

Overview

- Two settlements for Natural Resource Damages (2020 Dow and 1998 GM)
- Progress on projects since October CAG
- New projects coming from request for preproposals – plan out for review until March 27
- Potential site visits in 2023







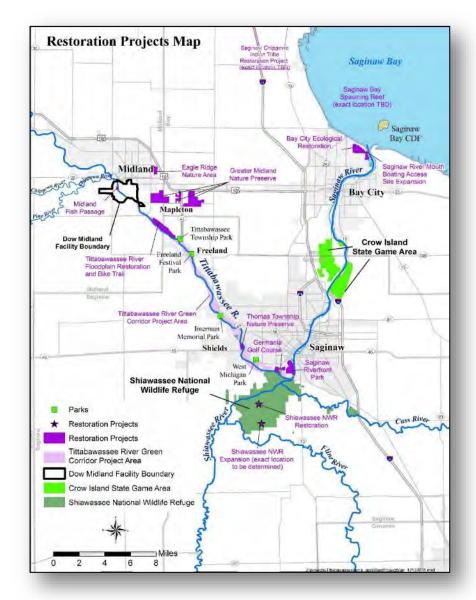




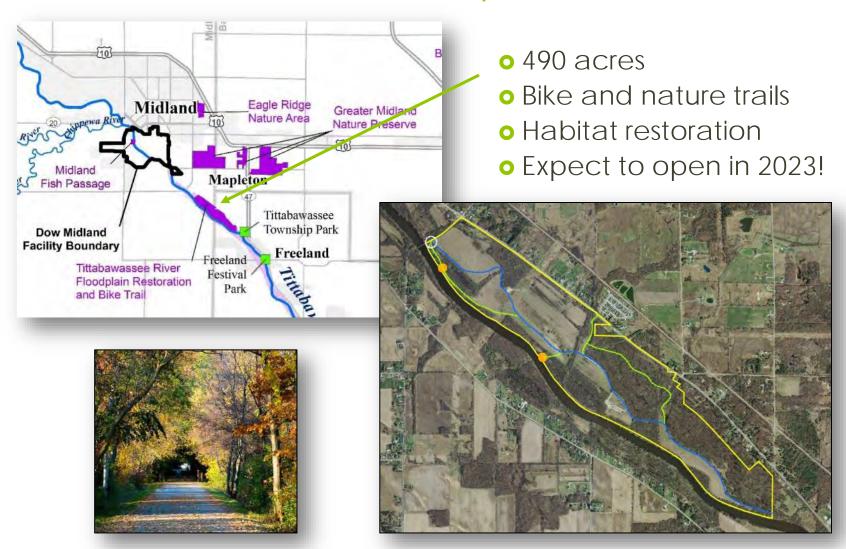


Projects in Consent Decree

- 13 Restoration Projects
 - 8 that Dow will implement
 - 5 that Trustees and partners will implement
- 2 Additional Projects
 - Agreement between
 Dow and the State
 - BaySail and Lighthouse by Bay City

