

Misteguay Creek Intercounty Drain

Hearing of Necessity
December 11, 2012



Misteguay Creek Intercounty Drainage Board

- Michigan Department of Agriculture and Rural Development
 - Michael Gregg – Board Chair
- Saginaw County Public Works Commissioner
 - Matthew Rappley
- Genesee County Drain Commissioner
 - Jeffrey Wright
- Shiawassee County Drain Commissioner
 - John Bush – Ionia County Drain Commissioner appointment for Commissioner Anthony Newman



Drainage Board Responsibility

- Operate and maintain within its jurisdiction the Misteguay Creek drainage and flood protection system
- Entertain and act upon petitions for drain repair, maintenance, and improvements
- Board regularly commissions inspections and limited maintenance of the system



Drainage Board Jurisdiction along Misteguay Creek

- Approximately 20 miles of creek including
 - Shiawassee River to Gary Road
 - New Lothrop Road to Corunna Road
- Approximately 19 miles of dike including
 - Flint River to Gary Road, east and west dike
 - Downstream of Flint River, west dike only
- 3 flood control dams
 - Located between Gary and Henderson Roads



2010 Inspection Identifies Deficiencies

- In 2010, inspected between Verne Road to Structure No. 4
- Identified severe erosion and deficiencies along dikes in this area
- Inspection conclusion - high risk of dike failure
- Findings of the inspection were presented to local government trustees and officials



Petitioned for Drain Project

- A petition was filed by Albee Township on April 13, 2010
- Petition content
- Hearing of Practicability was convened
 - Landowners and municipalities in the Misteguay District notified of Hearing
 - Hearing conducted at Albee Township Hall on June 3, 2010 - meeting well attended
 - Petition determined practicable



Hearing of Practicability

- Presented findings of inspection completed between Verne Road to Structure No. 4
- Acknowledgement that problems along dikes exist and need to be addressed
- Concerns of problems along dikes in other areas also (downstream of Verne Road)



Purpose of this Meeting

- Hearing of Necessity for a Project
 - Drain Board to decide if necessary to move forward with implementation of a project
 - Drain Board to determine if project is necessary for public health of municipal corporations
- If you received a Notice of this meeting, your property is currently in the District or proposed to be added to the District



Necessity Hearing Process

- Engineering report presentation
- Receive public testimony and input
 - Speaker cards
- Board member comments
- Appropriate motions
- Final board member comments



Litigation Timeline

- April 13, 2010: Albee Township, Saginaw County files petition for drain maintenance and improvement.
- June 3, 2010: Practicability hearing conducted; practicability found by Drainage Board.
- April 14, 2011: Necessity hearing convened but adjourned to locate larger meeting facility.
- May 2, 2011: Maple Grove, Hazelton, Venice, New Haven, Caledonia, Clayton, Montrose & Flushing Townships file suit in Genesee County Circuit Court seeking to invalidate petition and drain proceedings.
- June 20, 2011: Genesee County Circuit Court enters order granting Drain Board's motion to dismiss Townships' lawsuit.



Litigation Timeline

- July 8, 2011: Maple Grove, Hazelton, Venice, New Haven & Caledonia Townships claim an appeal from the Genesee County Circuit Court's decision to the Michigan Court of Appeals.
- March 2, 2012: Court of Appeals enters an order staying further Drain Code proceedings pending its decision.
- September 6, 2012: Oral arguments conducted before the Court of Appeals in Detroit.
- September 18, 2012: Court of Appeals issues opinion upholding Genesee County Circuit Court decision dismissing Townships' lawsuit.
- October 30, 2012: Time for filing application for leave to appeal to Michigan Supreme Court expires; no application filed.



Judicial Findings

- The petition filed by Albee Township is valid and it gave the Drain Board jurisdiction to proceed under the Michigan Drain Code.
- Only one practicability hearing on a petition is required and the practicability hearing conducted by the Drainage Board on June 3, 2010 was sufficient.
- The question of whether land should be added to the Drainage District is one to be decided by the Drainage Board after it decides the question of necessity.
- The Drain Board complied with applicable statutes, the proceedings that have been conducted are valid and costs incurred in connection with litigation may be assessed.



Litigation Expenses

- Drainage Board costs incurred to date:
\$46,375.03



Engineering Report Overview

Presented by Ronald Hansen, P.E., P.S.

- Inspections
- Findings
- Recommendations



Scope of Engineering Study

- Review of assessment district boundary
- Inspection of dikes, channel, bridges and structures in lower Misteguay
- Performance of limited survey, geotechnical evaluation, hydraulic analysis
- Development of preliminary design recommendations
- Preparation of planning level cost estimates



Assessment District

- Lands in District subject to special assessment for operation, maintenance and improvements to the Misteguay Creek drainage and flood protection system



Assessment District

- Assessment District (referred to as “District”) includes:
 - Landowners
 - Townships, Villages, Cities
 - Counties
 - Railroads
 - MDOT



