Meeting

Saginaw County Public Works Commissioner  
Brian J. Wendling

February 2, 2021



# Purpose of Meeting

- This is a follow up to the Board of Determination Meeting held on November 7, 2019, where voted necessary
- To inform the landowners in the drainage district of the proposed drain improvements
- To review project history, design of improvements, costs and what to expect during construction
- To receive input and comments from the landowners based on the proposed project

# Meeting Agenda

- Drainage District and History
- Engineering and Design
  - Field Survey, Field Findings, and Design Approach
  - Analysis and Recommendations
  - Culvert Crossing Summary
  - Open Channel Improvements
- Construction and Restoration Details
- Preliminary Cost Estimates
- Tentative Project Schedule
- Questions and Comments

# Drainage District

- What is the Drainage District?
  - Lands that contribute water runoff into the drain
  - Serves as special assessment district
- Drainage District for Shorts Creek Drain includes:
  - Fremont Township 89.6% area in district
  - Richland Township 2.5% area in district
  - Lakefield Township 7.9% area in district
  - Saginaw County Road Commission (road right-of-way)
  - 295 Landowners

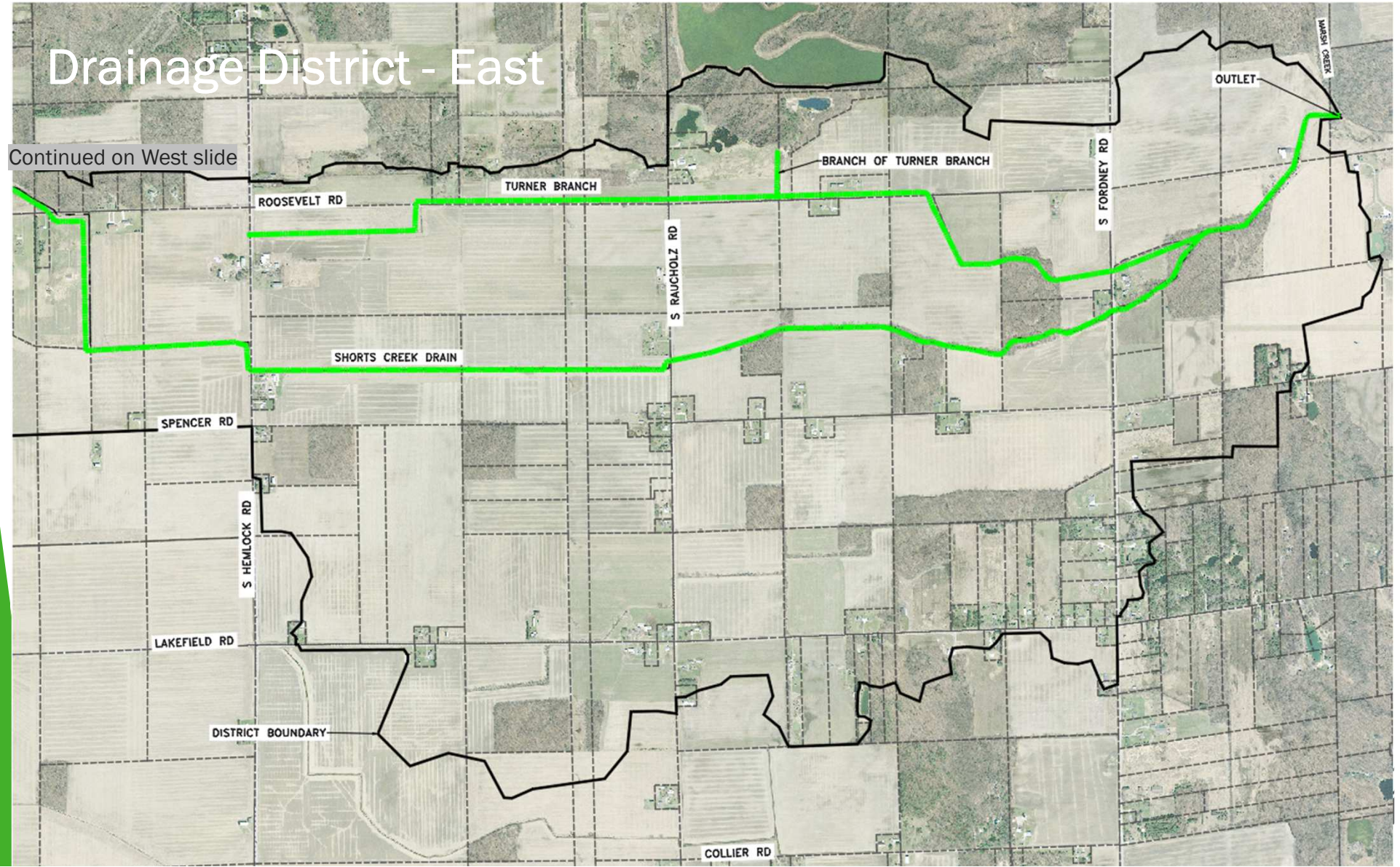
# Drainage District History

- Drain established in 1901
- Area of district is 4,374 acres
- Approximately 295 parcel owners in District
- Last petitioned cleanout was in 1972 with select maintenance completed in 2016 along Roosevelt Road, west of Hemlock Road
- Current petition filed on 8/22/2019 by David Frolo
- Board of Determination held on 11/7/2019 and project found necessary