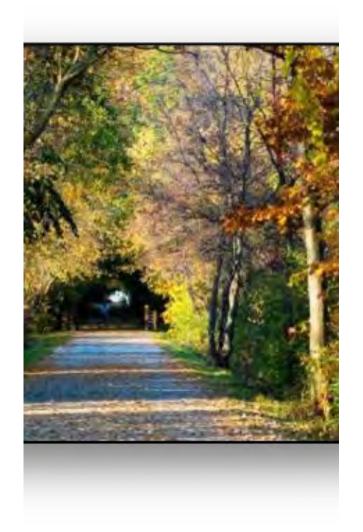


Tittabawassee River Floodplain Restoration



TITTABAWASSEE FLOODPLAIN PRESERVE





Bike Trail Construction

TITTABAWASSEE RIVER FLOODPLAIN RESTORATION & BIKE TRAIL PROJECT

FEBRUARY 14, 2023

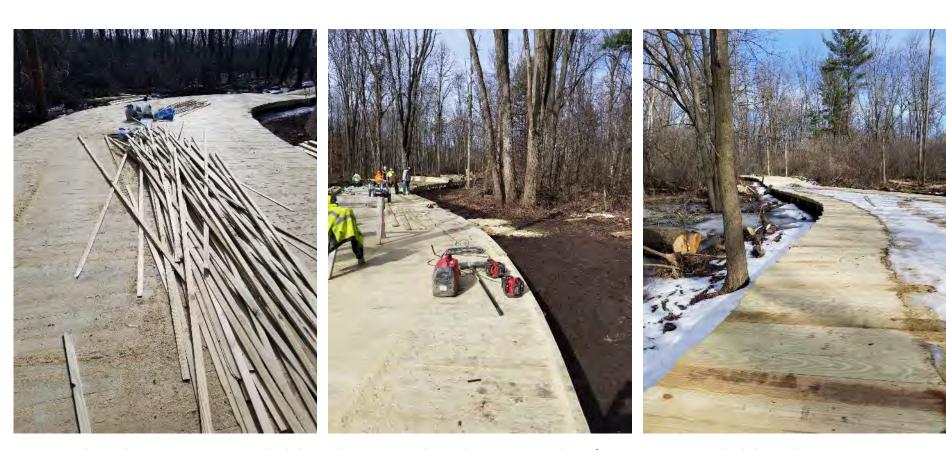
Photos by Lisa Williams, USFWS



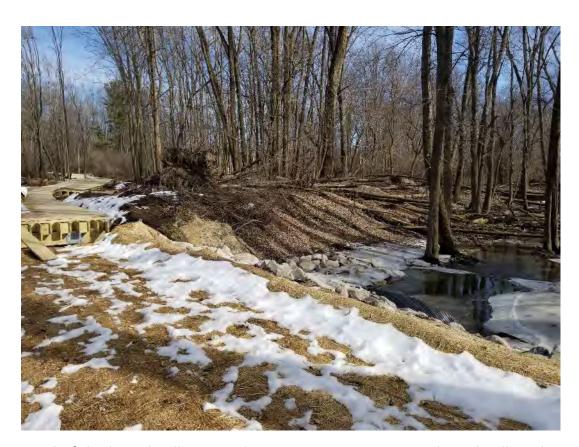




Setting deep supports and making the curves: overlapping and bending support joists



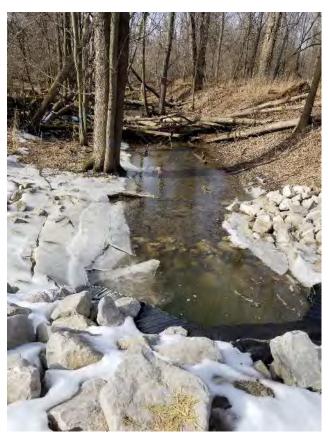
Making the curves: ripping deck boards on an angle and trimming sides after screwing on deck boards





End of the boardwalk near culvert on Lucas Drain. Note boardwalk in distance both curving and ascending.