Engineering Inspections

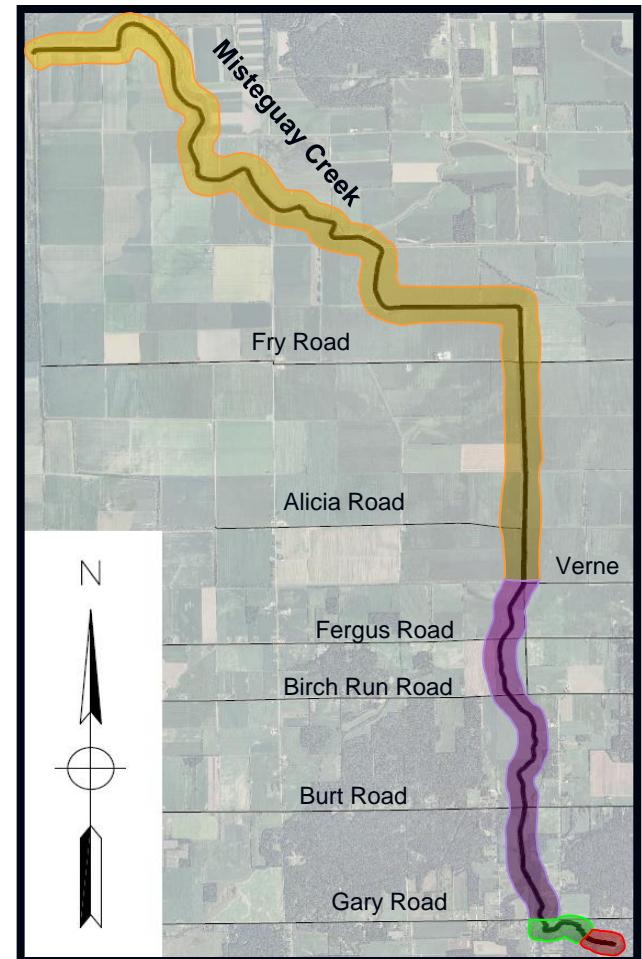
- Inspection classified into 4 reaches

- Downstream of Verne Rd

- Gary Rd to Verne Rd

- Structure 4 to Gary Rd

- Near Structure 4

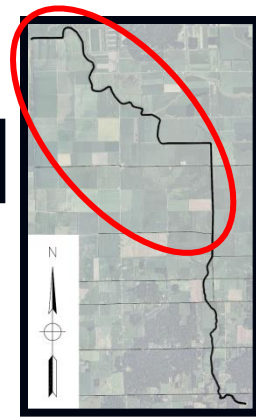


Elevation Survey

- Downstream of Verne Road
 - GPS top of dike & 15 cross sections
 - Use of aerial topography
- Verne Road to Gary Road
 - GPS survey sections at 100' intervals
- Upstream of Gary Road
 - Use of aerial topography for initial analysis



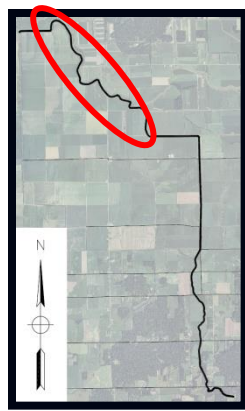
Downstream of Verne Road



- Significant areas of sloughing and moderate erosion
- Isolated areas with vertical banks near toe of dike and severe erosion
- Areas with heavy tree growth
- Where dike is set back from creek, fair condition

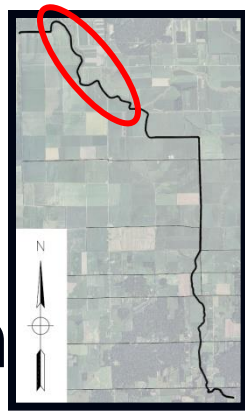
Downstream of Flint River

- Several areas with natural sediment shelf buffer between dike and creek
 - Areas considered stable condition



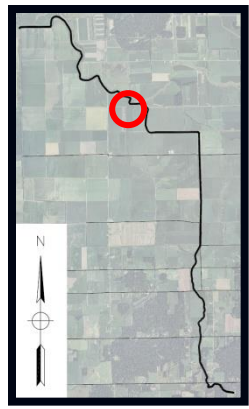
Downstream of Flint River

- Several areas with toe of slope erosion and near vertical banks
 - Restoration recommended



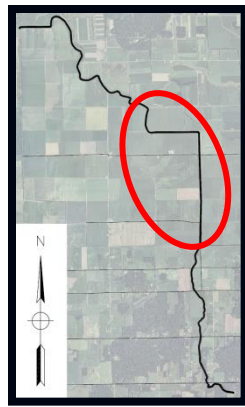
Oxbow Downstream of Flint River

- Severe erosion and section loss
 - Restoration recommended



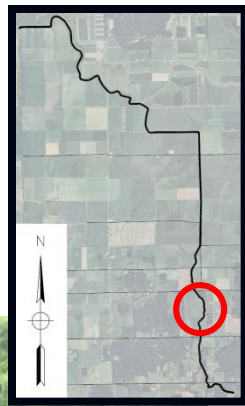
Flint River to Verne Road

- Long reaches with bank sloughing and moderate erosion
 - Restoration recommended



Verne Road to Gary Road

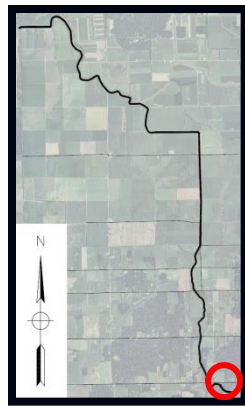
- Severe erosion, bank sloughing, and section loss



- Restoration recommended

Near Structure No. 4

- Inspection completed in accordance with dam safety requirements
 - Maintenance items identified for dam safety



Geotechnical Evaluation by Soil and Materials Engineers

- Verne Road to Gary Road - obtained 16 soil borings to depth of 40 feet
 - Significant presence of sand and loose soil found in dikes mixed with clay and loam soils
 - A few areas of unsuitable organic material were identified, not common though



Geotechnical Evaluation by Soil and Materials Engineers

- Generally existing soils in dike can be used to rebuild
- 2.5 horizontal to 1 vertical slope needed based on soils
 - Currently much steeper therefore unstable and erosion prone
- Organic soils and material should not be placed in dike
- Dike should be systematically compacted