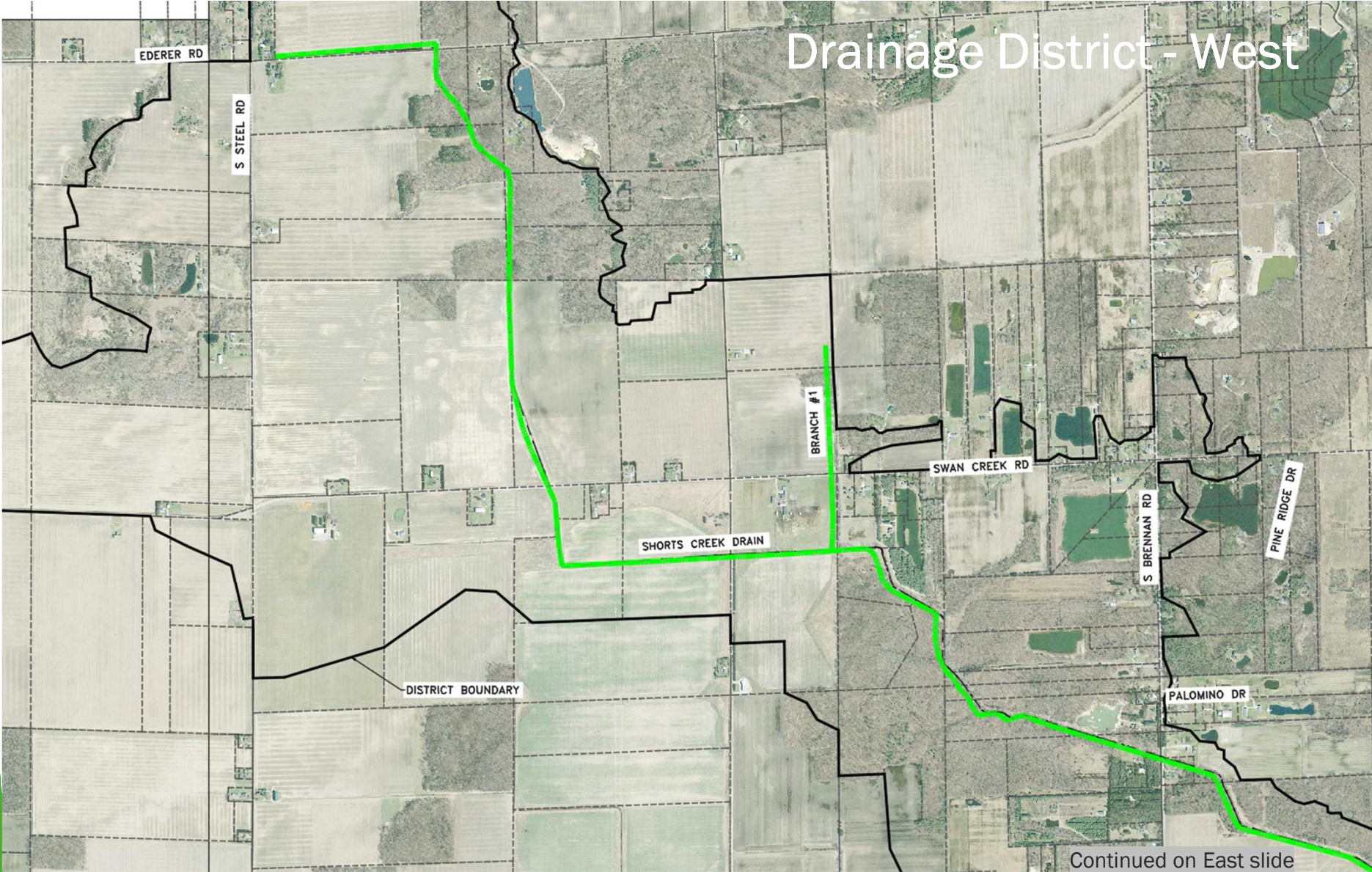
# Drainage District

- Lengths of drains and branches
  - Shorts Creek Main Drain = 7.5 miles
  - Turner Branch = 2.4 miles
  - Branch #1 = 0.5 miles
  - Branch of Turner Branch = 0.1 miles
- 33 culvert crossings (13 road culverts)
- 10 other bridge crossings
- Outlets into the Marsh Creek Drain, north of Roosevelt Road

# Drainage District - East



# Drainage District - West





# Field Survey

- Field assessment and survey included
  - Existing culvert crossings: length, size, material, elevation and condition assessment
  - Open drain: Collected drain cross section elevations
    - At bends and crossings
    - Every 500-600 feet
  - Top of bank washouts
  - Topographic features obtained to generate computer base drawings

# Field Findings

- Shorts Creek Drain – Main
  - Decent flow most of the drain
  - Trees and sediment bars in the bottom of drain
  - Low, flat sediment areas at corners
  - Raucholz Rd bridge failing
- Turner Branch
  - No flow along Roosevelt Rd
  - Culverts submerged and poor condition
  - High sediment

## Field Findings - continued

- Branch #1
  - High sediment and vegetation in the drain
  - Trees within the banks
  - No flow during inspection
  - Culvert appeared to be placed high
- Branch of Turner Branch
  - No flow during inspection
  - Some vegetation and trees within the banks

# Design Approach

- Survey and inspection data compiled for analysis and design
- Hydraulic analysis completed for existing and proposed
- Evaluated:
  - Existing drain grade line (top of sediment)
  - Culvert Crossings for size, elevation and condition