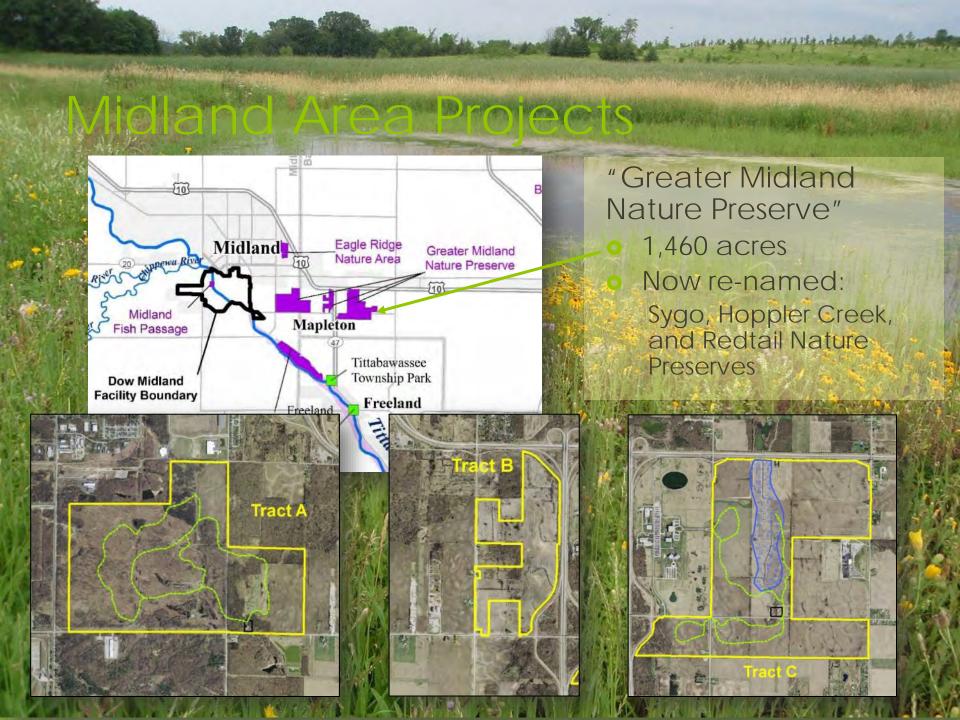


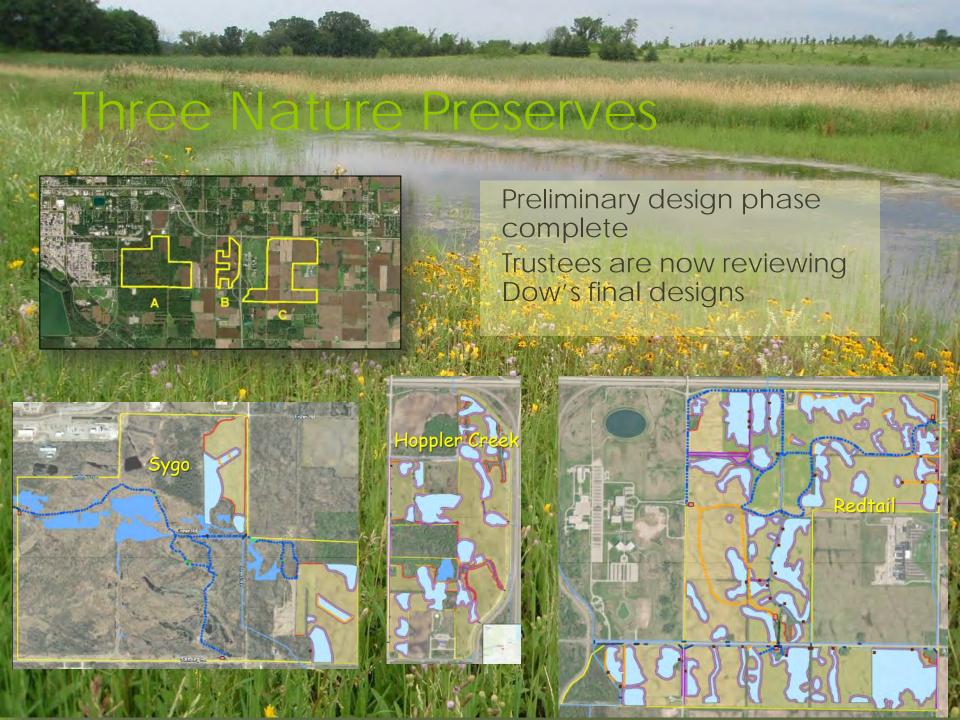
Culvert on Lucas Drain with downstream grade control riffle. (Mark Goss from Spicer for scale!)



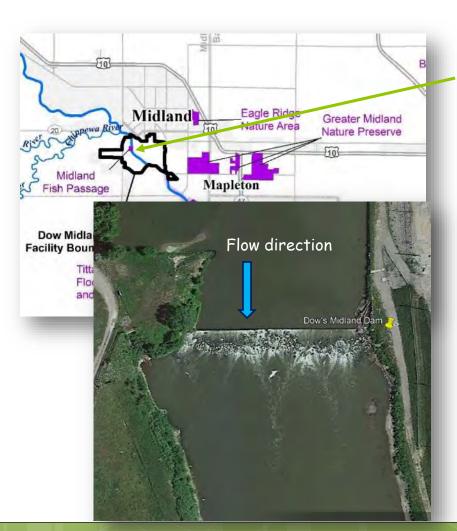


Erosion control straw mats with loose weave, natural fiber strands and wooden stakes.