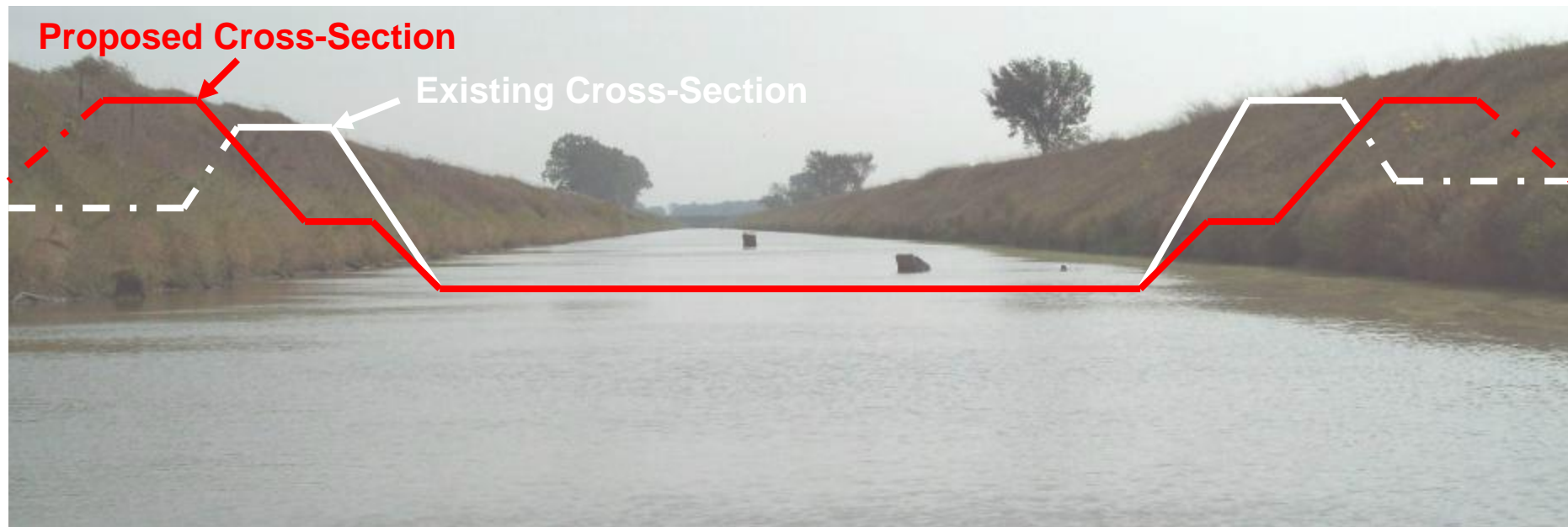
Recommended Design Parameters

- Promote long term stability of dikes
- Maintain existing level of protection
- Create easy access for future maintenance
- Implement erosion control measures



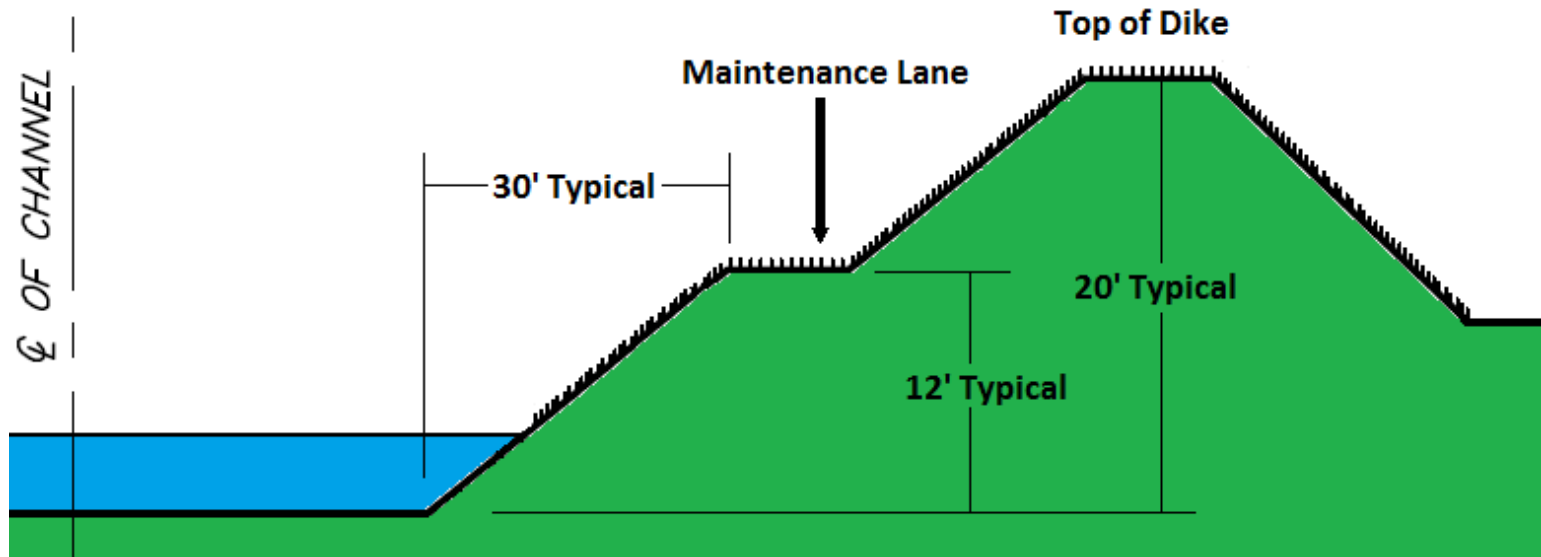
Recommended Cross-Section

- Construct slopes to 2.5 horizontal to 1 vertical
 - Needed for stability based on geotechnical analysis
- Add construction and maintenance lane