- Developed recommendations for improvements
- Drafted preliminary design plans
- Finalized design plans and specifications
- Prepared opinion of construction costs

# Analysis and Recommendations

- Established new drain grade line with sediment removal and culvert inverts
- Evaluated proposed 2 horizontal to 1 vertical side slopes
- Identified culverts to be replaced
  - No new bag riprap headwalls
- Identified culvert maintenance needs: cleanout and add riprap for end slope reinforcement

# Existing Crossing Summary – Shorts Creek Drain

Crossing Number	Type	Size	Material	Condition	Recommendation	Property Owner
Crossing #1	Road	144"x72"	CMPA	Good		Roosevelt Rd
Crossing #2	Road	120"x76"	Conc Box	Good		Fordney Rd
Crossing #3	Field	168"x96"	CMPA	Fair	Remove/Relocate	Zelinko
Crossing #4	Road	9.3'x7'	Conc rail tie bridge	Failing	Replace	Raucholz Rd
Crossing #5	Field	11'x6'	Conc rail tie bridge	Poor		Turner
Crossing #6	Road	10.8'x6'	Conc Box	Good		Hemlock Rd
Crossing #7	Field	30'x8.2'x1'	Telephone wood bridge	poor		Collier
Crossing #8	field	66"	CMP	Fair		Collier
Crossing #9	Road	82"x58"	CMPA	Poor		Roosevelt Rd
Crossing #10	Ped Bridge	33'x6'x2'	Wood bridge	Good		Turner
Crossing #11	Road	138"x78"	CMPA	Fair		Brennan Rd
Crossing #12	woods trail	96"	Steel pipe	Fair		Liebrock
Crossing #13	Trail	138"x78"	CMPA	Fair		Wirth Terence
Crossing #14	Road	138"x78"	CMPA	Poor/Fair		Iva Rd
Crossing #15	Field	113"x82"	CMPA	Fair		Durussel
Crossing #16	Field	113"x82"	CMPA	Fair		Williams
Crossing #17	Field	118"x76"	CMPA	Good		Williams
Crossing #18	Road	106"x76"	CMPA	Fair		Swan Creek Rd
Crossing #19	Woods trail	42"	CMP	Fair		Boensch
Crossing #20	Road	36"	RCP	Good		Ederer Rd

