MIDDLE GRAND RIVER

WATER TRAIL DEVELOPMENT PLAN

The Middle Grand River Water Trail Development Plan was developed by the Middle Grand River Organization of Watersheds (MGROW) and the Tri-County Regional Planning Commission (TCRPC).

Funding for the plan development was supported by TCRPC's Partnership Planning Grant from the United States Economic Development Administration.

MGROW
MIDDLE GRAND RIVER
ORGANIZATION OF WATERSHEDS

TRI-COUNTY
regional planning commission

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Introduction

INTRODUCTION

PLAN PURPOSE

The Middle Grand River Water Trail Development Plan was created to guide the development and management of a safe, sustainable water trail along the Middle Grand River with possible extensions into the Red Cedar, Looking Glass, and Maple Rivers. This Plan inventories current trail assets along the Middle Grand River (Eaton Rapids, MI and Lyons, MI), identifies opportunities to improve public access and user experience, and provides guidance for navigating the physical and institutional challenges that may be encountered during water trail development or use. In cooperation with similar water trail efforts in the Upper and Lower Grand River, subsequent efforts may seek state and/or national water trail designation for the entire Grand River.

What is a Water Trail?

Water trails, sometimes referred to as "blue-ways," are the aquatic equivalent of a hiking trail or "greenway."

GOALS AND OBJECTIVES

The goal of the Middle Grand River Water Trail Development Plan is to outline the activities, processes and framework for establishing a water trail along the Middle Grand River. In recent years, the Middle Grand River has seen new access sites and amenities as well as increased promotion and use. This plan, and the resulting water trail, provide an opportunity to integrate these existing efforts to improve access, coordinate emergency responder activities, and enhance the visibility and marketability of the region's primary natural resource. This plan was developed with the following objectives:

- Take stock of currently available water trail assets (public access, amenities) along the Middle Grand River corridor.
- Classify existing river access sites as Class A, B, and C to reflect the level of amenities available at each site.
- Determine distance and the average amount of time needed to paddle between public access sites.
- Identify stakeholders' ongoing or future plans for improving river access or promotion.
- Generate broad community and stakeholder support for the development of a Middle Grand River water trail.
- Identify institutional or physical challenges/threats to water trail development or use (regulations, logjams, dams, etc.)
- Identify opportunities for enhancing the water trail experience (additional access/amenities, removing obstructions, etc.)
- Guide the development and sustainable management of a water trail.
- Coordinate amongst safety agencies and encourage a collaborative approach to river emergency response.
- Develop a sustainable marketing plan to increase the use of and safety on the Middle Grand River.
- Create standardized wayfinding and educational signage to be used on the trail.
- Self-designate the Middle Grand River as a water trail and seek state and national program designations.
- Expand the water trail to include the entire Grand River in cooperation with Upper and Lower Grand River organizations.
- Extend the water trail into Middle Grand River tributaries in subsequent efforts.

One overarching goal and benefit of developing and designating the Grand River as a water trail is the increase our Grand River communities will see in their competitivity for local, state, and federal grant opportunities. By tying existing access sites into a regional effort, stakeholders can leverage their affiliation with a broader trails network to strengthen requests for the funding required to make the desired improvements identified in this plan.

The resulting efforts of this Plan will seek to improve public access to the Middle Grand River, complement ongoing conservation and environmental initiatives along the river, leverage the river for economic development, raise awareness of the unique and valuable natural resources within the river corridor, and provide for a safe, environmentally sound and responsible recreational water trail for a variety of users.

A prior edition of this document was submitted to the Michigan Department of Natural Resources (MDNR) as part of the water trail designation application by the Middle Grand River Organization of Watersheds (MGROW). In December 2018, MDNR announced the selection of the Middle Grand River as one of the first eight officially state-designated water trails in Michigan. This document has been updated to reflect the current designation status. Though the Middle Grand River Water Trail (MGRWT) is now state-designated, the ultimate goal remains: designating the entire Grand River as one state and/or national water trail. The goals, assumptions, and planning recommendations outlined in this plan still apply to this broader effort.

Economic Impact of Water Trails

The estimated annual impact of the Huron River Water Trail in Washtenaw County is $53.5 million.

ASSUMPTIONS

Throughout the planning process, community stakeholders, public officials, property owners, and citizens throughout the study area worked to develop and refine a series of assumptions for the water trail. These assumptions summarize the specific goals and expectations for the water trail and ultimately established the following benchmarks for success:

- The water trail will balance safe recreation with ongoing conservation and restoration efforts.
- The river will support paddling, fishing, and boating.
- The water trail will complement and be integrated with surrounding land-based trails.
- The public will have convenient and safe points of access to the river.
- The water trail will help leverage economic development.
- The river will continue to be managed and maintained through inter-jurisdictional public, private, and non-profit partnerships.
- Paddlers will respect private property along the water trail.
- The Middle Grand River Water Trail will be an integral part of a larger network of water trails on the Grand River that will combine to make the longest inland water trail in Michigan.

WHAT IS A WATER TRAIL?

A water trail is a defined route on a navigable waterway such as a river, lake, or canal that is promoted to foster educational and recreational experiences. Water trails provide safe access to, and information about these waterways, while also providing connections to cultural, historical, natural, and other attractions. Most water trails are intended for non-motorized vehicles such as kayaks, canoes, and other human- or muscle-powered craft. Motorized and wind-powered activities are sometimes included. Water trails contribute positively to local communities by providing economic stimulus and by protecting resources that are important to the quality of life.

In urban areas, water trails may feature well-developed access and launch sites; are typically located near significant historical, environmental, or cultural points of interest; and are often close to amenities such as restaurants, shops, and hotels. In wilderness areas, water trails may feature very few amenities outside of an occasional primitive campground.

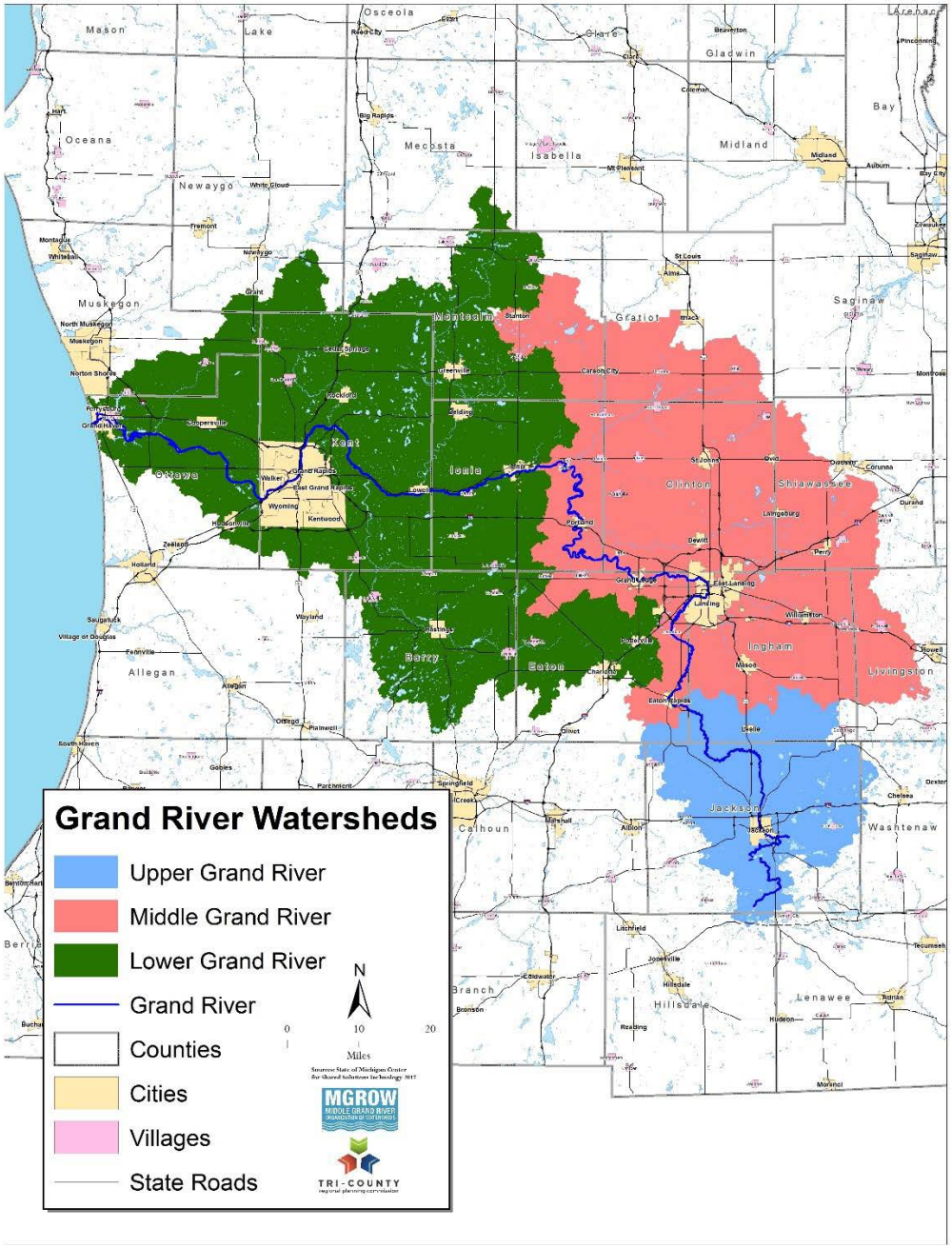
WATER TRAIL USERS

Both residents and non-residents use water trails. Some users intend to access the trail, embark on their activity, and return to the same access point upon conclusion. Others intend to embark on a trip and conclude their experience within the same day at a different end location, known as “day-trippers.” Other users plan trips over multiple days and are known as “through-paddlers.” Based on skill level, proximity to the water trail, and other factors, it is important to note that the frequency of use will vary from individual to individual. Some trail users will be “regulars” while others may only visit the trail on an annual or infrequent basis.

STUDY AREA

The Middle Grand River section is approximately 87 miles in stream length and includes the confluences of the Red Cedar, Looking Glass, and Maple Rivers. It joins together the Upper Grand River and the Lower Grand River. Together, the entire Grand River is Michigan’s longest river and second largest watershed.

The Middle Grand River begins in Eaton Rapids and flows north, crossing back and forth across the Ingham and Eaton county line, it then flows through downtown and “Old Town” Lansing. Just north of Old Town Lansing, the Grand River begins to flow west, crossing the Clinton and Eaton county line into Grand Ledge and continuing west into the City of



Each section of river will be branded with its respective logo.

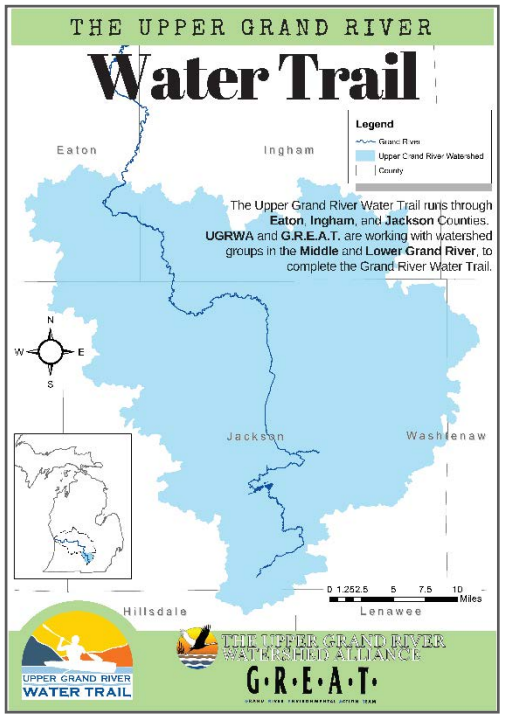
Photos: Grand Valley Metropolitan Council

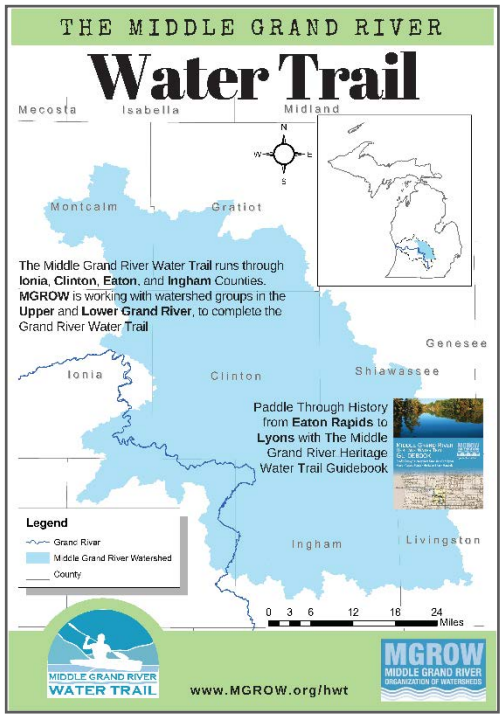
Portland in Ionia County. The Middle Grand River Watershed is one sub-watershed encompassing approximately 258 square miles – or about 165,000 acres, of the entire Grand River Watershed. Nine HUC12 creeksheds (Columbia Creek, Skinner Extension Drain, Silver Creek, Carrier Creek, Sandstone, Frayer Creek, Winchell and Union Drain, Sebewa Creek, and Cryderman Lake Drain) compose the Middle Grand River Watershed.

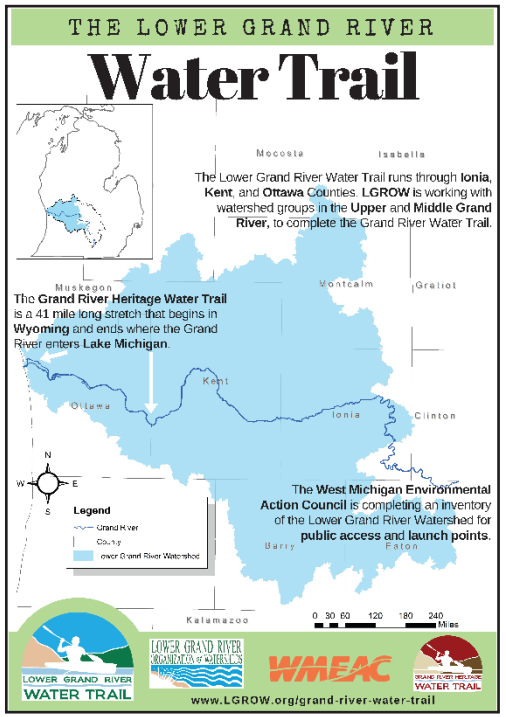
GRAND RIVER PARTNERSHIP

Similar water trail efforts are being undertaken by watershed groups in the Upper and Lower stretches of the Grand River. The Upper Grand River Watershed Alliance, the Middle Grand River Organization of Watersheds, and the Lower Grand River Organization of Watersheds are each working with their local jurisdictions to develop regional water trails with the goal of combining efforts to create a Grand River Water Trail from the headwaters to Lake Michigan.

Organizing their efforts under the "Grand River Partnership," the three watershed groups will seek state and/or national designation for what would be Michigan's longest inland water trail. By coordinating on wayfinding, logo design, and plan development, the partnership will provide for greater visibility and marketability of the water trail, create seamless transitions for water trail users, and maximize the trail's economic impact on the Central/Western Lower Peninsula.







Part 2

The Planning Process

THE PLANNING PROCESS

The Middle Grand River Water Trail Development Plan was developed in partnership by the Middle Grand River Organization of Watersheds and the Tri-County Regional Planning Commission (TCRPC). MGROW, a 501(c)(3) non-profit, serves as an umbrella organization for other environmental, watershed, and "Friends Of" groups throughout the Middle Grand River watershed. TCRPC is designated as the Metropolitan Planning Organization (MPO) and the Economic Development District (EDD) for Ingham, Eaton, and Clinton counties, which includes most of the Middle Grand River. Funding for the plan's development was provided by TCRPC's Partnership Planning Grant from the United States Economic Development Administration, distributed to TCRPC as part of their designation as the EDD.

Both MGROW and TCRPC led the planning process informed by the Michigan Water Trails Manual (LIAA) and the concurrent planning efforts in the Upper and Lower stretches of the Grand. Representatives from MGROW and TCRPC met regularly with the Grand River Partnership to coordinate the approach to the plan and water trail development.

ACCESS SITE ASSESSMENT

The planning team's first step was to take stock of all water trail assets between the Smithville Dam in Hamlin Township and Hazel Devore Park in the Village of Lyons, the first and last access sites within the Middle Grand River. MGROW volunteers visited each access site along this 87 mile stretch of river.