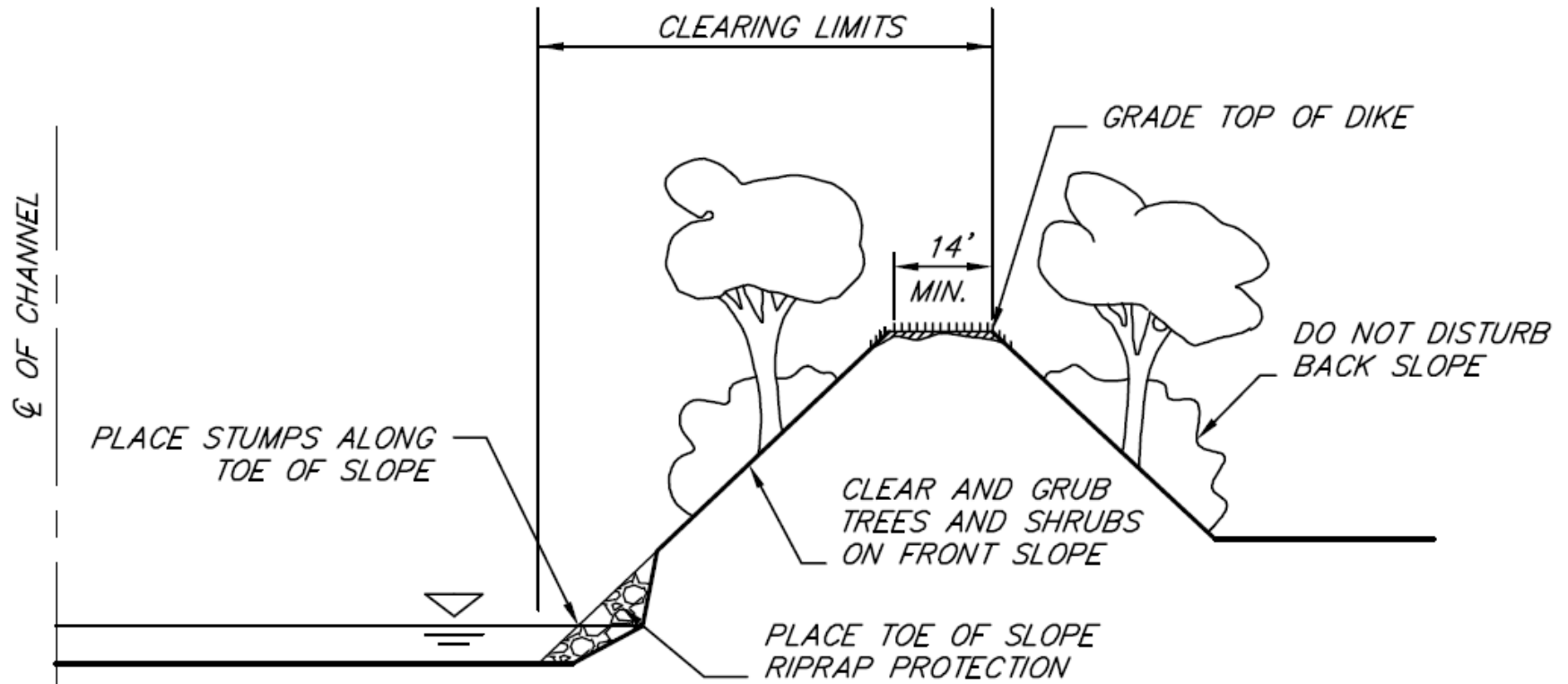
Constructability Assessment

- Reach of typical large excavator is 30-35 feet
- Need shelf in dike for construction and maintenance



