

Cascade Township Thornapple River Special Assessment District Ten Year Strategic Plan and Roadmap – 2025 through 2035

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Introduction

The Cascade Township Thornapple River Special Assessment District (TRSAD) is committed to preserving the health and usability of the Thornapple River. This strategic plan outlines the goals and actions for addressing the three primary areas of concern identified during the formation of the assessment district: Aquatic Vegetation Control, Safety and Navigation, and Sediment Control. These efforts are designed to ensure that the river remains a clean, safe, and navigable waterway for the duration of the TRSAD and for future generations of Cascade Township residents and the public at large.

Background

The TRSAD was formally created by the Cascade Township Board of Trustees via resolution 20-2020 on September 9, 2020. The description of public improvements to the Covered Portion of the Thornapple River is stated as follows:

“Control and partial eradication of certain aquatic weeds and river management”

with further language of:

“Control and partial eradication of aquatic plants and weeds with the Covered Portion of the Thornapple River by means of chemical and/or biological means and/or weed harvesting and also river management (including but not limited to, river studies, removal of blockages, dredging, sedimentation control and similar undertakings).”

The Covered Portion is defined as being located between the Cascade Dam (downstream) to 60th Street (upstream).

The duration of the TRSAD was initially set for 15 years, expiring in 2035, with extension options at the discretion of the Board of Trustees.

Accomplishments from 2021 through 2024

- Three-year agreement with PLM for aquatic weed control, eradication and harvesting (survey, treatment and harvesting each year) - Completed
 - Water quality testing by PLM during three-year agreement - Completed
 - Two-phase contract with Viking Marine for depth survey and hazard/navigational marking
 - Phase 1: Depth survey and marker design/permitting – Completed
 - Phase 2: Hazard/navigational marker installation – Contract completed, Installation work to be completed no later than Spring 2025
 - One-time contract with Larry’s Tree Service for floating debris relocation using their floating crane – Complete
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Planning Intervals

Yearly – Prioritize projects, identify funding requirements, seek Board of Trustees approval (where required) and complete activities.

After first 2 to 3 years – Evaluate previous three years of accomplishments and make minor adjustments.

After first 5 years – Evaluate entire plan and adjust for the second five-year period.

Areas of Focus

- 1) Aquatic vegetation control
 - 2) Safety and navigation
 - 3) Sediment control and mitigation
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Area of Focus 1 - Aquatic Vegetation Control

Goal:

To maintain balanced aquatic vegetation growth, preventing overgrowth while ensuring a healthy ecosystem void of invasive species

Objectives:

- Control invasive plant species that threaten local biodiversity and negatively impact river health
- Promote healthy aquatic plant populations that support local fish and wildlife
- Minimize the negative impact of overgrown vegetation on water quality and recreational use

Strategies:

- Conduct annual surveys of aquatic vegetation to monitor species and growth patterns
- Implement mechanical harvesting or aquatic plant management techniques (e.g., herbicides, biological control) to manage invasive species and overgrowth with a focus on natural methods over chemical treatments
 - All products used will be approved by the Michigan Department of Environmental Quality (MDEQ)
- Educate residents and stakeholders on the importance of controlling aquatic vegetation for ecosystem health. This includes shoreline issues (e.g. phosphorous, septic tanks, et al)
- Partner with other portions of the river, which is anticipated to result in significant cost reductions in subsequent years

Actions:

- Continue the aquatic vegetation monitoring program
- Renew contract with PLM for a second 3-year period (2025-2027) - Complete
 - Monitoring
 - Treatment
 - Harvesting
 - Water testing

- Long-term (5+ years): Assess the effectiveness of ongoing vegetation management efforts and adjust strategies as needed

Performance Measures:

- Reduction in the presence of invasive plant species (amount of acreage treated and quantity of weeds harvested will be measured annually by the contractor)
 - Resident and stakeholder satisfaction with river accessibility for recreational use
 - Improvement in water clarity and quality, monitored by water sampling
 - Survey SAD residents to obtain their view on if the project is meeting its intended purpose.
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Area of Focus 2 - Safety and Navigation

Goal:

To improve safety for all river users and maintain clear navigability for all recreation activities

Objectives:

- Minimize navigational hazards such as submerged and surface debris, overgrown vegetation, and low water levels
- Mark safe navigation routes in more challenging areas
- Promote safe boating practices and water safety awareness

Strategies:

- Regularly assess the river for obstacles, including floating trees, trash, sediment build-up, and other debris that may impede navigation
- Mark dangerous areas or obstacles as changes may happen over time, especially after heavy storm events
- Install safety signage and promote river safety programs for residents and visitors

Actions:

- Complete first round of buoy installations by contractor (Viking Marine)
 - Monitor installation for damage by ice or other means and repair as needed

- Relocate hazardous tree in north side of water ski course just south of I96 overpass (Larry's Tree Service)
- Relocate other hazardous debris as needed, being mindful that an entire day of work for the contractor is the most efficient use of funds (Larry's Tree Service)
- Investigate signage / reflective markers for very low CSX train bridge.
- Investigate caution signage and/or buoys for I96 overpass columns due to sharp curve in river.
- Long-term (5+ years):
 - Intake debris reports directly to the township and inform the TRSAD committee
 - Monitor water depth and evaluate changes
 - Ongoing monitoring and improvement of safety measures, based on community feedback and incident reports

Performance Measures:

- Collect feedback from local emergency services and/or marine patrols (Kenty County, MIDNR, Cascade Township Fire Department)
- Survey SAD residents to obtain their view on if the project is meeting its intended purpose and if there are other hazards they recommend the SAD consider.
- Conduct a periodic debris survey of the SAD portion of the river

Area of Focus 3 - Sediment Control and Mitigation

Goal:

To manage sedimentation in the river, reducing the impact on water quality, navigation, and aquatic habitats

Objectives:

- Prevent excessive sedimentation that could lead to reduced water depth and poorer water quality
- Mitigate the impact of stormwater runoff and erosion on river sediment levels
- Promote sustainable land management practices to minimize sediment input from surrounding areas, including natural shoreline growth where appropriate

- Determine if river depth near the dam and along the bayous is detrimental to the overall habitat
 - In 1983, a section of the river near the dam was 28 feet deep. By 1994, it was 24 feet, and recent tests show it has decreased further to around 14 feet.

Strategies:

- Monitor sedimentation levels and river depth at regular intervals, focusing on key areas impacted by erosion and runoff
- Implement and maintain sediment traps (e.g. settling basins, plunge pools, Gabion weirs) on creeks or other inflows
- Implement erosion control measures along riverbanks and around bridge structures such as plantings or buffer zones, to reduce sediment flow
- Dredge specific areas affected by sedimentation in the past prior to implementing new control measures
- Work with local property owners to encourage sediment management practices, such as reducing fertilizer use, managing runoff, and installing sediment traps or filters
- Collaborate with government/regulators to improve stormwater management and reduce sedimentation from construction and urbanization

Actions:

- Retain a sediment consultant (e.g. engineering / environment consultant)
 - Issue RFP for a qualified consultant
 - Conduct a baseline survey, assessment, mapping, analysis, and recommendation gathering exercise
 - Prioritize recommendations from the consultant
 - Apply for matching grants from local, state, or federal authorities
 - Collaborate with property owners / official groups of property owners (e.g. HOAs)
- Reopen permit process that was previously started to dredge the CSX train bridge bypass that has filled in with sediment and trees over the last several decades
 - Potentially use the same consultant (above) to assist with permitting

- Hire contractor to complete work (pending permitting)
- Long-term (5+ years): Evaluate sedimentation trends and refine control strategies based on monitoring results

Performance Measures:

- Reduction in sedimentation rates, monitored annually through water sampling and river depth measurements
 - Improvement in water quality, as measured by turbidity and clarity
 - Positive community engagement in best management practices to control runoff
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Five Year Project Timeline

2025

- Complete Viking Marine Phase 2 of the Safety & Navigational Marking Project
- Relocate hazardous tree in water ski course
- Renew PLM contract for 3 years - Complete
- Issue and award sediment consultant RFP
- Initiate sediment study
- Train bridge reflective markers/signage
- I96 bridge caution markers/signage
- Relocate hazardous debris as needed

2026

- Complete sediment study
- Investigate and apply for matching sediment grant(s)
- Initiate CSX train bridge bypass permit
- Obtain CSX train bridge permit
- Issue and award bid for CSX train bridge bypass dredging and tree cleanup
- Relocate hazardous debris as needed

2027

- Review PLM performance over past three seasons
- Receive at least one sediment grant and initiate related sediment work
- Relocate hazardous debris as needed

2028

- Potentially renew PLM contract
- Sediment work
- Relocate hazardous debris as needed

2029

- Sediment work
- Relocate hazardous debris as needed
- Revisit plans for the next five years

Conclusion

The Cascade Township Thornapple River Special Assessment District is dedicated to enhancing the quality and safety of the Thornapple River and to preservation of property values through thoughtful, proactive management of aquatic vegetation, safety, navigation, and sediment control and mitigation. By following this strategic plan, the TRSAD aims to foster a healthy, sustainable river environment for all who live by and enjoy its waters. Collaboration among residents, local government, regulators, contractors, and environmental experts is essential to achieving these goals.