To ensure uniform assessments, a standardized form (Appendix K) was created and used to identify restrooms, electricity, refuse disposal, type of launch, and other qualities and amenities as outlined in Part Four of this plan. Photographs of available parking, facilities, launches and approaches were also taken and used to classify each site as Class A, B, or C, as detailed in the Access Site Inventory section of the plan.

Access Assessment

Communities provided recommendations for site improvement, such as docks and ADA-compliant kayak launchers.

STAKEHOLDER INTERVIEWS & COMMUNITY INPUT

After the access sites were assessed, the community was engaged to provide overall guidance to the planning process, help frame the issues and opportunities related to the water trail, discuss potential management options, and make recommendations for the plan. To understand how the Middle Grand River is managed and what activities were currently underway that might contribute to or impact the development of a water trail, the planning team conducted interviews with staff and public officials from local units of government, safety agencies, and community organizations, as well as the general public.

ACCESS SITE OWNERS

Elected officials, parks managers, and relevant citizens' boards were approached to review the access site inventory and indicate any planned or desired improvements to their facilities that should be represented in the plan. The planning team also sought their support for the wider trail effort. The following access site owners/operators were involved:

- Delta Township
- Eaton County Parks Department
- City of Eaton Rapids
- City of Grand Ledge
- Hamlin Township
- Ingham County Parks Department
- City of Lansing
- Village of Lyons
- Michigan Department of Natural Resources
- City of Portland
- Village of Dimondale
- Consumers Energy

With the help of municipal staff, early outreach was made to sheriff departments and other first responders to make them aware of the effort and to invite them into the planning processes.

Stakeholder Interviews

Meetings with local governments and organizations provided an opportunity for stakeholders to share their concerns and discuss opportunities for a water trail on the Middle Grand River.

Water Trail Public Hearing

A public hearing was held to share project progress, answer questions, and seek public feedback on the draft plan.

STAKEHOLDERS

The planning team also engaged community groups and organizations with an interest in the river and trail development. They were kept informed on the project's progress and invited to review and provide input on the plan. Organizations included:

- Ingham County Conservation District
- Eaton County Conservation District
- Clinton County Conservation District
- Rivertown Adventures (livery)
- The Greater Lansing Visitors Bureau
- Mid-Michigan Environmental Action Council
- Lansing Economic Area Partnership
- Greater Lansing Regional Committee for Stormwater Management
- Lansing Oar and Paddle Club
- Friends of the Looking Glass River
- Friends of the Maple River
- Friends of the Lansing Regional Trails

GENERAL PUBLIC

Seeking input from the public at large, the planning team held a public hearing to share the status of the project, respond to questions, and take feedback on the draft plan from all who were interested. The public hearing was held as part of MGROW's annual meeting and was publicized on MGROW and partners' event calendars, as well as on Facebook through paid advertising. Dinner and presentations were provided and roughly 80 members of the public attended. There were multiple avenues for attendees to share their feedback, as the planning team provided time for discussion, note cards for anonymous comments, and a website comment form that was active for 6 weeks following the hearing, and was advertised in the MGROW newsletter and online.

Public comments that referenced desired improvements at particular access sites were shared with the respective access site owner for consideration.

IMPLEMENTATION

Following the public hearing, the planning team held group meetings with access site owners to discuss plan implementation and coordination across the Middle Grand River. Stakeholders indicated that branding the trail and improving its safety was their initial priority. All agreed to accomplish this by providing users with wayfinding resources.

WAYFINDING

MGROW, TCRPC, local parks directors, and municipal staff held multiple meetings to discuss the design and installation of wayfinding signage. It was determined that the first phase of signage installs should occur at municipal owned properties, as they are already maintained and required no further levels of approval to install.

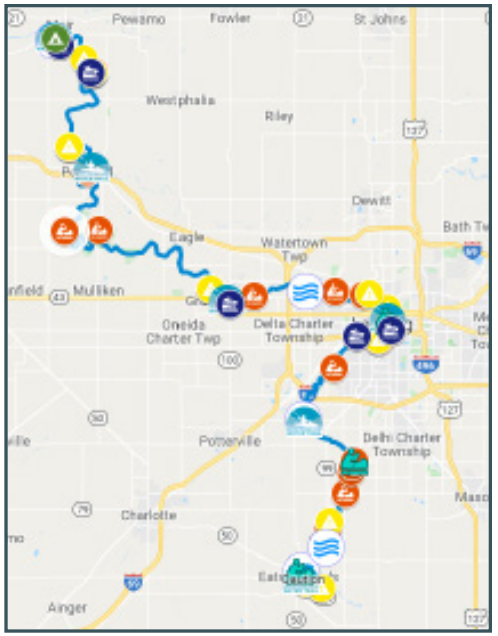
This group researched and reviewed wayfinding systems from around the state, settling on using "Miles from Lake Michigan" as the wayfinding system. Alternatives, such as a color coded or numbered system, were determined to be difficult to update as new access sites are developed. Instead, river miles are unchanging, future-proof, educational, and can be integrated easily into the Upper and Lower Grand River Water Trail wayfinding. It was determined that signage must include the MGRWT logo, site name, miles to Lake Michigan, and miles to the next access point. The group agreed upon signage design standards and a labeling system to distinguish locations as either a "Launch," "Access," "Portage," or "Park," (with some exceptions) and shared this system with the Grand River Partnership. Templates and signage standards are located in the Plan Appendices.

To further enhance wayfinding on the trail and help users plan safer trips, the planning team created a Google Map of the trail, complete with access site locations, the distance between them, hazards, and more. Users can access the map on a mobile phone and use GPS location data to identify their exact position on the trail and view pictures of upcoming hazards and amenities. The web address for the map is printed on every water trail sign.

In the summer of 2019, TCRPC secured funding to provide all access sites in the Middle Grand River with a 24 x 18 inch reflective aluminum sign. These branded signs define the water trail and help paddlers to plan, orient themselves, keep track of the mileage remaining in their trip, and learn more about the Grand's connection to Lake Michigan by including mileage to the river's mouth. It also helps them effectively communicate their location to first responders in an emergency. 9-1-1 operators can direct personnel to the right location on the river, improving rescue response times.

Water Trail Map

The Middle Grand River Water Trail Google Map allows users to view access site amenities and hazards, plot their realtime location on the river, and even launch driving directions to access points.



TCRPC also completed a 360-degree virtual tour of all 87 miles of the Middle Grand River Water Trail. Similar to Google Maps' "Street View," this high-resolution panoramic map allows users to interactively explore a three-dimensional tour of the water trail. Created by Terrain360 – a company that uses specialized cameras mounted atop a pontoon boat – this online tool allows paddlers and trail users to preview their trips in a virtual environment and prepare for safe and enjoyable experiences ahead of their expeditions.

In addition to serving as a promotional tool to highlight the MGRWT resources, it allows users to preview potential challenging hazards and portages. By virtually viewing the river, users are able to either anticipate or avoid situations that may be beyond their comfort level.

The 360-degree tour is available on TCRPC's website and on the web page advertised on trail signage.

RELATED PLANNING EFFORTS AND RESOURCES

There have been numerous plans and studies, both regional and local, focused on the development and/or enhancement of the Middle Grand River. In addition, there have been several efforts to encourage and support recreational paddling on the Middle Grand River. These existing documents and planning initiatives proved to be very useful in the development of this water trail development plan, providing both contextual and background information, as well as information about future plans and projects associated with the river and water trail. In addition, the below national and state resources were used to help develop this plan.

NATIONAL

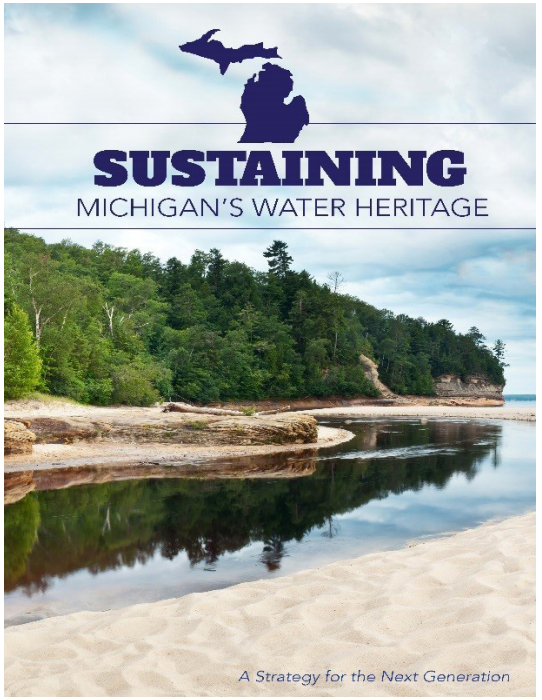
- Prepare to Launch! Guidelines for Assessing, Designing, and Building Launch Sites for Carry-in Watercraft. National Park Service, River Management Society. 2014.
- National Water Trail System: Website & Resources. National Park Service. Rivers, Trails and Conservation Assistance Program. nps.gov/watertrails.
- Managing Visitor Use in Diverse Settings. PowerPoint Presentation. Interagency Visitor Use Management Council. 2016.
- Consumer Segmentation Executive Summary, Outdoor Industry Association.

STATE

- Michigan's Great Lakes Water Trails. Website and Resources. LIAA. michiganwatertrails.org.
- Sustaining Michigan's Water Heritage. Michigan Office of the Great Lakes.
- Agency Policy on State Water Trails Designation, 8-18-2016 Draft. Michigan Department of Natural Resources.
- 2016 Michigan Water Trail Summit. Presentations. Funding for this Summit was provided by the Michigan Coastal Zone Management Program, Department of Environmental Quality, Office of the Great Lakes, and the National Oceanic and Atmospheric Administration.

State Level Support for Water Trails

Recognizing the economic benefit to local communities, the State of Michigan's 30-year water strategy includes the development of a system of water trails as one of its five key priorities.



Upper Grand River Water Trail Development

LIAA, The Upper Grand River Watershed Alliance, and the Region 2 Planning Commission have released their Water Trail Development Plan for the Upper Grand River (Grand Lake to Eaton Rapids).

The Upper Grand River Watershed Alliance, MGROW, and LGROW have partnered to facilitate the development of a Grand River-wide water trail.

WATERSHED/REGIONAL RESOURCES

- Grand River Assessment Special Report, 2017. Michigan Department of Natural Resources Fisheries.
- Middle Grand River Heritage Water Trail. Middle Grand River Organization of Watersheds.
- Upper Grand River Water Trail Development Plan. LIAA. Upper Grand River Watershed Alliance. Region 2 Planning Commission.
- Upper Grand River Watershed Management Plan, 2003. Grand River Inter-County Drainage Board.
- Middle Grand River Watershed Management Plan. Eaton Conservation District.
- Lower Grand River Water Trail Assessment and Improvement Plan (Draft), 2016. West Michigan Environmental Action Council.
- MGROW Website: mgrow.org
- Grand River Environmental Action Team Website: great-mi.org
- Upper Grand River Watershed Alliance Website: uppergrandriver.org
- Upper Grand River Implementation Project, Jackson County Conservation District.
- Return the Rapids to Eaton Rapids Patronicity Page: patronicity.com/project/return_the_rapids_to_eaton_rapids#/

PLAN REQUIREMENTS

Laying the framework for state and national water trail designation is the primary objective of this plan. Promotion, assistance and recognition are by-products of joining the larger networks of water trails, and the State of Michigan and U.S. Department of Interior have laid out their respective criteria for designation. These designation programs were studied and used to guide the development of this plan.

STATE DESIGNATION

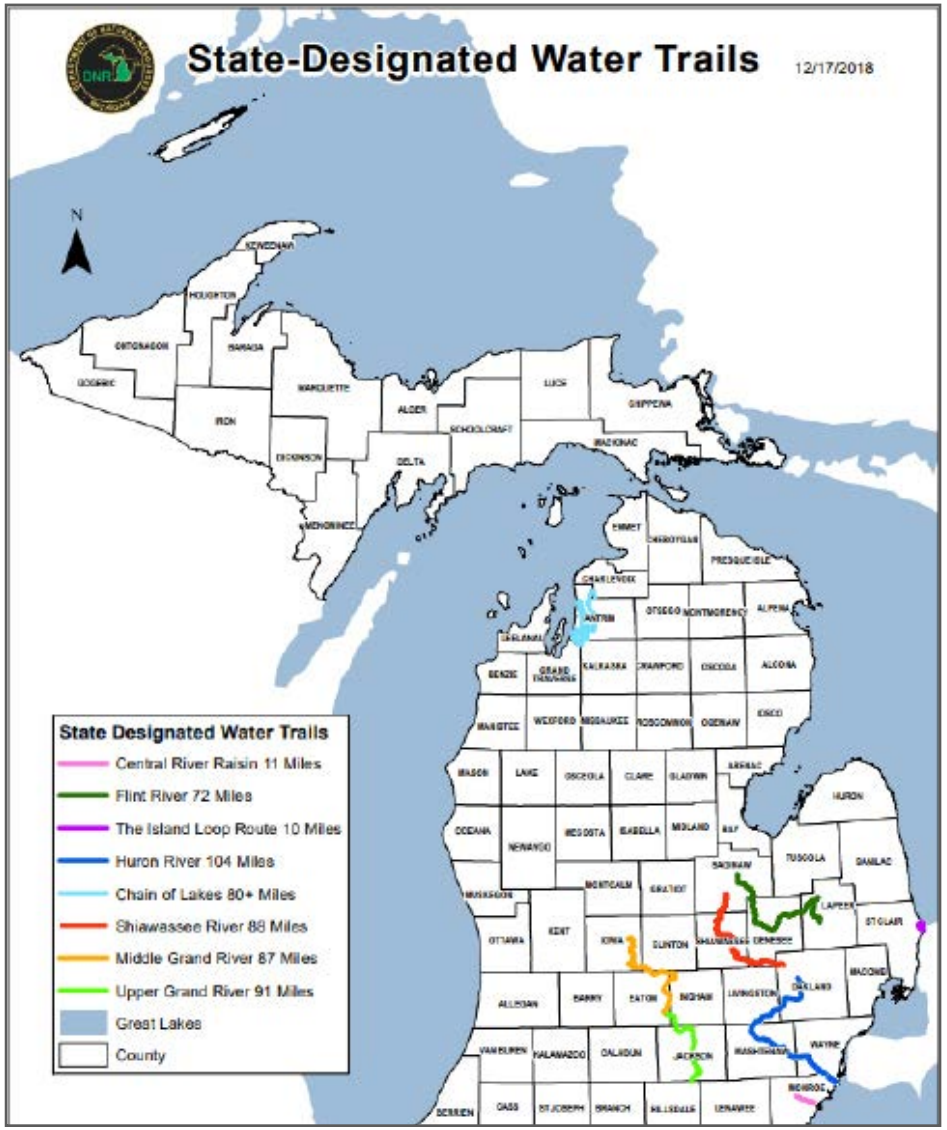
The development of a water trails network has long been a high priority for the State of Michigan. Michigan's 30-year Water Strategy Plan, as well as the MDNR's Statewide Comprehensive Outdoor Recreation Plan (SCORP), DNR-Management Land Strategy, Comprehensive Trail Plan, and the Parks and Recreation Division Strategic Plan all call for a statewide system of designated, sustainable water trails.

In response, the Michigan Department of Natural Resources and the Michigan legislature have worked to create multiple frameworks for designation. The State-Designated Water Trail, Pure Michigan Water Trails, and the Heritage Water Trail programs each highlight different qualities of Michigan waterways and have different designation criteria.

DNR DESIGNATION

In 2018, the DNR published the framework for a new state-designated water trail designation program. The goal of the program is to establish a sustainable system of water trails that are geographically dispersed, locally supported, and offer a diverse range of experiences, including many different lengths, scenery, heritage exploration, varying difficulty levels and amenities. Under this framework state officials developed criteria for a state water trail designation. To receive a state water trail designation, the water trail must:

1. Provide a quality trail experience
2. Provide clear information for users
3. Demonstrate broad community support
4. Demonstrate a sustainable business, maintenance, and marketing plan



There are three types of state-designated water trails: Great Lakes, Large Lakes and connecting waters, and Rivers and streams. Designees must provide users with information on the difficulty level (beginner, intermediate, advanced) and the expectations of amenities for each segment of the trail.

The measurable objective established in the DNR Trail Plan and repeated in the Land Strategy states: "*within five years, designate public water trails that have appropriate signage amenities, safety measures, and promotion on 30 percent of Michigan's navigable waters, five connected lake systems, and 75 percent of Michigan's Great Lakes shoreline and connecting channels.*"

This program seeks to bring existing and newly identified water trails together into one cohesive state trail network. The state designation provides an opportunity for water trails to be promoted in traditional DNR marketing materials and to connect with a community of water resource managers that can benefit from information sharing and collaboration.