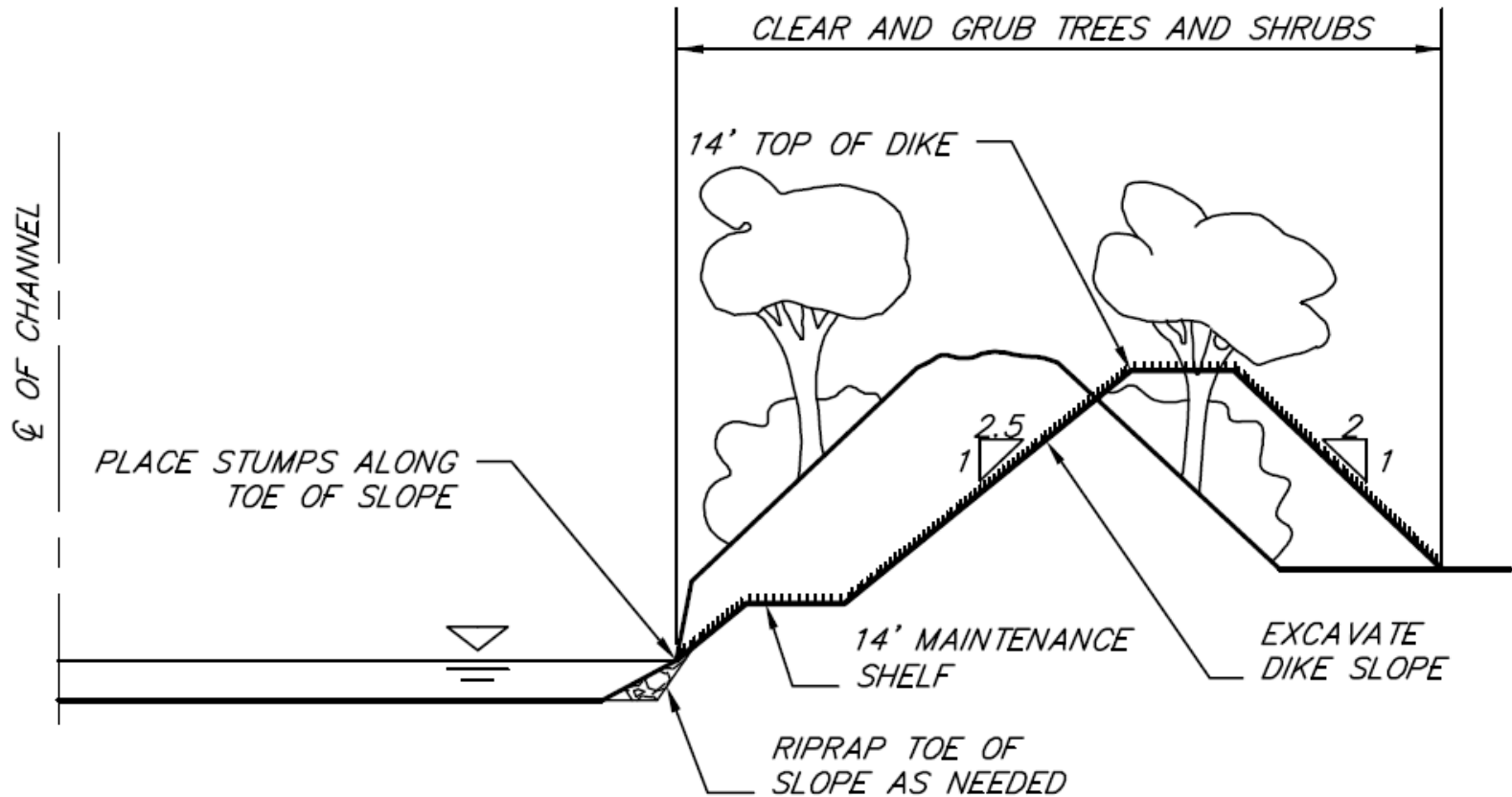
Recommended Cross-Sections

*PILE AND BURN TREES ON TOP OF DIKE.
PLACE DEBRIS ON TOE OF BACK SLOPE.*



Recommended Cross-Sections

PILE AND BURN TREES ON TOP OF DIKE.
BURY DEBRIS BEYOND TOE OF BACK SLOPE.



Top of Dike Elevation Analysis Downstream/near of Flint River

- Previously established minimum dike elevation not available
 - Typical existing top of dike elevation 596
 - Lowest measured elevation 594.26
(Low elevation near oxbow)
 - Highest measured elevation 599.32
- Recommended minimum elevation of 595.45 to maintain level of service

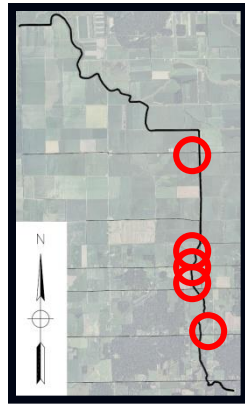


Top of Dike Elevation Analysis Flint River to Gary Road

- Previously established minimum dike elevation between from 594.21 to 601.90
- Recommending minimum near Flint River of 595.45 and maintaining upstream minimum dike elevations
- Typical elevation 0-2 feet above minimum
- Highest elevation 14.8 ft. above minimum
- Lowest elevation is just upstream of Flint River



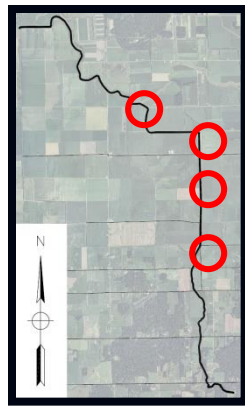
Bridges



- 3 recommendations
 - Underpin abutments & extend wing walls
 - Riprap banks
 - Remove bridge
- 5 bridges along lower Misteguay Creek
 - Burt Road – underpin & wing walls
 - Birch Run Road – bank riprap
 - Fergus Road – bank riprap
 - Verne Road – remove
 - Fry Road – bank riprap

Side Drain Outlets

- 4 major Drains outlet into Misteguay
 - Denslow Drain
 - Peart Drain
 - Savage Drain
 - Munson Drain
- Recommendations
 - Add concrete headwalls
 - Rehabilitate or replace flap gates
 - Provide maintenance lane
 - Set back from main Misteguay channel



Engineering Conclusions

- Findings:
 - Deficiencies of various priorities were identified throughout lower Misteguay Creek
 - High risk of failure
- Recommendation
 - Implement a project to repair deficient areas
 - Construct stable slopes
 - Stabilize at bridge
 - Repair side drain outlets
 - Aggressive long-term maintenance plan



Planning Level Cost Estimate

- Currently, estimates only available, actual cost based upon selected project scope and construction bids



Planning Level Costs for Various Sections

- Planning level construction cost estimates
 - Verne Road to Gary Road and dam
 - \$2,320,000
 - Flint River to Fry Road
 - \$1,350,000
 - Downstream of Flint River
 - \$1,340,000
 - Fry Road to Verne Road
 - \$1,070,000



Additional Costs

- 10-15% contingencies
- Surveying and engineering
- Bond and interest
- Easements
- Permitting
- Construction administration
- Utility Coordination
- Legal



Distribution of Costs

- Spread onto Assessment District
- Individual assessments will vary based on benefits and acreage
- Assessments provided at Day of Review
- Costs can be financed over multiple years



Next Steps, If Determined Necessary

- Hearing regarding addition of lands to district
- Final engineering and project scoping
- Establish apportionments between counties
- Obtain necessary easements for construction
- Coordination and permitting with impacted utilities and governmental agencies
- Bid letting phase
- Day of Review of Apportionment
- Project financing and bonding
- Proceed with construction

Next Steps, If Determined Not Necessary

- Hearing regarding addition of lands to district
- No further action on current petition
- Subsequent petitions may be filed
- Cost incurred to date will be assessed



Public Testimony

- Fill out speaker cards
- State name and relation to proposed project
- Limit comment to 3 minutes
- Be specific; focus on necessity question
- Leave copy of materials, if any, with Board



Board Deliberation and Necessity Decision



Appeal

- Any person feeling aggrieved by the determination of necessity or no necessity for the project may institute an action in County Circuit Court within **10 days** after the determination by the Board.