# Existing Crossing Summary – Turner Branch and Branch #1

Crossing Number	Type	Size	Material	Condition	Recommendation	Property Owner
Crossing #21	Road	60"	CMP	Poor		Fordney Rd
Crossing #22	Field	48"	Steel pipe	Poor		Graham
Crossing #23	Road	60"x48"	Ellip Conc	Poor		Roosevelt Rd
Crossing #24	Driveway	36"x18"	Ellip Conc	Poor	Reset	Slocum
Crossing #25	Driveway	36"	CMP	Poor	Replace	Walter
Crossing #26	Road	48"	CMP	Poor		Raucholz Rd
Crossing #27	Driveway	36"	CMP	Poor		Mackey
Crossing #28	Driveway	36"	CMP	Poor		Winchell
Crossing #29	Road	36"	CMP	Poor		Roosevelt Rd
Crossing #30	Field	24"	CMP	Fair		Zelinko
Crossing #31	Road	24"	CMP	Fair		Hemlock Rd
*Crossing #32	Field	36"	CMP	Fair	Replace	Hatfield
*Crossing #33	Road	30"	RCP	Poor		Swan Creek Rd
*Crossing #34	Field	24"	CMP	Poor		Frollo

\*Branch #1



## Crossing Photos – Shorts Creek Drain



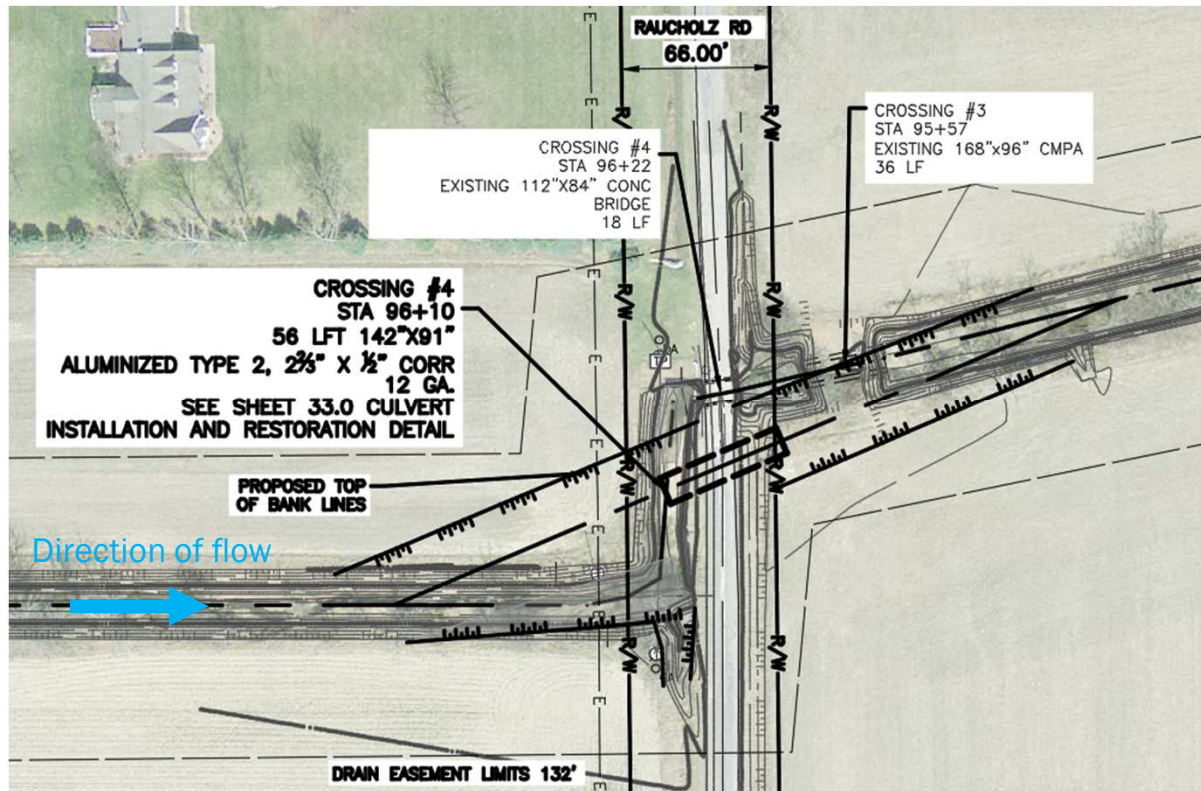
Crossing #3 Zelinko to be removed/relocated because of drain realignment