Promotional Benefits

MDNR and Department of Interior websites, brochures, and other public facing advertisements introduce designated water trails to a wider audience.

Pure Michigan Water Trails

In 2018, the MDNR and Travel Michigan launched the Pure Michigan Trail and Trail Town designation program. Its aim is to highlight Michigan's best trails and trail-centered communities and to recognize the collaboration of government, non-profits, foundations, and volunteers that develop and maintain trails. Applicants must demonstrate the same four points as the state-designated water trail program, but the Pure Michigan designation focuses on the most scenic water trails in the state. Water trails can generate more exposure and tourism by being officially associated with the popular Pure Michigan brand.

Heritage Water Trails

In 2002, the Michigan legislature created the Michigan Heritage Water Trail Program. The program was established to help local advocates create water trails that help celebrate their local history, culture, and environment. However, no funding has ever been appropriated to implement the program. Still, over the life of the program, nine heritage water trails have been established in communities and regions throughout Michigan. Responsibility for the program was transferred from the Department of History, Arts and Libraries to the Department of Natural Resources by executive order in 2009.

NATIONAL DESIGNATION

from the "West Michigan Water Trail Final Report," WMEAC, et al, 2006

The National Water Trails System is an interagency collaborative effort administered by the National Park Service through the Rivers, Trails, and Conservation Assistance Program and the National Trails System. The National Water Trails System (NWTS) seeks to bring existing and newly identified water trails together into one cohesive network of exemplary water trails, via a national network that is cooperatively supported and sustained and shares best management practices. Each designated national water trail is managed by a local management entity (e.g., local, state, or federal government agency; nonprofit organization; or interagency organization). As a subset of the national recreation trail designation, the four criteria for National Recreation Trail designation are:

1. The trail and all access points must be open to public use and be designed, constructed, and maintained according to best management practices.
2. The trail is in compliance with applicable land use plans and environmental laws.
3. The trail will be open for public use for at least 10 consecutive years after designation.
4. The trail designation must be supported by the public and private landowner(s) on whose properties access points exist (NPS 2014a).

Important elements to meet NWTS best management practices include recreation opportunities, education, conservation, community support, public information, trail maintenance, and planning.

Benefits of designation as part of the National Water Trails System include:

1. Designation by the Secretary of the Interior as a national water trail
2. National promotion and visibility, including use by the management entity of the National Water Trails System logo in appropriate settings and trail publications
3. Mutual support and knowledge sharing as part of a national network
4. Opportunities to obtain technical assistance and funding for planning and implementing water trail projects (NPS 2014b)

These trails may gain positive impact from increased tourism, assistance with stewardship projects, increased protection of resources, contribution to public health and quality of life, access to networking and training opportunities, and assistance with and recognition of special events.

A final element in trail best management practice is the calculation of distance between access points and campgrounds. A commonly used metric is "5 and 10." As an example, the Wisconsin Lake Michigan project uses the standard of 5 miles between access points and 10 miles between campgrounds (or presumably other lodging options) (WDNR 2011).

National Recognition

Use of the National Water Trail System logo in signage and publications is available to water trails designated by the Secretary of the Interior.

Part 3

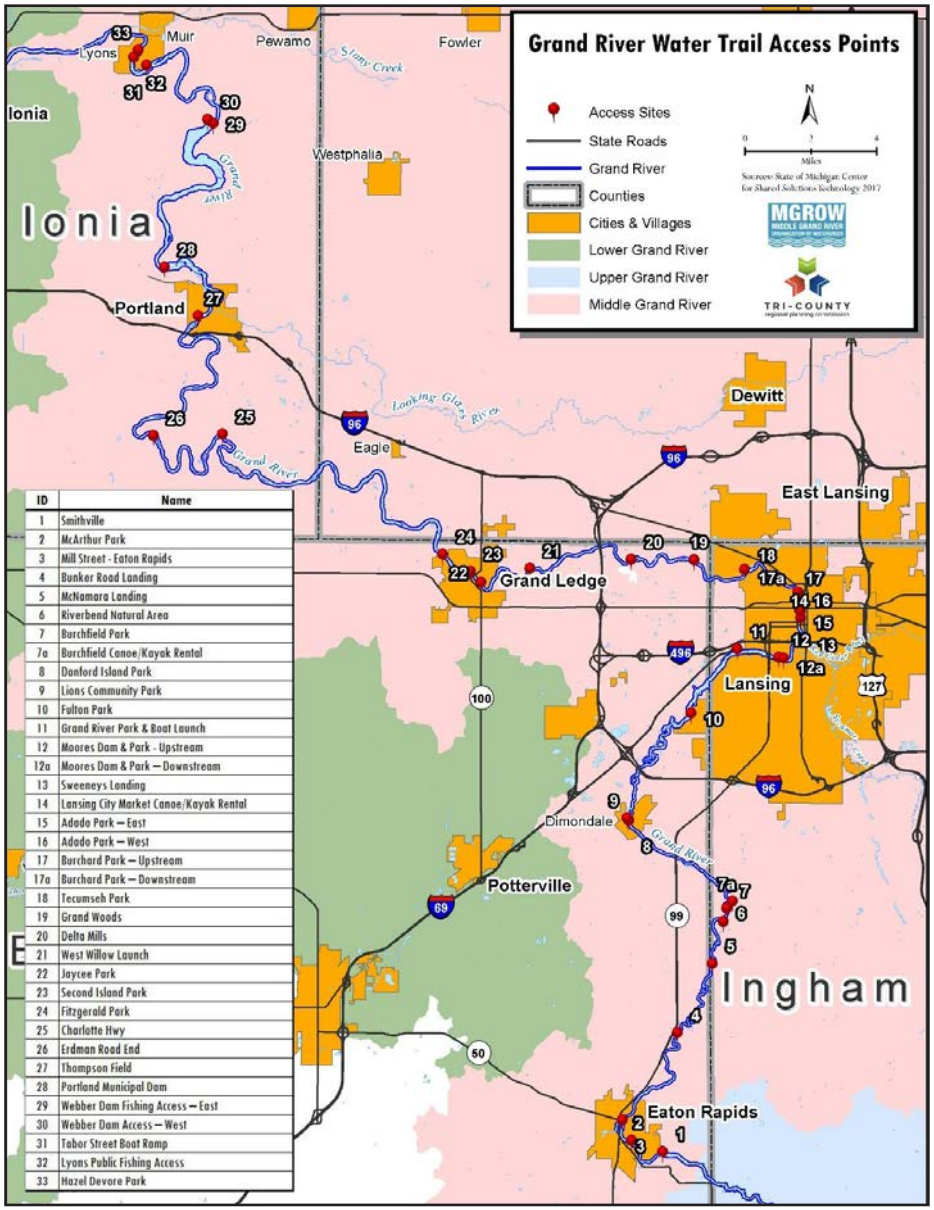
Water Trail Asset Inventory

WATER TRAIL ASSET INVENTORY

The planning team visited each access site along the Middle Grand River, documenting all available amenities and site features to create an inventory of all public access points. Photographs of available parking, facilities, launches, and approaches were taken and used to classify each site as Class A, B, or C, as detailed in this section of the plan.

In addition to identifying current assets along the river, the water trail development process was used to identify attributes that may hinder the use, enjoyment, or safety of the water trail. Communities offered their visions for improving sparsely equipped launch sites and developing new access points to address gaps between amenities and entry/exit points for users and safety personnel. The paddling community pointed out the location of persistent hazards like "strainers" or logjams that can endanger inexperienced paddlers and offered their insights on how to improve current dam safety and wayfinding.

Stakeholders, the public, and the planning team determined that current "weak spots" or gaps are an opportunity to enhance the water trail moving forward, rather than an impediment to current use or designation. Desired improvements for specific launch sites are listed in the following access site inventory in this section. General recommendations and challenges to overcome follow in Section 4.



ID	Name
1	Smithville
2	McArthur Park
3	Mill Street - Eaton Rapids
4	Bunker Road Landing
5	McNamara Landing
6	Riverbend Natural Area
7	Burchfield Park
7a	Burchfield Canoe/Kayak Rental
8	Danford Island Park
9	Lions Community Park
10	Fulton Park
11	Grand River Park & Boat Launch
12	Moores Dam & Park - Upstream
12a	Moores Dam & Park – Downstream
13	Sweeneys Landing
14	Lansing City Market Canoe/Kayak Rental
15	Adado Park – East
16	Adado Park – West
17	Burchard Park – Upstream
17a	Burchard Park – Downstream
18	Tecumseh Park
19	Grand Woods
20	Delta Mills
21	West Willow Launch
22	Jaycee Park
23	Second Island Park
24	Fitzgerald Park
25	Charlotte Hwy
26	Erdman Road End
27	Thompson Field
28	Portland Municipal Dam
29	Webber Dam Fishing Access – East
30	Webber Dam Access – West
31	Tabor Street Boat Ramp
32	Lyons Public Fishing Access
33	Hazel Devore Park

CLASSIFICATION OF ACCESS SITES

Before developing recommendations on specific site improvements, an analysis of existing assets was completed. The quality of amenities and accessibility was reviewed and sites were rated as Class A, Class B, and Class C in accordance with the following criteria.

CLASS A SITES

Class A sites should stand out as the "signature access sites" for the water trail. These sites should provide as many amenities as possible to paddlers, and should be ideal for novice paddlers. These sites should be well signed (wayfinding and informational kiosks) and featured prominently on maps.

Essential Attributes of Class A Sites

- Boater access promoted
- Nearby paved parking for multiple vehicles
- Restrooms
- Refuse disposal
- Drinking water
- Formal launch site
- Kiosk or bulletin board for safety, wayfinding, and educational information

Desirable Attributes of Class A Sites

- Kiosk consistent with water trail standards
- Restrooms with flush toilets and sinks with hot water
- Picnic table(s) and grills
- ADA-compliant kayak launch
- Year-round maintenance
- Kayak/Canoe racks and equipment storage
- Lighting and/or electric outlets
- Separate launch for carry-in and trailered watercraft

Class A Access Sites

These are standout access sites that provide many amenities to the public. Should be ideal for novice paddlers and include wayfinding and informational kiosk.

CLASS B SITES

Class B sites should be clearly visible from the water. Class B sites should be signed, but do not require a kiosk. These sites provide a landing area in between the Class A sites, or in some cases, access for more experienced paddlers.

Essential Attributes of Class B Sites

- Legal for boaters to launch a craft
- Access does not involve trespass or environmental damage
- Refuse disposal
- Clear path to water's edge
- Nearby parking

Desirable Attributes of Class B Sites

- Primitive toilet (or better)
- Drinking water
- Paved parking
- Kiosk or bulletin board for safety, wayfinding, and educational information
- Picnic table(s) and grills

Class B Access Sites

Less equipped than Class A and more suited for experienced paddlers. Good parking and trash disposal options.

CLASS C SITES

Class C sites are generally adjacent to roads with high speed limits and no formal parking. In some instances, these are sites where parking and unloading watercraft was determined to be undesirable, unsafe, and harmful to the surrounding landscape. These sites have the potential to become developed (into a Class B site) at some time but are currently not a priority.

Essential Attributes of Class C Sites

- Legal for boaters to launch a craft
- Access does not involve trespass or environmental damage

OTHER SITES:

Other sites may exist for boaters to launch a craft. If a site is limited to certain individuals, such as property owners, residents, or members, the site will not be included in this plan because it is not considered "public" (though it may be identified in the Potential Access Sites to Develop section).

Other sites may become available to the public in the future. These sites cannot be classified until their attributes are known.

Some sites may be occasionally used by the public to launch boats, but property ownership is not public, or not recognized by the owner as an access site. For example, the land under a municipal-owned bridge may be occasionally used to launch a canoe, going unenforced or unnoticed by the owner. Similarly, unmarked, undeveloped riparian frontage may be owned privately but assumed to be public by some, and may attract shore fishing or paddlecraft launching that could be deemed, albeit unknowingly, as trespassing. These sites cannot be included in this plan but could represent potential opportunities for expansion through purchase or grant of easement in the future.

Class C Access Sites

No formal parking or launch, but legal access.

ACCESS SITE INVENTORY & DESIRED IMPROVEMENTS

Two pages are dedicated to each location in this access site inventory. The first details access site attributes in both a list and site photographs. The second features aerial footage of the location and any desired site improvements identified by access site owners during stakeholder interviews.

Some access sites are new and already built to the community's wishes. Others are in close proximity to other high quality sites, making major improvements an unnecessary investment. As such, the "desired improvements" section is left empty where none were identified. However, this section (and the plan in general) should be considered a living document. Both access site attributes and desired improvements will be updated as sites and community desires change.

ACCESS SITE: SMITHVILLE PARK

CLASSIFICATION: Class B

OWNERSHIP: Hamlin Township

ATTRIBUTES:

• Parking	4 spaces (gravel)
• Distance to River	200’
• Launch Type	Beach
• Restrooms	No
• Drinking Water	No
• Picnic Tables	2
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: SMITHVILLE PARK

ADDRESS: Smithville Rd, Eaton Rapids, MI

COORDINATES: 42.49985, -84.63005

MILES FROM LAKE MICHIGAN: 180.4

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Install vault toilets
- Install kiosk/bulletin board
- Improve streambank erosion control
- Improve safety features around dam
- Acquire additional land for park development

ACCESS SITE: MCARTHUR PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Eaton Rapids

ATTRIBUTES:

- Parking 10 spaces (street)
- Distance to River 50’
- Launch Type Ramp (dock)
- Restrooms Primitive
- Drinking Water No
- Picnic Tables No
- Refuse Disposal Yes
- Fee for Use No
- Camping No

ACCESS SITE: MCARTHUR PARK

ADDRESS: McArthur River Dr, Eaton Rapids, MI

COORDINATES: 42.5048, -84.6487

MILES FROM LAKE MICHIGAN: 178.9

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Install kiosk/bulletin board
- Improve streambank erosion control
- Improve portage to Mill Pointe Park

ACCESS SITE: MILL POINTE PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Eaton Rapids

ATTRIBUTES:

• Parking	36 spaces (paved)
• Distance to River	120’ up, 150’ down
• Launch Type	Beach, Beach
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	1
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: MILL POINTE PARK

ADDRESS: N Main St, Eaton Rapids, MI

COORDINATES: 42.513833, -84.654117

MILES FROM LAKE MICHIGAN: 178.1

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Install toilets
- Provide drinking water
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: BUNKER ROAD CANOE LANDING

CLASSIFICATION: Class B

OWNERSHIP: Ingham County Parks

ATTRIBUTES:

• Parking	10 spaces (gravel)
• Distance to River	50’
• Launch Type	Steps
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: BUNKER ROAD CANOE LANDING

ADDRESS: 11000 Bunker Hwy, Eaton Rapids, MI

COORDINATES: 42.552283, -84.621367

MILES FROM LAKE MICHIGAN: 173.9

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Install kiosk/bulletin board
- Improve access to river (trail, path)
- Provide picnic tables
- Provide drinking water
- Improve streambank erosion control

ACCESS SITE: MCNAMARA LANDING

CLASSIFICATION: Class B

OWNERSHIP: Ingham County Parks

ATTRIBUTES:

- Parking 24 spaces (gravel)
- Distance to River 140’
- Launch Type Barrier-free, Steps
- Restrooms Primitive
- Drinking Water Hand pump
- Picnic Tables 2
- Refuse Disposal Barrels
- Fee for Use No
- Camping No






ACCESS SITE: MCNAMARA LANDING

ADDRESS: 6450 W Columbia Rd, Mason, MI

COORDINATES: 42.58283, -84.60085

MILES FROM LAKE MICHIGAN: 169.9

DESIRED IMPROVEMENTS:

- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: RIVERBEND NATURAL AREA

CLASSIFICATION: Class B

OWNERSHIP: Ingham County Parks

ATTRIBUTES:

• Parking	30 spaces (gravel)
• Distance to River	150’
• Launch Type	Steps/dock
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: RIVERBEND NATURAL AREA

ADDRESS: 6200 Nichols Rd, Holt, MI

COORDINATES: 42.601367, -84.594317

MILES FROM LAKE MICHIGAN: 167.9

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Install vault toilets
- Install kiosk/bulletin board
- Improve streambank erosion control
- Provide picnic tables

ACCESS SITE: BURCHFIELD PARK

CLASSIFICATION: Class B

OWNERSHIP: Ingham County Parks

ATTRIBUTES:

• Parking	Full lot (gravel)
• Distance to River	375’ N, 175’ S
• Launch Type	Steps/dock
• Restrooms	Flush
• Drinking Water	Running
• Picnic Tables	Many
• Refuse Disposal	Barrels
• Fee for Use	Yes
• Camping	No