Break



Misteguay Creek Intercounty Drain

Hearing to Add Lands
December 11, 2012



Purpose of Meeting

- Hearing to Add Lands to Assessment District
 - Drain Board to decide on need to add lands to the Assessment District
- If you received a Notice of this meeting, your property is currently in the District or proposed to be added to the District



Recommended Assessment District

- Assessment district includes lands that
 - Drain towards the Misteguay (Drainage Area)
 - Receive flood protection from Misteguay (Flood Protection Area)



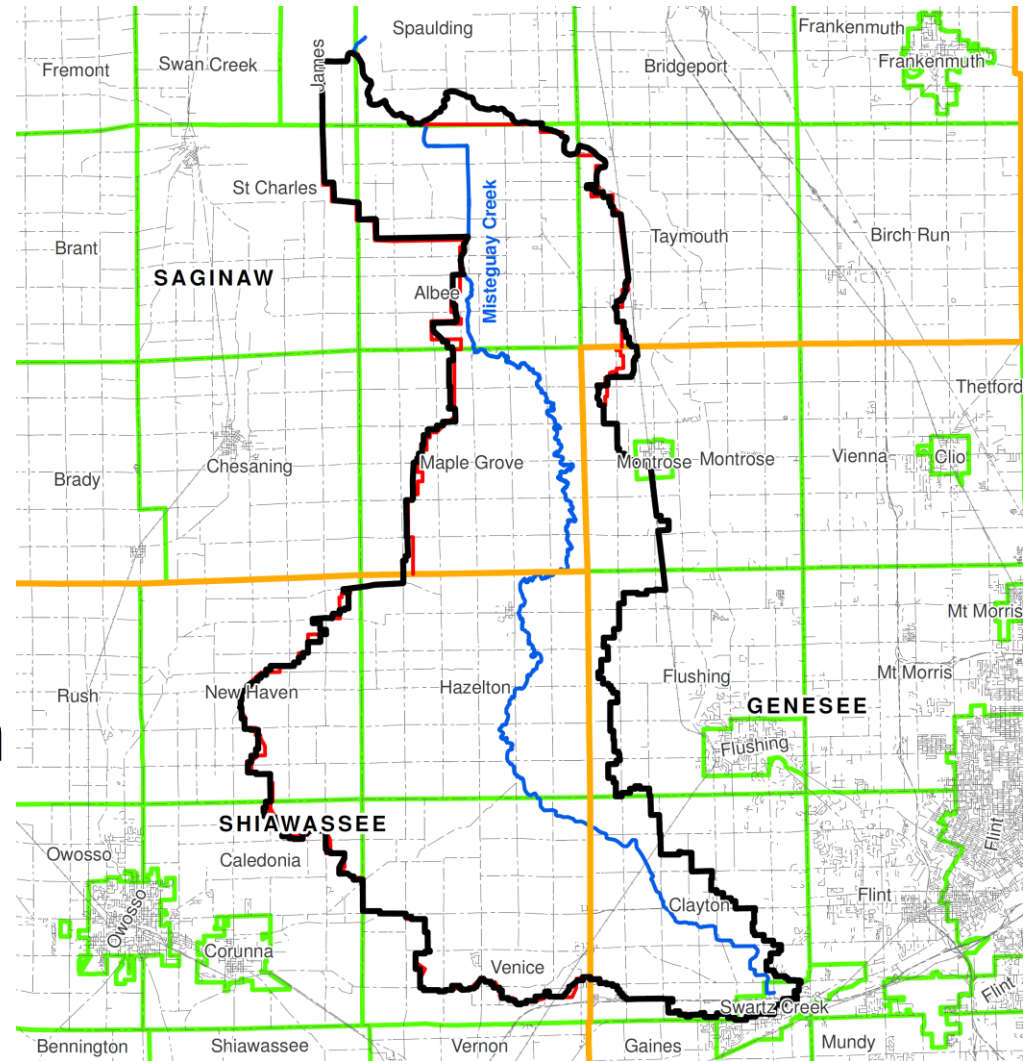
Drainage Area

- What is a drainage area?
 - Lands that contribute storm water to the drain, either directly or indirectly
- Drainage area consists of approximately 115,260 acres



Drainage Area Updated to Reflect Current Conditions

- Updated based on review of
 - Drainage maps
 - Contour data
 - Aerial data
 - Property data
 - Field verification of some areas