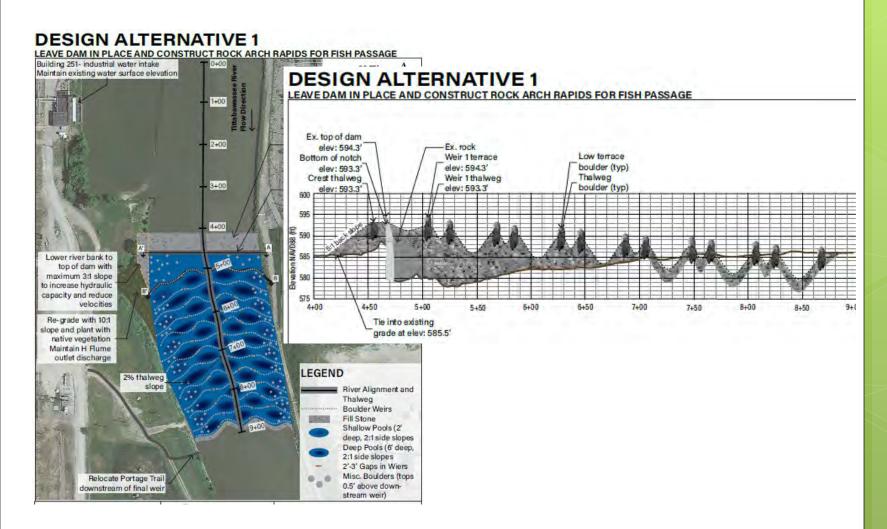


Midland Area Projects



- Midland Fish Passage at Dow Dam
- Many alternatives considered
- Conceptual designs for 3 alternatives are now being analyzed by Dow and Trustees

Midland Fish Passage Concepts



Midland Fish Passage Concepts

DESIGN ALTERNATIVE 3 LEAVE DAM IN PLACE, CONSTRUCT ROCK ARCH RAPIDS, AND DOWNSTREAM RIFFLES Building 251- industrial water intake DESIGN ALTERNATIVE 3 Maintain existing water surface elevation LEAVE DAM IN PLACE, CONSTRUCT ROCK ARCH RAPIDS, AND DOWNSTREAM RIFFLES WEIR CLUSTER AT DAM 595 Add fill stone to create from crest down to exis Leave dam in place Notch 17' wide top widt Lower river bank to top water depth under low of dam with maximum 580 3:1 slope to increase 2% thalweg slope hydraulic capacity and 4+50 6+50 reduce velocities MIDDLE WEIR CLUSTER Re-grade with 10:1 slope Plant with native vegetation 595 Maintain Portage Trail-Elevation NAVD88 (ft) 690 NOTES: Concept developed by Dr. Luther Aadland Rendering developed by GEI Consultants of Michigan, P.C. 15+00 15+50 16+00 FINAL DOWNSTREAM WEIR CLUSTER LEGEND 595 River Alignment and g 80 585 \$ 585 Thalweg **Boulder Weirs** Fill Stone Shallow Pools (2' 580 deep, 2:1 side slopes Deep Pools (6' deep, USGS 04156000 2:1 side slopes 20+50 22 + 5023+00 20+00 21+00 22+00 Tittabawassee River at 2'-3' Gaps in Wiers Midland, MI Misc. Boulders (tops 0.5' above down-

stream weir)

Bay City Area Projects



Bay City Area Projects

Existing site

Nature Trails

Public Access Parking



Bay Sail

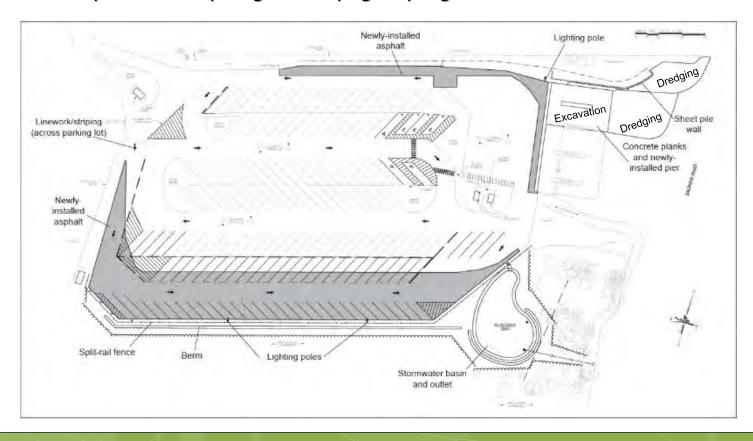
Light House

- Saginaw River Mouth Boating Access Site Expansion
 - 50 new parking spaces
 - 3 new launch lanes, bringing total to 8



Saginaw River Mouth Boating Access Site Expansion

- ·Completed in fall of 2022 except for final layer of asphalt
- ·Expect several day closure for paving and striping in spring



Future Projects: Public Input

- Trustees issued a
 Request for Pre Proposals in the fall of
 2021 for up to \$5.75M
 from both cases
- 23 submittals received by deadline
- Trustees have screened and ranked submittals based on 17 criteria