ACCESS SITE: BURCHFIELD PARK

ADDRESS: 881 Grovenburg Rd, Holt, MI

COORDINATES: 42.607117, -84.592233

MILES FROM LAKE MICHIGAN: 167.4

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Install kiosk/bulletin board
- Improve streambank erosion control
- Improve access to river (trail, path)

ACCESS SITE: BURCHFIELD PARK - CANOE AND KAYAK RENTAL

CLASSIFICATION: Class B

OWNERSHIP: Ingham County Parks

ATTRIBUTES:

- Parking — Many spaces (gravel)
- Distance to River — 800’ NW
- Launch Type — Beach
- Restrooms — Flush
- Drinking Water — Running
- Picnic Tables — Many
- Refuse Disposal — Barrels
- Fee for Use — Yes
- Camping — No

ACCESS SITE: BURCHFIELD PARK - CANOE AND KAYAK RENTAL

ADDRESS: 881 Grovenburg Rd, Holt, MI

COORDINATES: 42.610333, -84.588817

MILES FROM LAKE MICHIGAN: 166.9

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Improve access to river (trail/path)
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: DANFORD ISLAND PARK

CLASSIFICATION: Class B

OWNERSHIP: Village of Dimondale

ATTRIBUTES:

- Parking: 14 spaces (paved)
- Distance to River: 300’ up, 230’ down
- Launch Type: Beach, barrier-free
- Restrooms: No
- Drinking Water: No
- Picnic Tables: 3
- Refuse Disposal: Barrels
- Fee for Use: No
- Camping: No

ACCESS SITE: DANFORD ISLAND PARK

ADDRESS: 201 W Washington St, Dimondale MI

COORDINATES: 42.645883, -84.65085

MILES FROM LAKE MICHIGAN: 162.3

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Provide toilets
- Install kiosk/bulletin board
- Improve streambank erosion control
- Provide picnic tables

ACCESS SITE: LIONS COMMUNITY PARK

CLASSIFICATION: Class C

OWNERSHIP: Village of Dimondale

ATTRIBUTES:

- Parking 20 spaces (street)
- Distance to River 600’
- Launch Type Bank
- Restrooms No
- Drinking Water No
- Picnic Tables 15
- Refuse Disposal Barrels
- Fee for Use No
- Camping No

ACCESS SITE: LIONS COMMUNITY PARK

ADDRESS: 300 Jefferson St, Dimondale, MI

COORDINATES: 42.646514 -84.652449

MILES FROM LAKE MICHIGAN: 162.2

DESIRED IMPROVEMENTS:

- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: FULTON PARK

CLASSIFICATION: Class C

OWNERSHIP: City of Lansing

ATTRIBUTES:

- Parking 12 spaces (paved)
- Distance to River 375’
- Launch Type Steps/dock
- Restrooms No
- Drinking Water No
- Picnic Tables 2
- Refuse Disposal Barrels
- Fee for Use No
- Camping No

NOTE: Though identified as an access site in this plan and on the online map, Fulton Park is not classified as an “Access Site” on trail signage as described in the Appendices. Exiting the trail at Fulton Park requires users to carry paddlecraft up steep stairs, posing a challenge to many users. In the interest of safety and to ensure paddlers do not unknowingly plan to exit the trail at a challenging site, water trail planners did not identify Fulton Park as the “Next Access” site on the signage immediately upstream.

ACCESS SITE: FULTON PARK

ADDRESS: Sheffield Blvd, Lansing, MI

COORDINATES: 42.693233, -84.613867

MILES FROM LAKE MICHIGAN: 157.3

DESIRED IMPROVEMENTS:

- Provide toilets
- Provide drinking water
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: GRAND RIVER PARK

CLASSIFICATION: Class A

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	50+ spaces (paved)
• Distance to River	0-350’
• Launch Type	Ramp and Dock
• Restrooms	Flush
• Drinking Water	Running
• Picnic Tables	4
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: GRAND RIVER PARK

ADDRESS: Grand River Park, Lansing, MI

COORDINATES: 42.719858, -84.567351

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Provide lighting/electricity at launch
- Install kiosk/bulletin board
- Install boat storage/lockers
- Improve streambank erosion control

ACCESS SITE: MOORES DAM & PARK UPSTREAM LAUNCH

CLASSIFICATION: Class A

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	70+ spaces (paved)
• Distance to River	290-470’ up
• Launch Type	Dock
• Restrooms	Flush
• Drinking Water	Running
• Picnic Tables	Distant
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: MOORES DAM & PARK UPSTREAM LAUNCH

ADDRESS: Moores River Dr, Lansing, MI

COORDINATES: 42.7183, -84.5609

MILES FROM LAKE MICHIGAN: 153.3

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Provide lighting/electricity
- Install boat storage/lockers
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: MOORES DAM & PARK DOWNSTREAM LAUNCH

CLASSIFICATION: Class A

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	70+ spaces (paved)
• Distance to River	630-880’ down
• Launch Type	Barrier-free
• Restrooms	Flush
• Drinking Water	Running
• Picnic Tables	Distant
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No





ACCESS SITE: MOORES DAM & PARK DOWNSTREAM LAUNCH

ADDRESS: Moores River Dr, Lansing, MI

COORDINATES: 42.7183, -84.5609

MILES FROM LAKE MICHIGAN: 153.3

DESIRED IMPROVEMENTS:

- Provide lighting/electricity
- Install boat storage/lockers
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: SWEENEY'S LANDING/CHERRY HILL PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	10 paved
• Distance to River	0-220'
• Launch Type	Ramp, Dock, Barrier-free
• Restrooms	No
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: SWEENEY'S LANDING/CHERRY HILL PARK

ADDRESS: 515 River St, Lansing, MI

COORDINATES: 42.7263, -84.5457

MILES FROM LAKE MICHIGAN: 152.0

DESIRED IMPROVEMENTS:

- Provide picnic tables
- Provide drinking water
- Install boat storage/lockers
- Install toilets
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: ROTARY PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Lansing

ATTRIBUTES:

- Parking 10 spaces (paved)
- Distance to River 0-220’
- Launch Type Ramp, Dock, Barrier-free
- Restrooms No
- Drinking Water No
- Picnic Tables Yes
- Refuse Disposal Barrels
- Fee for Use Yes (parking)
- Camping No






ACCESS SITE: ROTARY PARK

ADDRESS: City Market Dr, Lansing, MI

COORDINATES: 42.735537, -84.548504

MILES FROM LAKE MICHIGAN: 151.4

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install toilets
- Install kiosk/bulletin board
- Improve streambank erosion control
- Provide drinking water

ACCESS SITE: ADADO PARK - EAST

CLASSIFICATION: Class C

OWNERSHIP: City of Lansing

ATTRIBUTES:

- Parking — No
- Distance to River — Distant
- Launch Type — Dock
- Restrooms — No
- Drinking Water — No
- Picnic Tables — 1
- Refuse Disposal — Barrels
- Fee for Use — No
- Camping — No

ACCESS SITE: ADADO PARK - EAST

ADDRESS: Lansing River Trail, Lansing, MI

COORDINATES: 42.738422, -84.548425

MILES FROM LAKE MICHIGAN: 151.2

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Improve access to river (trail, path)
- Provide toilets
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: ADADO PARK - WEST

CLASSIFICATION: Class C

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	30 spaces (street)
• Distance to River	370-500’
• Launch Type	Dock
• Restrooms	No
• Drinking Water	Running
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: ADADO PARK - WEST

ADDRESS: Lansing River Trail, Lansing, MI

COORDINATES: 42.738694, -84.549154

MILES FROM LAKE MICHIGAN: 151.2

DESIRED IMPROVEMENTS:

- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: BURCHARD PARK - NORTH LANSING DAM UPSTREAM LAUNCH

CLASSIFICATION: Class B

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	80+ spaces (paved)
• Distance to River	450-700’ up, 175-400’ down
• Launch Type	Dock, Bank
• Restrooms	No
• Drinking Water	No
• Picnic Tables	2
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No






ACCESS SITE: BURCHARD PARK - NORTH LANSING DAM UPSTREAM LAUNCH

ADDRESS: 216 E Grand River Ave, Lansing, MI

COORDINATES: 42.745075, -84.549425

MILES FROM LAKE MICHIGAN: 150.7

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Install toilets
- Provide drinking water
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: BURCHARD PARK - NORTH LANSING DAM DOWNSTREAM LAUNCH

CLASSIFICATION: Class B

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	80+ spaces (paved)
• Distance to River	450-700’ up, 175-400’ down
• Launch Type	Dock, Bank
• Restrooms	No
• Drinking Water	No
• Picnic Tables	2
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: BURCHARD PARK - NORTH LANSING DAM DOWNSTREAM LAUNCH

ADDRESS: 216 E Grand River Ave, Lansing, MI

COORDINATES: 42.746627, -84.550036

MILES FROM LAKE MICHIGAN: 150.7

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Provide drinking water
- Provide toilets
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: TECUMSEH PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Lansing

ATTRIBUTES:

• Parking	3 spaces (paved)
• Distance to River	200’
• Launch Type	Barrier-free
• Restrooms	No
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No






ACCESS SITE: TECUMSEH PARK

ADDRESS: Tecumseh River Road, Lansing, MI

COORDINATES: 42.758133, -84.578583

MILES FROM LAKE MICHIGAN: 148.6

DESIRED IMPROVEMENTS:

- Install toilets
- Install kiosk/bulletin board
- Improve streambank erosion control
- Provide picnic tables
- Provide drinking water

ACCESS SITE: GRAND WOODS PARK

CLASSIFICATION: Class B

OWNERSHIP: Delta Township

ATTRIBUTES:

• Parking	10 spaces (gravel)
• Distance to River	60-170’
• Launch Type	Beach
• Restrooms	Distant
• Drinking Water	No
• Picnic Tables	2
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: GRAND WOODS PARK

ADDRESS: Grand Woods Park Dr, Lansing, MI

COORDINATES: 42.760733, -84.612317

MILES FROM LAKE MICHIGAN: 146.4

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Improve access to river (trail, path)
- Provide toilets nearby
- Provide drinking water
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: DELTA MILLS

CLASSIFICATION: Class B

OWNERSHIP: Delta Township

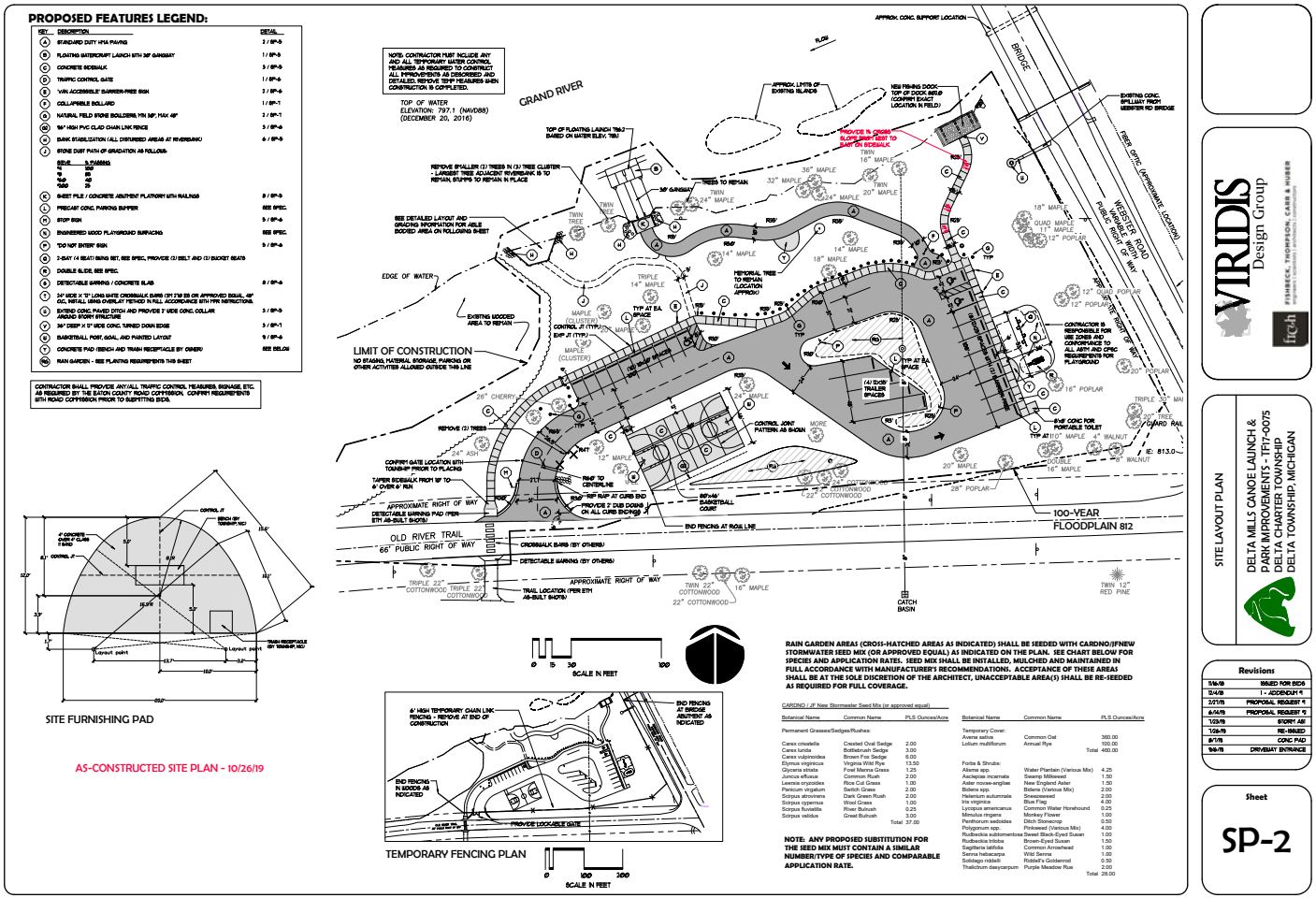
ATTRIBUTES:

• Parking	20 spaces (gravel)
• Distance to River	50’
• Launch Type	Barrier-free, Beach
• Restrooms	Distant
• Drinking Water	Distant
• Picnic Tables	7
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No






ACCESS SITE: DELTA MILLS PARK



ADDRESS: 7001 Old River Trail, Lansing, MI

COORDINATES: 42.761, -84.6499

MILES FROM LAKE MICHIGAN: 144.0

DESIRED IMPROVEMENTS:

- Install boat storage/lockers
- Install kiosk/bulletin board
- Improve streambank erosion control

VIRIDIS Design Group

SITE LAYOUT PLAN

DELTA MILLS CANOE LAUNCH & PARK IMPROVEMENTS - TP17-0075
DELTA CHARTER TOWNSHIP
DELTA TOWNSHIP, MICHIGAN

Revisions

7/16/18	ISSUED FOR BIDS
7/24/18	1 - ADDENDUM 1
2/27/19	PROPOSAL REQUEST 1
6/14/19	PROPOSAL REQUEST 1
7/23/19	STORY AS
7/26/19	RE-ISSUED
8/1/19	CONC PAD
9/6/19	DRIVEWAY ENTRANCE