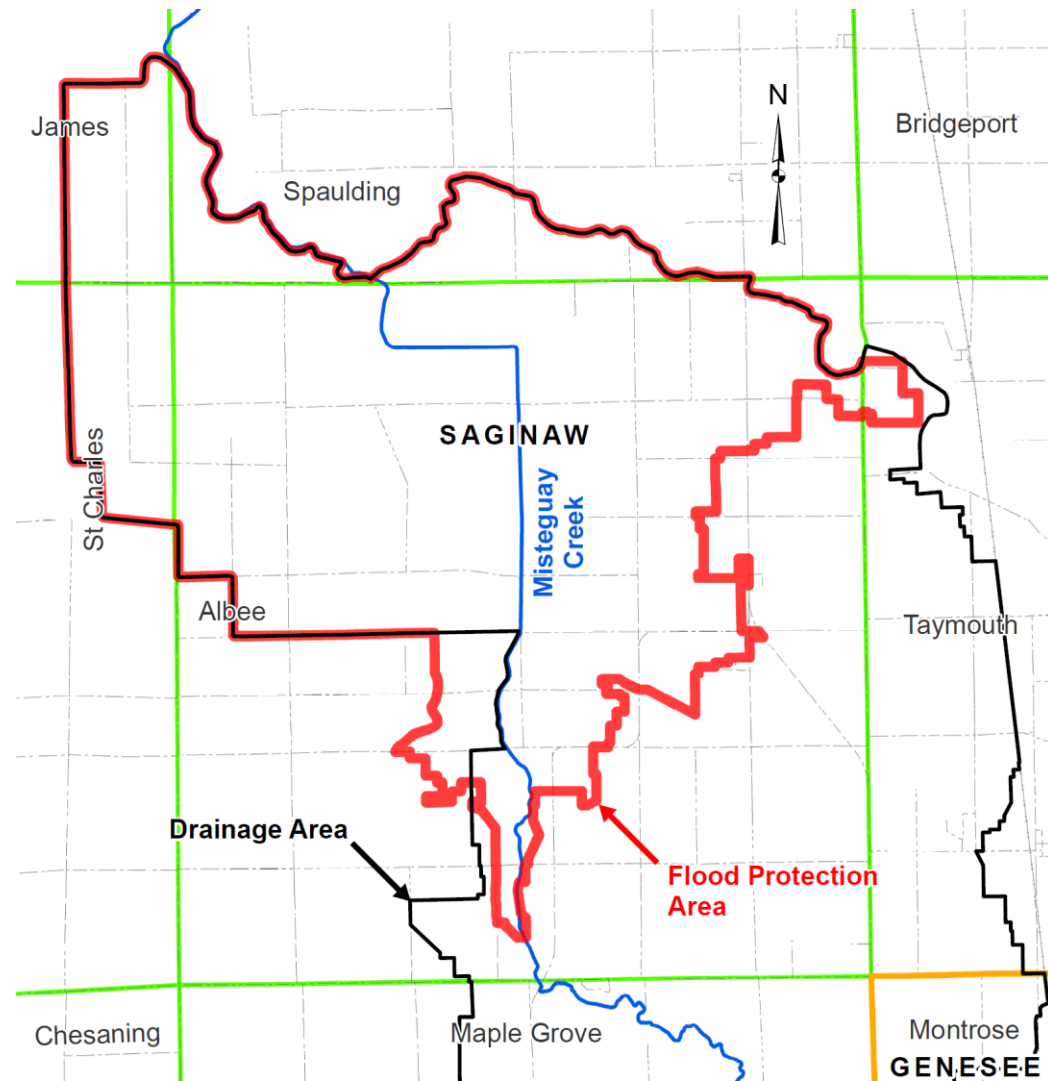
Flood Protection Area

- What is the flood protection area?
 - Lands protected from flooding by dikes
- Flood protection area consists of approximately 15,450 acres



Flood Protection Area Delineated

- Computer model used to determine flood elevation
- Protected area delineated based on elevation
- Area also bound by dikes along Miller Drain and Flint River



Add Lands to the District

- Reasons a land is recommended to be added include
 - Land currently drains towards Misteguay but was not previously in District
 - Land currently receives flood protection but was not previously in District



Lands Added, Genesee County

Township	Parcel ID	Section
Flushing	25-08-31-200-005	31
Montrose	25-13-05-100-001	5
Montrose	25-13-05-100-002	5
Montrose	25-13-05-100-003	5
Montrose	25-13-05-100-004	5
Montrose	25-13-05-100-007	5
Montrose	25-13-05-100-008	5
Montrose	25-13-05-100-010	5
Montrose	25-13-05-100-011	5
Montrose	25-13-05-100-012	5
Montrose	25-13-05-100-013	5
Montrose	25-13-05-100-015	5
Montrose	25-13-05-100-016	5
Montrose	25-13-05-100-017	5
Montrose	25-13-05-100-018	5
Montrose	25-13-05-100-019	5
Montrose	25-13-05-100-020	5
Montrose	25-13-05-100-023	5
Montrose	25-13-05-100-028	5
Montrose	25-13-05-100-029	5
Montrose	25-13-05-100-030	5
Montrose	25-13-05-100-031	5
Montrose	25-13-05-100-032	5
Montrose	25-13-05-100-033	5

Township	Parcel ID	Section
Montrose	25-13-05-100-034	5
Montrose	25-13-05-100-035	5
Montrose	25-13-05-100-036	5
Montrose	25-13-05-100-037	5
Montrose	25-13-05-200-001	5
Montrose	25-13-05-200-002	5
Montrose	25-13-05-200-003	5
Montrose	25-13-05-200-004	5
Montrose	25-13-05-300-001	5
Montrose	25-13-05-300-002	5
Montrose	25-13-05-300-004	5
Montrose	25-13-05-300-018	5
Montrose	25-13-05-300-021	5
Montrose	25-13-05-300-022	5
Montrose	25-13-06-400-017	6
Montrose	25-13-06-400-020	6
Montrose	25-13-06-400-024	6
Montrose	25-13-07-400-002	7
Montrose	25-13-07-400-005	7
Montrose	25-13-17-300-063	17
Montrose	25-13-20-400-001	20
Montrose	25-13-28-100-001	28
Montrose	25-13-28-100-003	28
Montrose	25-13-28-100-027	28

Township	Parcel ID	Section
Montrose	25-13-28-100-029	28
Montrose	25-13-28-100-030	28
Montrose	25-13-29-200-003	29
Montrose	25-13-29-200-004	29
Montrose	25-13-29-200-005	29
Montrose	25-13-29-200-008	29
Montrose	25-13-29-200-009	29
Montrose	25-13-29-200-014	29
Montrose	25-13-29-200-015	29



Lands Added, Shiawassee Co.