Future Projects: Public Input

- Trustees conducted some site visits as part of project reviews
- Draft Supplemental Restoration Plan (SRP)
 - Proposes 10 projects for public comment
 - https://www.fws.gov/project/tittabawasseeriver-natural-resource-damage-assessmentandrestoration#Restoration%20Plan%20and%20P rojects
 - o Comments due 3/27/23
- Final SRP to select projects



Saginay Chippewa Indian Tribe Restoration Project Saginaw Bay (exact location TBD) Spawning Reef (exact location TBD) Saginaw Bay CDF Bay City Ecological Restoration Eagle Ridge Midland **Boating Access** Nature Preserve Site Expansion Bay City & Mapleton Tittabawassee Township Park Dow Midland Crow Island **Facility Boundary** Freeland State Game Area Tittabawassee River Festival Floodplain Restoration and Bike Trail Tittabawassee River Green Corndor Project Area Nature Preserve Memorial Park Saginaw **Shiawassee National** Proposed New Restoration Project hiawassee NWR Cass River Restoration Projects Restoration Projects Tittabawassee River Green Shiawassee NWR Expansion (exact location Corridor Project Area to be determined) Dow Midland Facility Boundary Crow Island State Game Area Shiawassee National Wildlife Refuge

Proposed Projects

- South Riverfront Restoration
 Project (habitat components)
- Chippewa Nature Center -Restoration Capacity
- Bailey Bridge Shoreline Access (if feasible)
- Floodplain Protection and Restoration (310 acres)
- Thomas Township Restoration Expansion
- Saginaw River Headwaters Rec Area Shoreline Restoration and ADA Access
- Crow Island SGA Expansion (360 acres)
- Bay City State Park/CISMA Restoration
- Saginaw Bay Coastal Wildlands
- Saginaw Bay Sturgeon

Ideas for 2023 Site Visits

- Eagle Ridge Nature Preserve
 - Midland
 - Open now
- Tittabawassee Floodplain Preserve and Bike Trail
 - Between Midland and Freeland
 - Under construction
- Saginaw River Headwaters Rec Area
 - City of Saginaw
 - Not open to public yet
 - Need to coordinate with Saginaw County Parks

Eagle Ridge Nature Preserve

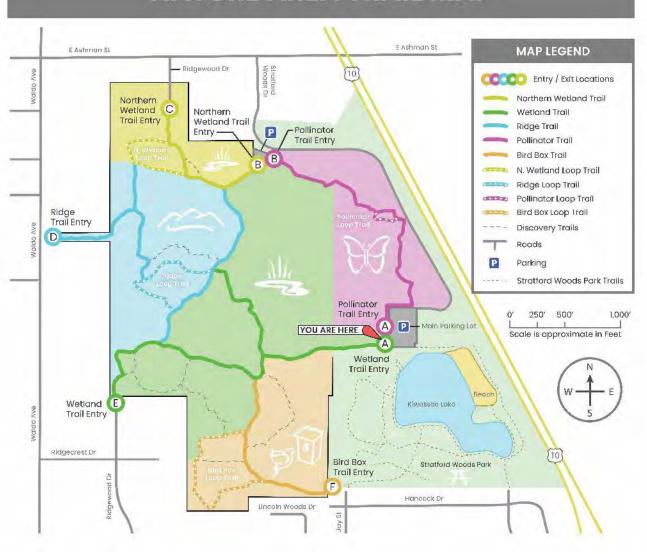


- Trails, overlooks, parking
- Wetland restoration
- Non-native species control

- o 140 acres
- Next to Stratford Park



NATURE AREA TRAIL MAP



Eagle Ridge

Pollinator Area





Eagle Ridge



Saginaw River Headwaters





Photo by Brian Lechel

Beautiful 3 minute video online (search Saginaw Headwaters Rec Area)

Summary

- The goal of NRDAR is to restore and compensate for losses over time
- Restoration is on schedule projects opening in 2022 and 2023 as work continues on others
- Supplemental Restoration Plan describing additional projects
 - Public comment due March 27
 - https://www.fws.gov/project/tittabawassee-rivernatural-resource-damage-assessment-andrestoration#Restoration%20Plan%20and%20Projects

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https://www.fws.gov/project/tittabawassee-river-natural-resource-damage-assessment-and-restoration

https://www.fws.gov/project/saginaw-river-and-bay-natural-resource-damage-assessment-and-restoration