Sheet

SP-2

ACCESS SITE: WEST WILLOW CANOE LAUNCH

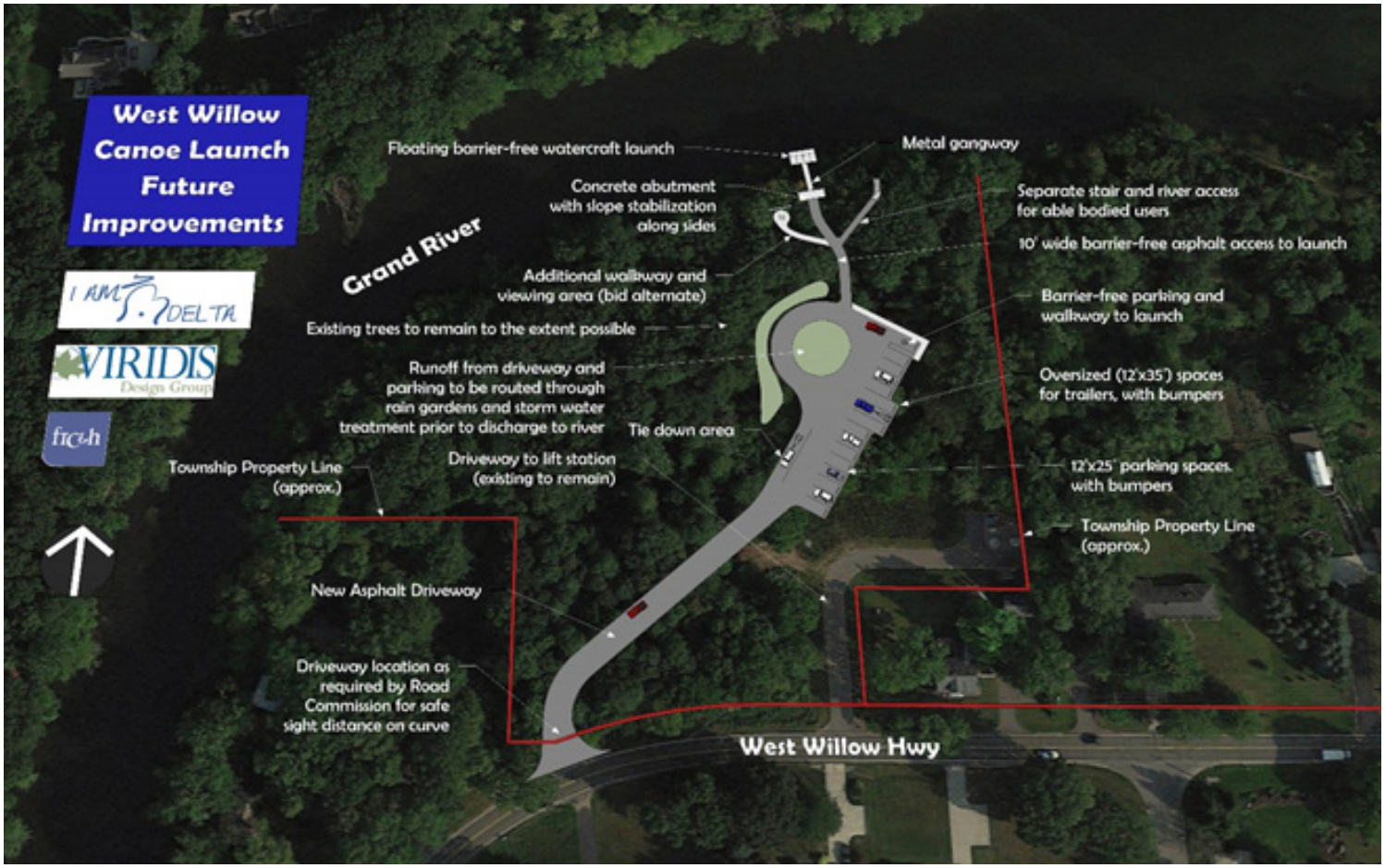
CLASSIFICATION: Class B

OWNERSHIP: Delta Township

ATTRIBUTES:

• Parking	1 handicap, 3 trailer, and 12 regular spaces
• Distance to River	150’
• Launch Type	Barrier-free, Steps
• Restrooms	No
• Drinking Water	No
• Picnic Tables	1
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: WEST WILLOW CANOE LAUNCH



ADDRESS: 6555 Willow Hwy, Grand Ledge, MI

COORDINATES: 42.757072 -84.709825

MILES FROM LAKE MICHIGAN: 140.4

DESIRED IMPROVEMENTS:

- Install toilets
- Provide drinking water
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: JAYCEE PARK

CLASSIFICATION: Class A

OWNERSHIP: City of Grand Ledge

ATTRIBUTES:

• Parking	100 spaces (paved), 5 trailer (gravel), 6 handicap (paved)
• Distance to River	90', 320'
• Launch Type	Beach, Dock, Barrier-free
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	12
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No






ACCESS SITE: JAYCEE PARK

ADDRESS: 525 E River St, Grand Ledge, MI

COORDINATES: 42.75055, -84.73975

MILES FROM LAKE MICHIGAN: 138.1

DESIRED IMPROVEMENTS:

- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: ISLAND PARK

CLASSIFICATION: Class B

OWNERSHIP: City of Grand Ledge

ATTRIBUTES:

• Parking	35’ paved
• Distance to River	100-250’
• Launch Type	Beach
• Restrooms	Flush
• Drinking Water	Yes
• Picnic Tables	1
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: ISLAND PARK

ADDRESS: 206 W River St, Grand Ledge, MI

COORDINATES: 42.755317, -84.746017

MILES FROM LAKE MICHIGAN: 137.6

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: FITZGERALD PARK

CLASSIFICATION: Class B

OWNERSHIP: Eaton County Parks

ATTRIBUTES:

• Parking	10 spaces (gravel)
• Distance to River	180-280’ up, 150-250’ down
• Launch Type	Dock, Bank
• Restrooms	Flush and Primitive (at park office)
• Drinking Water	Yes (at park office)
• Picnic Tables	Many throughout park
• Refuse Disposal	No
• Fee for Use	For vehicles entering park
• Camping	No

ACCESS SITE: FITZGERALD PARK

ADDRESS: 100 Fitzgerald Park Dr, Grand Ledge, MI

COORDINATES: 42.763206, -84.762625

MILES FROM LAKE MICHIGAN: 136.6

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Provide drinking water
- Improve streambank erosion control

ACCESS SITE: CHARLOTTE HIGHWAY

CLASSIFICATION: Class C

OWNERSHIP: Michigan Department of Natural Resources

ATTRIBUTES:

• Parking	8 spaces (gravel)
• Distance to River	50-150’
• Launch Type	Beach
• Restrooms	No
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	No
• Fee for Use	No
• Camping	No

ACCESS SITE: CHARLOTTE HIGHWAY

ADDRESS: Charlotte Hwy, Portland, MI

COORDINATES: 42.81527639, -84.8947129

MILES FROM LAKE MICHIGAN: 124.4

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Install kiosk/bulletin board
- Provide toilets
- Provide drinking water
- Provide picnic tables
- Improve streambank erosion control

ACCESS SITE: ERDMAN ROAD END

CLASSIFICATION: Class C

OWNERSHIP: Michigan Department of Natural Resources

ATTRIBUTES:

• Parking	6 spaces (gravel)
• Distance to River	50-100’
• Launch Type	Beach
• Restrooms	No
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	No
• Fee for Use	No
• Camping	No






ACCESS SITE: ERDMAN ROAD END

ADDRESS: Erdman Rd, Sunfield, MI

COORDINATES: 42.8143, -84.9361

MILES FROM LAKE MICHIGAN: 119.7

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: THOMPSON FIELD

CLASSIFICATION: Class B

OWNERSHIP: City of Portland

ATTRIBUTES:

• Parking	34 spaces (paved)
• Distance to River	130-360’
• Launch Type	Beach
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	6
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: THOMPSON FIELD

ADDRESS: Portland Riverwalk, Portland, MI

COORDINATES: 42.8672, -84.9098

MILES FROM LAKE MICHIGAN: 111.6

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Install toilets
- Provide drinking water
- Install boat storage/lockers
- Improve streambank erosion control

ACCESS SITE: PORTLAND MUNICIPAL DAM

CLASSIFICATION: Class B

OWNERSHIP: City of Portland

ATTRIBUTES:

• Parking	20 spaces (gravel)
• Distance to River	50’ up, 140-300’ down
• Launch Type	Beach, Beach
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	2
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No






ACCESS SITE: PORTLAND MUNICIPAL DAM

ADDRESS: Lyons Rd, Portland, MI

COORDINATES: 42.8892, -84.9308

MILES FROM LAKE MICHIGAN: 108.1

DESIRED IMPROVEMENTS:

- Improve parking facilities
- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Install toilets
- Provide drinking water
- Provide picnic tables
- Install boat storage/lockers
- Improve streambank erosion control

ACCESS SITE: WEBBER DAM FISHING ACCESS - EAST

CLASSIFICATION: Class C

OWNERSHIP: Consumers Energy

ATTRIBUTES:

- Parking 40 spaces (gravel)
- Distance to River 450-650’ up, 600-800’ down
- Launch Type Bank, Beach
- Restrooms Primitive
- Drinking Water No
- Picnic Tables No
- Refuse Disposal No
- Fee for Use No
- Camping No

ACCESS SITE: WEBBER DAM FISHING ACCESS - EAST

ADDRESS: Park Blvd, Lyons, MI

COORDINATES: 42.9532 -84.9025

MILES FROM LAKE MICHIGAN: 101.4

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: WEBBER DAM FISHING ACCESS - WEST

CLASSIFICATION: Class C

OWNERSHIP: Consumers Energy

ATTRIBUTES:

• Parking	20 spaces (gravel)
• Distance to River	300’ up, 1350’ down
• Launch Type	Ramp, Dock, Rocks
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	No
• Fee for Use	No
• Camping	No

ACCESS SITE: WEBBER DAM FISHING ACCESS - WEST

ADDRESS: 2999 Webber Rd, Lyons, MI

COORDINATES: 42.9532, -84.9025

MILES FROM LAKE MICHIGAN: 101.4

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Improve access to river (trail, path)
- Install kiosk/bulletin board
- Improve streambank erosion control

ACCESS SITE: TABOR STREET BOAT RAMP

CLASSIFICATION: Class B

OWNERSHIP: Department of Natural Resources

ATTRIBUTES:

• Parking	40 spaces (grass)
• Distance to River	100-200’
• Launch Type	Ramp, Beach
• Restrooms	No
• Drinking Water	No
• Picnic Tables	No
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	No

ACCESS SITE: TABOR STREET BOAT RAMP

ADDRESS: Tabor St, Lyons, MI

COORDINATES: 42.9776, -84.9417

MILES FROM LAKE MICHIGAN: 96.0

DESIRED IMPROVEMENTS:

- Install barrier-free launch
- Install kiosk/bulletin board
- Install toilets
- Provide picnic tables
- Improve streambank erosion control

ACCESS SITE: LYONS PUBLIC FISHING ACCESS

CLASSIFICATION: Class C

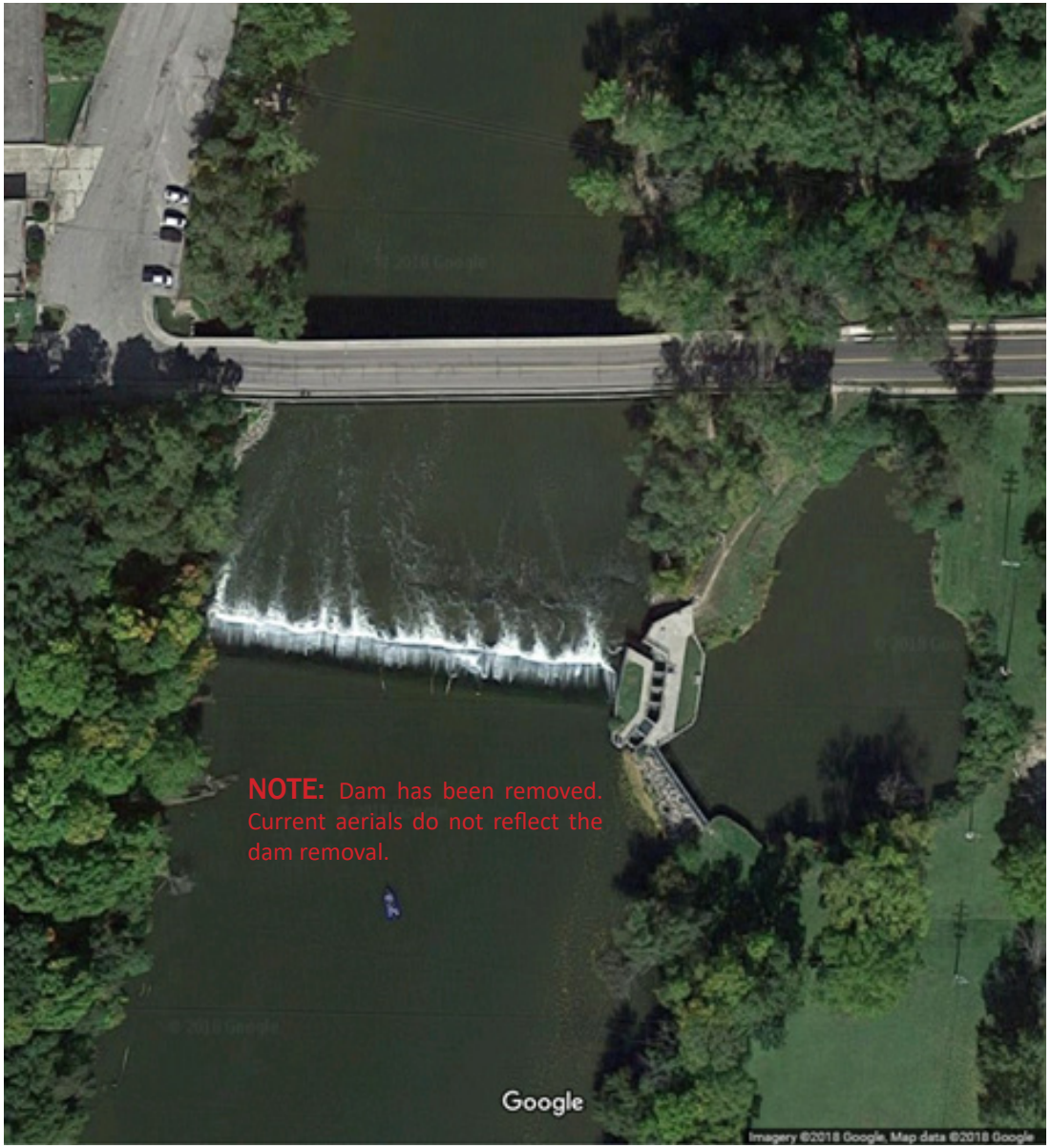
OWNERSHIP: Village of Lyons

ATTRIBUTES:

- Parking — 30 spaces (gravel)
- Distance to River — 250-400’ up, 425-800’ down
- Launch Type — Bank, Beach
- Restrooms — Primitive
- Drinking Water — No
- Picnic Tables — No
- Refuse Disposal — Barrels
- Fee for Use — No
- Camping — No

NOTE: This site previously served as the portage around the Lyons Dam. Due to the removal of the dam and its proximity to other quality access sites, Lyons Public Fishing Access is not recommended as a start/stop point and does not feature MGRWT signage. If rapids cannot be run safely, it can be used as a portage.

ACCESS SITE: LYONS PUBLIC FISHING ACCESS



ADDRESS: Bridge St, Lyons, MI

COORDINATES: 42.981953, -84.950044

MILES FROM LAKE MICHIGAN: 95.1

DESIRED IMPROVEMENTS:

ACCESS SITE: HAZEL DEVORE PARK

CLASSIFICATION: Class B

OWNERSHIP: Village of Lyons

ATTRIBUTES:

• Parking	30 spaces (gravel)
• Distance to River	200’
• Launch Type	Barrier-free
• Restrooms	Primitive
• Drinking Water	No
• Picnic Tables	Yes
• Refuse Disposal	Barrels
• Fee for Use	No
• Camping	8-10 rustic sites

ACCESS SITE: HAZEL DEVORE PARK

ADDRESS: 212 Water St, Lyons, MI

COORDINATES: 42.9841, -84.948

MILES FROM LAKE MICHIGAN: 94.9

DESIRED IMPROVEMENTS:

- Install kiosk/bulletin board
- Provide drinking water
- Improve streambank erosion control

WAYFINDING SIGNAGE

Except where otherwise noted, all of the above access sites are equipped with a 18”x 24” reflective aluminum sign featuring the water trail logo, municipal seal of the site owner, the mileage to Lake Michigan, mileage to the next access point, and the name of the location. However, the planning team identified multiple riverfront parks that, though lacking paddling facilities, could host signage to provide wayfinding information between gaps in access sites. These locations are labeled “Park,” indicating that the site features no paddling amenities, but its public ownership allows for sign posting.

One goal of this plan is to identify and install additional signage/mile markers at other public and privately owned riparian properties. A list of all currently installed signs is located in Appendix F.

“PARK” SIGNAGE

Frances Park
Ownership: City of Lansing
Coordinates: 42.717540, -84.593083

Riverpoint Park/Red Cedar River Confluence
Ownership: City of Lansing
Coordinates: 42.724769, -84.547947

Dietrich Park
Ownership: City of Lansing
Coordinates: 42.751231, -84.557470

Bogue Flats Recreation Area
Ownership: City of Portland
Coordinates: 42.879736, -84.901077

Park

Indicates a park with no paddling amenities, but public ownership allows for sign posting.

TRAIL ASSET MAINTENANCE REQUIREMENTS

Regular maintenance and upkeep of water trail access sites, signage, and adjacent park assets are crucially important to the success and sustainability of the trail. In the Middle Grand, all access sites and trail signs are located on public park property with existing, reliable, and routine maintenance provided by the access site owner. Appendix J details all 34 water trail assets with information on their owner/manager and the asset's maintenance requirements.