Township	Parcel ID	Section
Caledonia	007-03-200-004-017	3
New Haven	003-01-200-002-00	1
New Haven	003-01-200-003-00	1
New Haven	003-01-200-004-00	1
New Haven	003-16-400-003-00	16
New Haven	003-16-400-003-01	16
New Haven	003-16-400-004-00	16
New Haven	003-16-400-005-00	16
New Haven	003-16-400-006-00	16
New Haven	003-28-200-001-00	28
New Haven	003-33-200-001-01	33
Venice	008-18-300-013-00	18
Venice	008-29-300-002-00	29
Venice	008-33-100-003-01	33
Venice	008-33-200-001-01	33
Venice	008-33-200-016-02	33
Venice	008-33-200-016-03	33
Venice	008-34-100-002-01	34
Venice	008-34-100-009-00	34
Venice	008-34-100-010-00	34



Lands Added, Saginaw County

Township	Parcel ID	Section
Albee	04-10-4-01-2003-000	1
Albee	04-10-4-20-4004-000	20
Albee	04-10-4-21-2001-000	21
Albee	04-10-4-21-2002-000	21
Albee	04-10-4-21-3001-000	21
Albee	04-10-4-21-3002-000	21
Albee	04-10-4-21-3003-000	21
Albee	04-10-4-21-3005-000	21
Albee	04-10-4-21-3006-000	21
Albee	04-10-4-21-4002-000	21
Albee	04-10-4-21-4003-000	21
Albee	04-10-4-28-1002-000	28
Albee	04-10-4-28-2001-000	28
Albee	04-10-4-28-2001-002	28
Albee	04-10-4-28-2002-000	28
Albee	04-10-4-28-2002-001	28
Albee	04-10-4-28-2002-003	28
Albee	04-10-4-28-2002-004	28
Albee	04-10-4-28-2003-000	28
Albee	04-10-4-33-3001-001	33
Albee	04-10-4-33-4004-000	33
Albee	04-10-4-33-4005-000	33
Albee	04-10-4-33-4005-001	33
Albee	04-10-4-33-4005-002	33

Township	Parcel ID	Section
Albee	04-10-4-33-4005-003	33
Albee	04-10-4-33-4005-004	33
Albee	04-10-4-33-4010-000	33
Albee	04-10-4-33-4011-000	33
Maple Grove	20-09-4-04-2002-000	4
Maple Grove	20-09-4-04-2004-000	4
Maple Grove	20-09-4-04-2004-001	4
Maple Grove	20-09-4-04-3001-000	4
Maple Grove	20-09-4-04-3004-000	4
Maple Grove	20-09-4-04-3006-000	4
Maple Grove	20-09-4-04-3008-000	4
Maple Grove	20-09-4-09-2001-000	9
Maple Grove	20-09-4-16-2002-003	16
Maple Grove	20-09-4-17-1001-003	17
Maple Grove	20-09-4-17-1001-013	17
Maple Grove	20-09-4-17-3001-000	17
Spaulding	25-11-4-33-1002-000	33
Spaulding	25-11-4-33-1003-000	33
Spaulding	25-11-4-33-3001-000	33
Spaulding	25-11-4-33-4001-000	33
Spaulding	25-11-4-34-2003-000	34
Spaulding	25-11-4-34-2003-001	34
Spaulding	25-11-4-34-2003-002	34
Spaulding	25-11-4-34-2005-000	34

Township	Parcel ID	Section
Spaulding	25-11-4-34-3001-000	34
Spaulding	25-11-4-34-3002-000	34
Spaulding	25-11-4-34-3003-000	34
Spaulding	25-11-4-34-4001-000	34
Spaulding	25-11-4-34-4001-001	34
Spaulding	25-11-4-34-4002-000	34
Spaulding	25-11-4-34-4003-000	34
Spaulding	25-11-4-35-3002-000	35
Spaulding	25-11-4-35-3004-000	35
Spaulding	25-11-4-35-3004-001	35
Spaulding	25-11-4-35-4004-000	35
Spaulding	25-11-4-36-3005-000	36
Spaulding	25-11-4-36-3006-000	36
Taymouth	27-10-5-06-3002-001	6
Taymouth	27-10-5-06-3002-002	6
Taymouth	27-10-5-07-4002-000	7
Taymouth	27-10-5-07-4002-001	7
Taymouth	27-10-5-29-3013-000	29
Taymouth	27-10-5-32-3001-000	32
Taymouth	27-10-5-32-3001-001	32
Taymouth	27-10-5-32-3003-000	32
Taymouth	27-10-5-32-3003-001	32
Taymouth	27-10-5-32-3005-003	32
Taymouth	27-10-5-32-3006-001	32



Assessment District Summary

■ Drainage Area	115,260 acres
■ Genesee County	21,730 ac.
■ Saginaw County	41,450 ac.
■ Shiawassee County	52,080 ac.
■ Flood Protection Area	15,450 acres
■ Genesee County	0 ac.
■ Saginaw County	15,450 ac.
■ Shiawassee County	0 ac.



Public Testimony

- Fill out speaker cards
- State name and relation to proposed project
- Limit comment to 3 minutes
- Be specific; focus on addition/deletion of lands
- Leave copy of materials, if any, with Board



Board Deliberation and Decision on Addition of Lands