Crossing #4 Raucholz Rd. to be replaced with CMP Culvert



# Crossing Photos – Shorts Creek Drain



Crossing #3 and #4 plan view of realigned drain. Preliminary plan is to remove or relocate Crossing #3 and replace Crossing #4.

## Crossing Photos – Turner Branch



Crossing #24 Slocum to be replaced with CMP



Crossing #25 Walter to be replaced and lowered

## Crossing Photos – Branch #1



Crossing #32 Hatfield to be replaced with CMP

# Construction Details - Clearing

- Clearing and Grubbing of trees and brush within drain banks
  - Wooded areas to 20 feet from top of bank on working side for future maintenance access
  - Cleared 10 feet on opposite top of bank
- Removal of debris along banks and at crossings
- Level spoil along drain banks
  - Remove within lawn areas
  - Cuts in the spoils for riprap spillways to allow field drainage

## Construction Details – Working Side

- Work from one side of the Drain
- Plans propose working side of drain based on existing conditions, minimizing tree removals, etc.
- Contractor to provide proposed construction sequence prior to beginning work
- Maintenance culverts will be placed on side ditches where needed to allow access to the drain for future maintenance

## Construction Details - Restoration

- Disturbed areas in yards will be restored with topsoil, fertilized, mulched and seeded
- Any spoil in yard areas will be hauled away
- All other disturbed areas will be seeded
- Excess debris will be removed
- Driveways to be restored to existing condition
- Burning shall only occur in open areas (Contractor to have permit from Township)
  - Contractor can chip and spread in wooded areas unless landowner requests to keep wood

# Preliminary Cost Estimate

- Includes:
  - Clearing and Grubbing
  - Erosion Control & Traffic Control
  - Open/Restricted Channel Improvements
  - Culverts Crossing Improvements, Removal and Replace
  - Field Tile and Surface Water Inlet Repairs
  - Engineering, Survey and Design Fees
  - Legal and Bond Attorney Fees
  - Construction Contingencies

# Preliminary Cost Estimate

- Total Estimated Project Cost
  - \$690,000 including construction contingencies
  - 4,343 acres and 295 parcels in Drainage District
- Final Construction costs to be determined by Contractor's bids



## Approximate Breakdown of Costs

- Saginaw County – Approx. 3.80%
- Saginaw County Road Commission – Approx. 9.10%
- Fremont Township = 13.44%
- Lakefield Township = 1.19%
- Richland Township = 0.37%
- Landowners = Approx. 72.10%
- 295 assessable parcels in drainage district

# Tentative Project Schedule

- Finalize Plans and Bid Documents February 2021
- Bid Letting March
- Day of Review of Apportionment April
- Financing April
- Contractor Notice to Proceed May
- Tree Clearing May/June
- Drain Construction/Cleanout Summer 2021
- Final Restoration Fall 2021

Questions?