LEVEL OF MAINTENANCE STANDARDS

The following are a set of maintenance standards that provide optimal conditions for access points.

1. **Parking:** Parking lots should represent the carrying capacity of the site's particular characteristics—both historic and projected level of use. Lots should have barrier-free space accommodation/signage, resilient surface material or paving method (if paved, the material should be porous to allow stormwater infiltration), positive directional grading away from the river to grass strips for infiltration, and signs indicating hours of use or other public concerns for site use. For gravel lots, provide periodic grading to restore an even surface.

2. **Restroom facilities:** A permanent bathroom facility must pass all public health requirements for public use. They must also be barrier-free. Routine cleaning is the greatest challenge for restrooms and is an essential responsibility of the site owner.

3. **Port-a-johns:** The device supplier shall be on a routine maintenance schedule consistent with the level of use. A port-a-john is best located on a paved surface to avoid rutting and tilting from repeat servicing. Vandalism design elements are important here as these facilities are the most frequent public park target for misbehavior. Temporary restroom facilities should have barrier-free dimensions.

4. **Launch ramp:** Launch ramps should be designed, built and maintained (or retrofitted) at an acceptable grade (literature advises 8% or less) that would not require a handrail under a building code (access owners have the obligation to evaluate applicability of ADA standards for the entire site and adopt a plan of compliance). The surface, if hard, should have non-slip features for secure footing while manipulating water craft. The ramp should be clear of debris and routinely maintained. Post-flooding work is often required to remove slippery and defacing silt deposits off the ramp.

5. **Litter containers:** Trash is a common by-product of trail users who often plan picnicking before or after paddling outings. Access sites should have a routinely serviced trash container. Providing a recycling container that accepts materials processed at the nearest available recycling facilities is a potential upgrade for these sites. Site maintenance for litter should be as frequent as all park maintenance activity in the owners' parks system. The presence of litter, when not addressed routinely, sets a low expectation standard for trail users inclined to disregard other aspects of site care and is an affront to the "Leave-no-trace" ethic.

Site Upkeep

Increasing usage and enjoyment of the trail requires stakeholders to maintain a high standard of service. Trash barrels, restroom facilities, lawns, and other assets must be routinely maintained to attract users and keep them returning.

6. **Picnic facilities and benches:** These experience-enhancement site improvements are encouraged, along with the obligation to maintain these facilities in good condition and provide cleaning as part of their routine maintenance.

7. **Vegetation:** The plants, trees, and grasses require scheduled maintenance activity whether it is mowing, pruning, invasive species management, or other botanical needs for a particular site's qualities. Native plantings and grasses are encouraged as demonstrations to the public of how natural riverside vegetation can be planted and maintained. Interpretive signs for this particular aspect of site maintenance rises to a Level of Maintenance standard for this section. The website will offer suggestions for compatible native vegetation enhancements and guides to locally available plant providers and programs.

8. **Signs:** While sign components, colors, and placement relative to the sun are design considerations that may alleviate premature maintenance, signs do age. A tired, worn, vandalized, or even illegible sign is a must-replace item for maintenance providers so that the sign's original intent is upheld, and to demonstrate that the access site is well-attended to.

9. **Vandalism and Repairs:** Site vandalism starts with appropriate designs that deter vandalism. The reality of vandalism or site misuse is to expect it and budget for it. The Level of Maintenance standard here is the presence of a self-insurance or a sinking fund as part of an owner's operational budget to address every level of impact due to vandalism and repair needs. Another standard to consider is the need to address property destruction within the shortest possible time frame.

Trash collection between access sites is also important to maintain the trail and ensure user enjoyment. Volunteer groups and events, like the Lansing Earth Project, "Adopt-a-River," and others hold many clean-ups throughout the paddling season, and monitor and respond to areas suffering from higher levels of littering.

River Clean Ups

Volunteers provide much of the water trail's non-access site maintenance needs. Lansing Earth, a partnership between a local outfitter and watershed group, organize regular river clean ups in high need areas of the Grand and Red Cedar Rivers.

Part 4

Opportunities, Challenges, & General Considerations

OPPORTUNITIES, CHALLENGES, & GENERAL CONSIDERATIONS

Existing access site infrastructure and management practices in the Middle Grand River already provide paddlers of all skill levels with safe, accessible options for paddling trips. As detailed above, many access sites are currently in place and jurisdictions have already and will continue to improve on available amenities. This plan seeks to build upon this strength by reinforcing existing relationships between stakeholders and building a framework for a collaborative approach to water recreation planning and emergency response in the Middle Grand River. As such, the following section details the opportunities and challenges identified during plan development that deserve future consideration. The planning team recognizes that official water trail designation may increase the political will and interest in pursuing these improvements and addressing concerns.

As evidenced by current paddlesport participation on the river, use and designation is not dependent on the implementation of these recommendations. Instead, they should be considered as methods to enhance the water trail experience moving forward.

Unlock Entrepreneurial Potential

Paddlesport outfitters and guides are becoming regular fixtures throughout the state. Water trails increase visibility of paddlesports and river traffic, and entrepreneurs respond by opening new businesses along the river corridor.

OPPORTUNITIES

POTENTIAL ACCESS SITES TO DEVELOP

- **Towner Road:** Towner Road lies within the MDNR's Portland State Game Area. It features parking but has a steep bank where paddlecraft can launch. Water trail coordinators should work with MDNR to discuss the possibility of developing the Towner Road site as an official launch for users and first responders.

- **Jones Road:** The Jones Road bridge crosses the Grand River between Grand Ledge and the Portland State Game Area. Paddlers have used the land near the bridge as an access site for decades, crossing private property to do so. There is an opportunity to work with public and private ownership on granting an easement for legal river access.

LEVERAGE THE WATER TRAIL FOR ECONOMIC DEVELOPMENT

Non-motorized boating is a rapidly growing industry, presenting the opportunity for water trail communities to attract new businesses, tourists, and talent. Outfitters, hotels, and restaurants are obvious beneficiaries of greater trail participation, but gas stations, campgrounds, and other merchants near water trails also see direct benefits. Michigan's outdoor recreation economy generates $18.7 billion in consumer spending, creates 194,000 jobs, $5.5 billion in wages and salaries, and $1.4 billion in state and local tax revenue (West Michigan Trail Final Reports-WMEAC). Middle Grand River Water Trail stakeholders should market their participation in the trail and leverage the resource to add return to existing businesses and create new markets.

ENCOURAGE ENTREPRENEURSHIP

In response to market demand, paddlesports, outfitters, and tour guides are becoming regular fixtures in communities all over Michigan. The Department of Natural Resources and local municipalities have contracted with local entrepreneurs to provide paddlesport equipment rentals in state and local parks across the state. In some communities, entrepreneurs are offering both small- and large-group paddling tours.

A 2015 report from the River Management Society summarized notable findings on the economic impact of water trails in three different communities in the United States. According to the report, *"towns that already have dining, lodging and rental services are more likely to see an increase in paddlesports tourism when they advertise and promote their water trail, as contrasted with communities that market their water trail, but do not provide standard amenities for paddlers."* The report also identifies the key trail amenities that tend to successfully attract new audiences and generate economic activity:

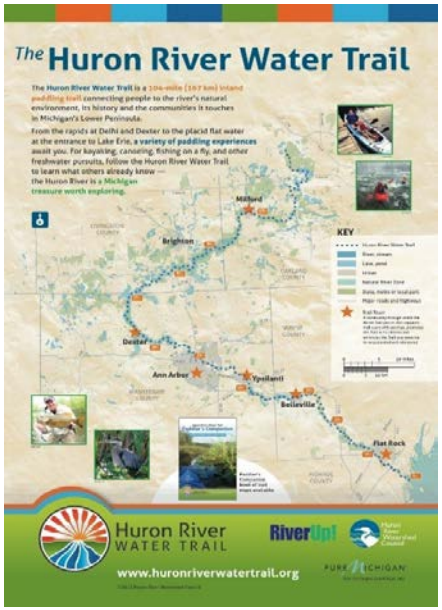
- Access to the water
- Outfitters: rental and shuttling services
- Lodging: camping, bed and breakfasts
- Dining: restaurants, breweries, grocery stores
- Integrated recreation: hiking and biking paths
- Activities: museums, interpretive centers, and other activities
- Proximity: neighboring towns with similar amenities

Bring Water Users to Downtown Businesses

A Huron River Water Trail study found that a destination paddler on a multiple day water trail trip spent an average of $88 in a community.

Case Study: Huron River

The nationally designated Huron River Water Trail is estimated to produce $53.5M in economic output ($29.9M direct + $23.6M indirect) annually.



The report also notes that guides, outfitters, lodging, and food are typically the top visitor expenditures for trail tourists. Therefore, communities with lodging, dining, and outfitter/rental services already in place can expect to experience a more substantial economic benefit.

The Huron River Watershed Council teamed up with Grand Valley State University to measure the river and river trail impact on the local economy ("Huron River Report", Huron River Watershed Council, Fall 2017*). The Huron River and Huron River National Water Trail are conservatively estimated to have the following economic impact on the five-county region in which they are located:

- $53.5 million in economic output ($29.9M direct + $23.6M indirect) annually
- $150 million annual economic value of ecosystem services provided by the Huron River
- $3.8 billion total economic value of services provided by the Huron River
- 2.6 million visitor days

It is important to talk with and establish good relationships with your local business community throughout the development and implementation of the water trail. These leaders can be instrumental in promoting the water trail and can help inform when and how to hold a signature water trail event. Communities should also market the water trail as a reason to establish or expand businesses in their jurisdiction.

**To read the executive summary and full report, visit www.hrwc.org.*

ECONOMIC BENEFITS

of Water Trails

By the numbers:

$36 Billion
National economic impact of paddle-based recreation

$140 Million
Impact of paddle sport industry in Michigan

35k
Mid-West jobs supported by paddle sports

41%
Of paddlers have incomes greater than $100,000

5%
Outdoor recreation economy growth during the 2005-2011 recession

Paddle sports on the rise
3 million more Americans paddled in 2014 than 2010, taking **215.8 million** paddling trips.

Nationally, water sports (motorized and non-motorized) contributed $4.8 billion in Local and State taxes in 2012

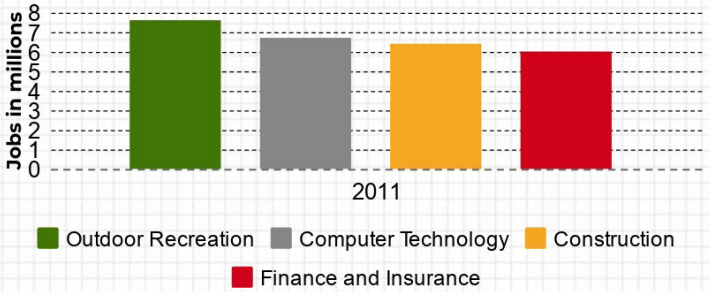
Americans spend more on water sports gear ($14B) than movie tickets ($11B)

85%
Attract Employees and Employers.
85% of Americans consider high-quality park and recreation amenities as an important factor when they are choosing a new place to live

Michigan Water Trails

- The average paddler will drive roughly 79 miles a day for a day trip and 117 miles for an overnight trip, boosting the economies of the communities they paddle through.
- West Michigan Water Trail users spend between $50 per day (day-trippers) and $100 per day (staying overnight).
- The Huron River National Water Trail contributes $53.5 million in economic output ($23.9M direct + $23.6M indirect).

Outdoor Recreation employs more people than Construction



7.6 million jobs

Sources:
2015 Special Report on Paddle Sports. The Outdoor Foundation. 2015.
Michigan BLUE ECONOMY. Michigan Economic Center. Grand Valley State University.
Huron River Water Trail Economic Impact Analysis by M. King, Office of Economic and Community Development, Washtenaw County, for the Huron River Watershed Council (December, 2013)
West Michigan Water Trail Final Report", WMEAC, et al, 2006
The latest trends in outdoor recreation. Forest History Today. Spring, 4-10 Cordell, K. (2008).
NRPA. Americans Engagement with Parks Survey. 2017

TRI-COUNTY
regional planning commission

WAYFINDING SIGNAGE

Currently, all access sites in the Middle Grand are marked with a 24 x 18 inch reflective aluminum sign (pictured right). These branded signs define the water trail, help users orient themselves and share their location with first responders, and are the best way to communicate trail information to users. They should be installed at more locations, particularly bridges.

There are 44 bridges over the Middle Grand River Water Trail, each representing an opportunity to provide users with additional wayfinding information. It is recommended that communities and the water trail coordinators work with bridge owners to prioritize and install signage on bridges where possible. Locations, mileage, and ownership of each bridge, as well as a bridge sign template, are available in the Appendices.

It is also important that existing land-based signs are maintained, replaced when damaged, and expanded to include new access points as they develop. An example of this recommended signage and the distinction between labels is located in Appendix H.

WAYFINDING

Signs at access sites and bridge crossings can help paddlers keep track of their location on the river. Not only does it allow users to orient themselves, it helps them communicate that location to first responders in an emergency.

FISHING

Anglers know the Grand River as one of the most productive fisheries in Mid-Michigan and as a top steel-head destination in the state. Water quality in the river has greatly improved during the last forty years, and the fish have responded. Walleye, small and large-mouth bass, panfish, catfish, northern pike and salmon have strong populations and remain a draw to the state's many sportspeople.

The water trail provides increased river access for paddlers, power-boaters, and shore-anglers alike. Access points can be outfitted with powerboat launches, fishing docks, and trash and restroom amenities that encourage increased use from all types of anglers and the economic boost they bring to river towns.

Fishing is a popular sport that cannot be overlooked during water trail development and operation. Michigan's angler participation rated fifth in the nation with 1.1 million licensed anglers in 2011, and they spurred the state's economy by spending $2.4 billion in trip related expenses and equipment. Nation-wide, fishing activity generates $2.36 billion towards state and local taxes. Businesses — such as outfitters, bait shops, and guides — follow this investment, opening in communities where the sport thrives.

Water trails also cater to the increasing popularity of kayak fishing. Specialized fishing kayaks are equipped with open tops, stable bottoms, rod holders, and even live wells. Compared to traditional power boats, they offer significantly lower maintenance, purchase costs, and ease of transport, contributing to their popularity. They've made a splash on the sport, accounting for 5% of all fishing outings in 2016, up from 3.6% from 2013. This translates to 44 million kayak fishing trips a year, and the amenities and access provided by the water trail encourage greater participation in the growing sport.

Communities should market water trail amenities to the fishing and kayak fishing communities and consider including fishing amenities to access site design.

The Grand Supports a Variety of Species and Fishing Methods

From children targeting bluegill with worm and bobber along the banks, boaters trolling the reservoirs for walleye, to fly-fishers casting for trophy steelhead, the Grand offers something for all types of fishing methods and species targeting.

MOTORIZED WATERCRAFT

The water trail can also attract non-fishing power boaters. Pleasure cruising pontoons, ski boats, and personal watercraft are popular in the reservoirs and deeper sections of the Middle Grand River. These users also benefit from the increased access, amenities, hazard identification, and emergency response framework provided by a water trail, and their support, input and participation is valuable.

With Michigan's abundance of rivers, inland lakes, and coastal shoreline, it's no surprise that boating is a big industry in the state. In 2012, Michiganders spent $3.2 billion on boating related expenses, supported nearly 60,000 boating industry jobs, and ranked 3rd nationally for the number of registered boats. There is a regional component here as well: Triton Industries, makers of industry leading Manitou Pontoon Boats, is located two miles north of the river in Lansing, and the Lansing Boat Club has 53 boat slips available for rent to its members. The Michigan Princess, a replica of a 19th century steam boat, seats 450 and provides cruises for the public, as well as entertainment and event space on the Grand River upstream of Lansing's Moore's Park. There is high demand for a variety of water-centric experiences in the Middle Grand River, and the water trail can expand the opportunities to participate.

Pleasure Cruising

Paddling is popular on the Middle Grand River, but so are other forms of boating. Pontoons, personal watercraft, rowing shells, and even a 450-person river boat provide recreation and river experiences for many on the Grand.

EDUCATIONAL OPPORTUNITIES

(from "Michigan Water Trails Manual", LIAA & CZM, April 2017)

Educational opportunities should be included, not only for skill development, but also for environmental, conservation, and historical interpretation to enhance user experience. Stewardship and programming activities will help keep the community invested and involved in the water trail and its future. Often, these efforts will require cooperation with other community stakeholders and waterbody advocates. For example, a watershed council could help support educational paddles related to invasive species, water quality, and environmental protection. The local school district could help support youth paddling days, and the Coast Guard could help support paddle safety classes.

Kiosks at access sites can also serve dual purposes. In addition to providing business directories, emergency contacts, and wayfinding information, kiosks can illustrate the environmental, cultural, and historical significance of the area and lessons on river stewardship.

PROGRAMMED EXPERIENCES

There are also opportunities to complement existing programmed experiences with the water trail. The Middle Grand River flows through communities that provide educational opportunities to the public, many of which are located near the river and existing networks of land trails.

Two examples are Dimondale and Lansing. Founded on a bend of the Grand River in the mid-1800's, the Village of Dimondale's rich history is evident while experiencing the Dimondale Historical Walking Tour. Walkers can keep track of the distance and program by following the Discover Dimondale logo, scan a QR code to populate history about nearby buildings and homes, or access an audio tour on the website. Water trail users can easily paddle into Dimondale, take the walking tour, and then continue down the river. In Lansing, the Impression 5 Science Center is located on the river, and their newest exhibit explores water dynamics with interactive activities. Families of paddlers can enhance their trips by learning about water science at Impression 5 or explore the region's automotive history at the neighboring R.E. Old's Transportation Museum. Both sites are located on Lansing's network of riverside hiking and biking trails that lead to Potter Park Zoo, Michigan State University, and downtown businesses and attractions.

Communities should look for ways to complement their land/water amenities and experiences by promoting them to both audiences. As water trail users become aware of the activities available to them in town and water trail promotion attracts the participation of downtown visitors, traffic to all community amenities should increase.

River-Side Education

Kiosks, museums, walking tours, and other programmed experiences near the river enhance user experience and increase community engagement.

FITNESS

Paddling activities are not just for recreation. The health and fitness benefit is another one of its attractions. Michigan was named the 10th most obese state in the country, according to the eighth annual report, F as in Fat: How Obesity Threatens America's Future 2011, a report from the Trust for America's Health and the Robert Wood Johnson Foundation. Michigan's adult obesity rate is 30.5% and getting people outdoors and on the water is one way to mitigate this problem. Communities should promote water trail usage as a way to lead a healthy lifestyle.

CHALLENGES

Some of the challenges to Middle Grand River Water Trail development or use are currently known, physical structures that could be removed or altered to strengthen user enjoyment. Others are institutional, such as private property rights and regulatory considerations that stakeholders should keep in mind during the ongoing operation of the water trail. Others are natural and unpredictable, like logjams and safety concerns. Recommendations on how to approach these challenges are addressed in this section of the plan.

SAFETY

Safety First

Water safety is paramount. Educate water trail users on PFDs, self-rescue, and how to communicate their location with safety personnel in case of emergency.

A water trail presents dangers that can result in injury or death, with drowning being the leading killer in paddling accidents. For this reason, safety must continue to be the primary consideration for water trail stakeholders and users. Trail designation and promotional efforts are likely to increase the number of new, less experienced users on the water, and stakeholders must be prepared to prevent or respond to increased incidents.

Paddler education is a powerful tool in accident prevention and it is vital that users incorporate safety into their activity plans. While paddlers will be using the trail at their own risk, injury or loss of life are often avoidable by planning ahead and being prepared. Educational resources should be made available to users of the trail, and programs like the Coast Guard Auxiliary safety trainings should be promoted. Other lifesaving tools, such as developing “float plans,” should be promoted as standard practice. Programs like these are often accompanied by brochures and other forms of media which, along with emergency contact information, could easily be incorporated into informational kiosks and paddling guidebooks. Local liveries can also help to promote safe practices on the water trail.

When accidents do happen, it’s crucial that emergency personnel know where they can enter and exit the trail during first response. The planning team involved police and emergency response personnel early in the development of this plan, and they must continue to be involved as trail amenities change or grow. They must be kept aware of the route of the trail, location of access sites and hazards, and be given up-to-date maps and GPS coordinates of trail features.

Currently, all access sites and portages are marked, which, along with the digital trail map, helps users orient themselves and communicate their location to first responders. However, there are gaps between access points that inhibit rescue response times. It’s important to identify alternative emergency-access points where first responders can reach users in need.

Paddling amenities are not a prerequisite to installing signage. Currently, multiple public parks are equipped with wayfinding signs despite not providing official access. These signs will still assist in wayfinding and indicate an emergency exit point. Water trail coordinators should work with private land owners and businesses to identify additional signage locations to help fill the information gap between access sites.

It will also be important to work with local management agencies, liveries, and paddlers to help identify dangerous conditions, hazards, and areas where paddling should be limited. It is recommended that local officials work with paddling and environmental groups in developing "ambassador programs" in which local volunteers monitor the river for safety, as well as opportunities for recreation and interpretation. Ambassadors should paddle sections of the river at least three times a year and make general observations (and take photos as necessary) to document the conditions of the water trail, trash, signs, woody debris, water levels and potential hazards. All the information would then be noted and cataloged with the management entity.

KNOWN PHYSICAL HAZARDS TO ADDRESS

"SWEEPERS" AND "STRAINERS"

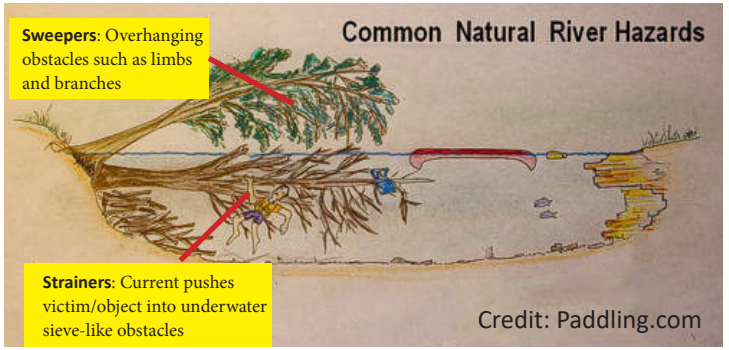
"Sweepers" and "strainers" are terms used to describe over-hanging and underwater sieve-like obstructions in the river that allow water, but not people or boats, to pass through. Branches, logs, and debris can collect on bridge pylons or logjams, causing a safety concern as currents can trap paddlers against these objects. Some strainers are created by tree-falls after storms and are difficult to predict. Others, as identified below, are perennial "problem areas" that should be addressed. Water trail coordinators must work with local paddlers and paddling clubs to continually monitor and communicate the safety and status of river passage.

Private Bridge


MLK Railroad Bridge

- **Private Bridge:** a privately owned bridge is located on the river four tenths of a mile downstream of the Bunker Road Landing. The bridge is unused and roped off, but logs can collect at the base of the bridge pylons, creating barriers to passage and safety concerns. Water trail stakeholders should explore options to remove logjams with volunteers or work with bridge owners to remove the bridge if there is no future plan to utilize it.

- **Norfolk Southern Railroad Bridge:** Logjams often collect at the base of this bridge, posing a barrier to safe passage. Water trail coordinators and stakeholders should work with bridge owners, volunteers, and regulators to develop a plan for maintaining passage and removing the accumulation of logs in a safe, legal manner.



DAMS

There are seven dams in the Middle Grand River that are remnants of an earlier time: Smithville (Hamlin Twp), State Street (Eaton Rapids), Moores (Lansing), North Lansing, (Lansing), Grand Ledge (Grand Ledge), Portland (Portland), and Webber (Lyons Twp). There are also failed or removed dams in Eaton Rapids, Dimondale, Delta Mills, Wagar, and Lyons, that still pose a challenge to paddlers at various flow levels in the river.

This Water Trail Development Plan calls for these challenges to be addressed such that water trail users may safely and conveniently pass. It is recognized that dam removal is a controversial topic, not only because of the expense of dam removal but many individuals enjoy the lake-like environment created by the dam impoundments.

Dams are intrinsically artificial and drastically modify the natural environment. In general, dam removal is the preferred option with benefits beyond the paddling community. Dams fragment the aquatic environment, meaning that many species are unable to pass from one side to the other resulting in a diminished gene pool. This can lead to extirpation (elimination) of some species within the fragments. Dams can also increase the size of the floodplain, resulting in occasional property damage and increasing flood insurance costs to property owners.

Another option to mitigate these issues would be to modify the dams in a way that allows fish and watercraft passage but maintains most of the impoundment.

If these options cannot be achieved, for whatever reason, the third option is to provide a safe, convenient, and clearly marked portage route around the dams.

Smithville Dam: An adequate portage path exists on the river right side. More formal take-out and put-in points are desirable to reduce environmental damage that frequent use can cause. The dam is no longer used for power generation.

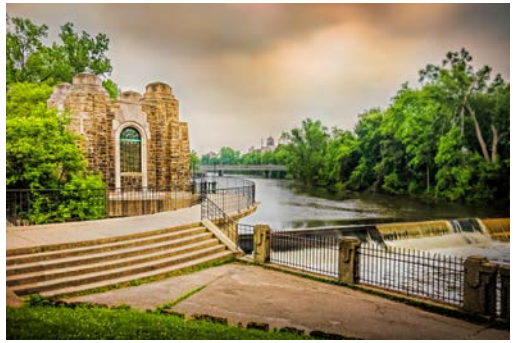
State Street Dam: No portage path exists. Paddlers need to exit the river at McArthur Park (on the river right), then take a mile-long portage to Mill Pointe Park for put-in. A formal take-out and put-in with a short distance between these two points is highly desirable, if the dam cannot be removed. The dam is no longer used for power generation.

Eaton Rapids Sanitary Dam: The west dam has been removed and a designed rapids was constructed in its place that provides for fish passage. Canoe/kayak passage is possible if the water level is high enough. If not, designed take-out and put-in facilities are available for a good short portage. The east dam remains, but removal is low priority since passage to the west is possible.

Dimondale Dam site: The dam has been removed with rock weirs left in its place in the shape of a big W. Fish passage is provided and canoe/kayak passage is possible if the water level is high enough. If not, a floating ramp is available for take-out with a short portage to an acceptable put-in point. An improved portage trail and engineered put-in are desirable.

Dam Safety

Dams pose a risk to paddlers and have caused of a number of deaths on the Middle Grand River. Dam owners, municipalities, and water trail coordinators must explore all options to mitigate safety concerns.



Fish Passage

Moores Dam in Lansing provides no fish passage, cutting off roughly 100 miles of the main stem of the Grand River from spawning salmon and trout and other aquatic life.

Moores Dam: The Moores Dam creates a significant impoundment that is used for powerboats, rowing shells, and water skiers. The dam is no longer used for electric generation. A fixed-elevation dock is available for take-out but is not well suited for kayaks. A well-developed portage trail leads to several potential put-in points, including a floating ramp. Improved take-out facilities are desired.

North Lansing Dam: The dam is no longer used for electric generation. A fish ladder is in place for anadromous fish, but passage for other aquatic life is precluded. The impoundment has been receiving increased use in recent years with canoe/kayak livery and riverboat operations. The dam causes higher flood potential resulting in increasingly higher flood insurance premiums. Dam removal is being discussed, but the impact on existing uses cannot yet be predicted. There is an existing well-developed portage trail, but the take-out and put-in facilities need improvement.

Delta Mills: The remnants of the dam create a small riffle that most paddlers negotiate without problem, but some inexperienced paddlers may have issues. Fish passage is not a concern. A newly revised access site is available immediately downstream of the dam site. No further improvements are envisioned.

Grand Ledge Dam: The dam is no longer used for electric generation. A fish ladder is in place for anadromous fish, but passage for other aquatic life is precluded. A fixed-elevation dock is available for take-out but is not well suited for kayaks, and is located too close to the dam for inexperienced paddlers to negotiate safely. The portage trail is rudimental, but the put-in site is functional. Improvements to the portage are desirable.

Portland Dam: The dam is currently generating electricity. A fish ladder is in place for anadromous fish, but passage for other aquatic life is precluded. A rudimental boat launch is available upstream for small powerboats and paddle craft. The portage path is well defined but may be difficult for some craft. The put-in site is functional, but improvements to the portage are desirable.

Webber Dam: The dam is currently generating electricity. A fish ladder is in place for anadromous fish, but passage for other aquatic life is precluded. Portage trails are provided on both sides of the river. The take-out on river left (west) is a boat launch designed for small powerboats. The portage trail is quite long and difficult, and the put-in is rocky but functional. The take-out on river right (east) is a gravel beach. Improvements to the portages are desirable.

Wagar Dam site: The dam is breached and is no longer used for electric generation. This site is dangerous for inexperienced paddlers. Under most water levels the breach may be run by experienced paddlers, but others must portage on a small island near the river right bank. There exists no established portage. Engineered removal of the remainder of the dam is desirable. Until that can be accomplished, a formal portage should be established.

Lyons Dam site: The dam has been removed and replaced with rock placements that provide a channel for small boat passage. Fish passage is provided and canoe/kayak passage is possible if the water level is high enough. The fish ladder has been eliminated. The remnants of a portage path remain from prior to dam removal and could be used if water levels are too low for running the rapids. The portage should be re-established given the new water levels.

CAMPING AMENITIES

Few camping sites exist for through-paddlers on the Middle Grand River. To accommodate through-paddlers, it would be desirable to have camping sites available no more than 8 hours apart, or every 25 to 30 miles.

Most city, county, and township parks have rules against camping, and usually close parks to all uses after dark. To accommodate through-paddlers, it would be desirable to grant special permission to use "leave-no-trace" camping techniques in these parks upon timely applications. Many Middle Grand jurisdictions grant the Parks Director the ability to offer special use waivers. Some have expressed interest in allowing through-paddlers to call ahead, notify staff of their intended arrival, and request permission for overnight camping. It is recommended that all access site owners participating in the water trail adopt similar procedures to grant leave-no-trace camping.

To accommodate through-paddlers using local motels for lodging, it would also be desirable to provide gear lockers and canoe/kayak racks at access sites for secure overnight storage.

Through-Paddlers

Many paddlers enjoy multi-day, overnight trips involving riverside camping. Local ordinances and amenities could be altered to accommodate these through-paddlers.

PADDLECRAFT OWNERSHIP

Unlike paved hiking trails that can be used by people of all abilities and without special equipment, water trails require a water craft. For users who do not own their own, outfitters and parks departments provide affordable options for paddlecraft rental throughout the Middle Grand River, and more outfitters could be expected as the popularity of the trail grows in the region. A handful of rental options along the Middle Grand River are listed below. It is recommended that water trail coordinators and stakeholders promote existing rental options, launch public liveries, and/or encourage commercial operations in their jurisdiction.

Rental Options

Businesses and governments within the Middle Grand River provide affordable rental options to the public.

City of Eaton Rapids

Mill Pointe Park Kayak & Tube Rentals

Mill Street

Eaton Rapids, MI 48827

(517) 719-0287

Dimondale Canoe & Kayak Rental

9995 Billwood Hwy

Dimondale, MI 48821

(517) 235-7091

Ingham County Parks

Burchfield Park Canoe & Kayak Rentals

881 Grovenburg Road

Holt, MI 48842

(517)-676-2233

Parks@Ingham.org

Grand Kayak & Canoe Rental

Steve Sand

517 490 0820

13920 Stat Road

Grand Ledge, MI 48837

River Town Adventures

Canoe Kayak & Bike Rentals

325 City Market Drive

Lansing, MI 48912

(517)-253-7523

RiverTownMI@gmail.com

INVASIVE SPECIES

Like all waterbodies in Michigan, the Grand River faces the threat of invasive species, both in the water and along the river banks. Many pathways exist for the spread and proliferation of invasive species, and educating paddlers and the public along the Grand River about these issues and preventative behavior is important.

It is recommended that the following actions be displayed at boat launches, public kiosks, and in water trail promotional materials along the water trail:

- CLEAN boats, trailers and equipment.
- DRAIN live wells, bilges and all water.
- DRY boats and equipment.
- DISPOSE of unwanted bait in the trash.
- REMOVE plants, seeds, and mud from boots, pets, vehicles and gear.
- Do not launch a watercraft or place a trailer in the water if aquatic plants are attached.
- Do not release unused bait or aquarium plants, fish, or animals.
- Do not transport water over land in bilges and live wells.

Unwelcome Water Trail Users

All waterbodies in Michigan face the threat of invasive species. Kiosks and educational programs can help increase public awareness of these challenges and teach practices that limit the further spread of invasives.

RIPPLE
REDUCE INVASIVE
PET & PLANT ESCAPES

ECOLOGICAL THREATS

Michigan's waterways face many ecological threats, some of which can be exacerbated by increased recreational use. Among these are streambank erosion, littering, and wildlife harassment. Again, educating users at kiosks is important, but site design and maintenance can also help protect the natural world from human use.

It is possible to limit both purposeful and accidental littering by installing and regularly emptying trash receptacles at access sites. Similarly, properly spaced restrooms along the trail will reduce the human impact of the riparian landscape. Even docks and launches can be tools to fight streambank erosion, as high-traffic beach landings can be eroded by weather, high water, and boat launchings. By providing facilities, people will be less tempted to engage in undesirable behaviors.

LAND USE

The connection between land use and water quality may not be obvious to everyone, but what happens on the land greatly determines the quality of the water. Land uses influence the enjoyability of water trail experiences in numerous other ways as well.

Many paddlers expect to see wilderness and wildlife during their excursions, but urban paddling can also be a very enjoyable experience. Seeing buildings and bridges from the water provides a different and rewarding perspective. However, few people desire to paddle through junkyards and piles of debris and garbage. Therefore, land use planners should consider the view from the river while making zoning and site plan decisions. For example, placing refuse collection facilities on the banks of the river, while a widespread practice, should be avoided in the future. Not only are the facilities unsightly, the potential for refuse blowing or washing into the river is a high risk.

Storm drainage is a critical issue for any developed area. From colonial times to recent decades, the volume and rate of discharge of storm water was not considered important. Now we realize that these are critical factors to consider in storm water management to protect our water resources and structures near stream banks. The rate of discharge largely determines the velocity of the stream flow and thus the amount of erosion that occurs. The volume of storm water determines the length of time that erosive velocities eat away at the stream banks. Stream bank erosion not only degrades the quality of the water, but actually changes the shape of the stream to a less desirable configuration from a fisheries, paddling, and aesthetic point of view.

New drainage systems must be designed to properly manage flow rate and volume, and existing systems should be retrofitted to modern standards.

Contamination of our waters by fecal material, either human or animal, threatens the health of those using the water. Water trail users are concerned when health agencies issue warnings about high bacterial counts and may be reluctant to enjoy the resources. The Michigan Department of Environmental Quality has determined that the Middle Grand River and Red Cedar River do not meet the state's water quality standard for indicator bacteria and recommends the following actions to address these common pollutant sources:

PETS AND WILDLIFE

- Engage in outreach to educate residents on backyard conservation, which includes proper pet waste management, rain gardens, rain barrels, improving storm water infiltration and storage, and discouragement of congregating wildlife.
- Adopt pet waste ordinances where none exist, and enforce and educate where ordinances are in place.
- Discourage the congregation of geese in riparian areas using tall and dense vegetation where possible. This diminishes short (mowed) green grass cover, which geese prefer for foraging because it provides an unobstructed view. The goal is to displace foraging geese by creating an unfavorable environment. Shoreline buffers can be incorporated into municipal landscaping plans for public lands and adopted on private lands voluntarily or through zoning code requirements.

Bank Erosion

Stormwater runoff from urban areas can contribute to channel erosion, sediment loading, and negatively impact the river for people and aquatic life. Water trails benefit from proper land use decisions and stormwater management.

- Wetland restoration in areas where historic wetlands have been lost and would be beneficial for removing E. coli from runoff.
- Installation of riparian vegetated buffer strips to increase infiltration of storm water.

ILLICIT CONNECTIONS

- Educate residents on the signs that their residence may have improper connections to a sanitary or storm sewer or a surface water body.
- Educate residents on the importance of clean water to human health and the dangers of surface water contamination.
- Create an anonymous reporting and response system to allow residents to report potential or suspected illicit connections to surface waters.

ON-SITE SEWAGE DISPOSAL SYSTEMS (OSDS)

- Focus effort by health departments and other agencies on locating and addressing failing OSDS. This effort could include the adoption of a time-of-sale OSDS inspection program in Livingston, Jackson, Eaton, and Clinton Counties.
- Educate residents on signs of OSDS failures (particularly in riparian areas) and aspects of local sanitary code that are designed to protect surface water from contamination.

LIVESTOCK AND AGRICULTURE

- Use of water table management (controlled drainage) where manure is applied to artificially drained land.
- Wetland restoration in areas where historic wetlands have been lost and would be beneficial for removing E. coli from runoff.
- Livestock exclusion from riparian areas and providing vegetated buffers between pasture and water.
- Installation of riparian vegetated buffer strips in agricultural areas that are not artificially drained (tiled).
- Outreach to agricultural community to encourage becoming verified by the Michigan Agriculture Environmental Assurance Program and/or the use of best management practices on manure storage, composting, and application and the development of nutrient management plans.

COMBINED SEWER OVERFLOWS

- Elimination of remaining combined sewer overflows to prevent raw sewage discharges into the Grand and Red Cedar Rivers.

Picking Up After Pets

Pet waste contributes E. coli and other pathogens/bacteria to water ways. Local ordinances, signs, and disposal options can encourage proper waste disposal and a healthy watershed.

GENERAL CONSIDERATIONS

Respect Private Ownership

Since much of the land surrounding the Middle Grand is privately owned, communities should understand riparian property owner rights to reduce conflict between users and land owners.

Communities and other water trail stakeholders may have many questions during the development and management of a water trail. If someone gets hurt, is the municipality liable? What is the best way to address logjams? What about riparian property owners' rights?

This section is intended to standardize the approach and provide guidance regarding these and other trail considerations. It houses relevant excerpts from accepted guidance documents, manuals, and other literature.

REGULATORY IMPLICATIONS

(from "Michigan Water Trails Manual", LIAA & CZM, April 2017)

THE PUBLIC TRUST

Navigable waterways within the state of Michigan are managed for public benefit under the Public Trust Doctrine. The idea of a Public Trust Doctrine dates back over 2,000 years to the Roman Empire and states that the public has a right to use common resources, such as open water and its surrounding shoreline. The underlying goal of the doctrine is to ensure that commonly-held public resources are protected for public use.

When applied to a water trail, the public has a right to use the waters of the Great Lakes (and Lake St. Clair) for recreation and can access and walk on the exposed lake-bed below the ordinary high-water mark. In this instance, the definition of the "ordinary high-water mark" comes from the 2005 Michigan Supreme Court decision in Glass v. Goeckel, which states that the ordinary high-water mark is the point where *"the presence and action of the water is so continuous as to leave a defined mark either by erosion, destruction of terrestrial vegetation or other easily recognized characteristics."* Under this definition, in general the ordinary high-water mark will be relatively constant over time and should not change appreciatively even as lake levels change.

The public also has the right to use the waters of inland lakes, rivers, and streams for recreation, including the St. Marys River, the St. Clair River, and the Detroit River. However, the beds of these lakes and rivers belong to the adjacent landowners, and paddlers must take care not to trespass on shorelands. Since the beds of inland lakes, rivers, and streams are often privately owned, communities planning a water trail will want to ensure there are an adequate number of legal public access points on these waterways.

The State of Michigan has jurisdiction over and is responsible for managing the river surface on all navigable rivers in Michigan. In addition, state authorities are responsible for the enforcement of other state laws and regulations pertaining to waterways (e.g., marine safety, fishing, water protection, etc.).

ENVIRONMENTAL PERMITTING

Under Michigan law, the Department of Environment, Great Lakes, and Energy (EGLE) regulates many activities involved in water trail development and maintenance on all Michigan waters. Along the coast of Michigan's Great Lakes, Lake St. Clair, and certain large, navigable waterways, federal agencies also have the authority to regulate some of these activities.

For a Great Lake, inland lake, river, wetland, or 100-year floodplain, some water trail development activities typically require a state permit. Examples of these activities include dredging or placing fill material, removing logjams, and installing docks, boat launches, culverts, and other structures. Grading, excavation, and other earth-moving activities within 500 feet of a waterbody or wetland also require a soil erosion control permit. In certain areas of the coast that have been designated under Michigan law as High Risk Erosion Areas, Environmental Areas, or Critical Dune Areas, water trail construction or maintenance activities outside the waterbody — that is, on dry land — may require a state permit as well.

To avoid duplication of state and federal permitting processes, EGLE has worked with the U.S. Army Corps of Engineers to develop a joint permit application for projects proposed in Michigan's waters and wetlands. As a result, completing the joint application form and submitting it to EGLE also begins the application process for a federal permit (if one is required for the proposed project). The application is available at michigan.gov/jointpermit.

PERMIT REQUIRED ACTIVITIES

- Dredging and placing fill
- Installing riprap
- Shoreline protection projects
- Installing docks, piers and mooring pillars
- Installing boat wells and boat hoists
- Installing boardwalks and decks
- Installing pipes
- Installing moorings and navigational buoys
- Installing fences
- Removing structures
- Habitat restoration
- Installing bridges and culverts
- Marina construction, expansion and reconfiguration

Permitting Compliance

The Michigan Department of Environment, Great Lakes, and Energy regulates many activities involved in water trail development and maintenance. Ensure proper communication and compliance regarding permit-required action.

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

LIABILITY

Two questions that local officials often ask in the preliminary stages of planning a water trail typically pertain to liability:

1. Does allowing water trail users on public or private property expose local governments or private landowners to liability?

2. If local governments or landowners improve a natural sandy beach launch site with a floating dock, signage, lockers or other amenities, what effect will that have on liability?

Advisory research prepared for Michigan Sea Grant by the National Sea Grant Law Center in 2014 and 2016 suggests that local governments and private landowners participating in water trails with "reasonable care" are generally protected from liability in most instances. However, there may be some exceptions. A local jurisdiction or landowner may be found liable if their conduct is "willful or malicious," or if "valuable consideration" (i.e., a specific fee) is paid in return for use of an access site (such as a launch fee).

This advisory research, of course, should not be construed as legal advice. Liability questions for the water trail are best addressed with an attorney.

Woody Debris

Log jams can block passage of paddlers, but care must be taken when removing them.

LOGJAMS

(adapted from Michigan Department of Environmental Quality, WaterWords, 7-24-2014)

WOODY MATERIALS IN MICHIGAN STREAMS

Woody materials, also referred to as woody structure, woody debris, or logjams, play important roles in maintaining healthy streams. Benefits of stable woody structures include increasing channel stability by absorbing flood flow energy; increasing pool formation, backwater habitat, and general habitat diversity; creating sites for riparian vegetation colonization; providing refuges during floods and nursery habitat for juvenile fish; and increasing aquatic insect and fish production and diversity.

Wood in streams can also be controversial. Excessive amounts can clearly interfere with canoeing and fish passage and increase upstream water levels during floods, and even normal amounts can collect floating trash and cause localized stream bank erosion.

The negative impact of woody material on upstream flooding is often overestimated. Studies have shown that a 50% blockage only causes a 1% rise in water levels under ordinary stream flows, and that even at higher flood-stage slows, a 30% blockage only raises upstream water levels by 5%.

While removing logjams is a common component of river cleanups, indiscriminate removal of woody materials can negatively impact a stream in multiple ways, including decreased channel stability, decreased number of pools and general habitat diversity, release of sediment held behind wood structure, and reduced aquatic insect and fish production. Alternatives to complete removal have been developed in which collected trash is removed, the center of a logjam is cut away to allow canoe passage, and logs embedded in the stream banks and bed are left in place. This alternative is called the "Woody Debris Management 101 – Clean and Open Method" developed by the Rouge River National Wet Weather Demonstration Project.

It is recommended that stakeholders adopt this method when removing logjams.

CLEAN AND OPEN METHOD

1. **PLAN** - Address public health, legal access, safety concerns, define point of access to river, determine depth of water, flow and emergency plans.
2. **CLEAN** - Remove urban rubbish (man-made materials) and dispose properly.
3. **OPEN** - Move or cut loose floating debris to allow a passage for flow. Use a handsaw or chain saw to make the opening wide enough to allow flow through logjam.
4. Place excess woody debris along streambanks and in the adjacent riparian corridor to create habitat.
5. Leave woody debris that is embedded in the stream's banks or bottom undisturbed.
6. Minimize impact to the riparian corridor at work site.

The benefits of the Clean and Open Method include:

- Can be accomplished using volunteers and requires no regulatory permit
- Creates, preserves, and enhances habitat structure
- Reduces local flooding and erosion
- Increases the river's aesthetic value

Clear Rivers

Indiscriminate removal of woody debris can negatively impact a waterway. Adopt the "Clean and Open Method" for removing logjams.

USER CONFLICTS

(from CONFLICTS ON MULTIPLE-USE TRAILS, National Trails Training Partnership, August 1994)

Conflicts on multiple-use trails have been described "as problems of success -- an indication of the trail's popularity" (Ryan 1993, 158). In fact, the vast majority of trail users are satisfied, have few complaints, and return often. However, conflicts among trail users do occur and can have serious consequences if not addressed. The National Recreational Trails Advisory Committee identified trail-user conflicts on multiple-use trails as a major concern that needs resolution.

As with crowding, conflict is not an objective state but depends on individual interpretations of past, present, and future contacts with others. Jacob and Schreyer (1980, 370) theorize that there are four classes of factors that produce conflict in outdoor recreation:

- **Activity Style:** The various personal meanings attached to an activity. Intensity of participation, status, range of experience, and definitions of quality (e.g., experts and novices may not mix well).
- **Resource Specificity:** The significance attached to using a specific recreation resource for a given recreation experience (e.g., someone running her favorite trail near where she grew up along Lake Tahoe will not appreciate seeing a tourist demonstrate a lack of respect for her "special place" by littering).
- **Mode of Experience:** The varying expectations of how the natural environment will be perceived (e.g., bird watchers who are "focused" on the natural environment will not mix well with a group of ATV riders seeking speed and thrills who are "unfocused" on the environment).
- **Tolerance for Lifestyle Diversity:** The tendency to accept or reject lifestyles different from one's own (e.g., some trail users "just don't like" people who do not share their values, priorities, trail activities, etc.).

Conflict is predictable on land trails that host bikers, hikers, horse and ATV riders traveling at varying speeds through a narrow path, but water trails can also pose challenges. Quiet-water paddlers may find themselves at odds with wake-producing motor boats, and a group of boisterous paddlers may spook the potential catch of an angler. The different activities and goals of users can create animosity, spoil individual experiences, and threaten to polarize trail users who could be working together rather than at odds with one another.

Different Users, Different Goals

Paddlers often seek a "quiet-water" experience while motor boaters often seek the thrill of speed. They each have a right to use the resource as they please. However, educating users on tolerance, directing them to areas where their goals fit with the available amenities, and proper management can help to avoid conflicts.

Adherence to the following 12 principles should help improve sharing and cooperation on multiple-use trails.

1. **Recognize Conflict as Goal Interference:** Do not treat conflict as an inherent incompatibility among different trail activities, but rather, recognize it as goal interference attributed to another's behavior.

2. **Provide Adequate Trail Opportunities:** Offer adequate trail mileage and provide opportunities for a variety of trail experiences. This will help reduce congestion and allow users to choose the conditions that are best suited to the experiences they desire.

3. **Minimize Number of Contacts in Problem Areas:** Each contact among trail users (as well as contact with evidence of others) has the potential to result in conflict. So, as a general rule, reduce the number of user contacts whenever possible. This is especially true in congested areas and at trailheads. Disperse use where necessary after careful consideration of the additional environmental impact and lost opportunities for positive interactions this may cause.

4. **Involve Users as Early as Possible:** Identify the present and likely future users of each trail and involve them in the process of avoiding and resolving conflicts as early as possible, preferably before conflicts occur. For proposed trails, possible conflicts and their solutions should be addressed during the planning and design stage with the involvement of prospective users. New and emerging uses should be anticipated and addressed as early as possible with the involvement of participants. Likewise, existing and developing conflicts on present trails need to be faced quickly and addressed with the participation of those affected.

5. **Understand User Needs:** Determine the motivations, desired experiences, norms, setting preferences, and other needs of the present and likely future users of each trail. This "customer" information is critical for anticipating and managing conflicts.

6. **Identify the Actual Sources of Conflict:** Help users to identify the specific tangible causes of any conflicts they are experiencing. In other words, get beyond emotions and stereotypes as quickly as possible, and get to the roots of any problems that exist.

7. **Work with Affected Users:** Work with all parties involved to reach mutually agreeable solutions to these specific issues. Users who are not involved as part of the solution are more likely to be part of the problem now and in the future.

8. **Promote Trail Etiquette:** Minimize the possibility that any particular trail contact will result in conflict by actively and aggressively promoting responsible trail behavior. Use existing educational materials or modify them to better meet local needs. Target these educational efforts, get the information into users' hands as early as possible, and present it in interesting and understandable ways (Roggenbuck and Ham 1986).

Manage the Trail to Reduce Conflict

Proper management of the trail can help reduce user conflicts. For example, other users may not appreciate if some anglers litter bait containers on the trail or access site, but providing proper disposal services can reduce the likelihood of litter, limiting the potential for conflict between user types.

Promote Trail Etiquette

Take example from land trails and use signs and kiosk to remind users to "share the trail." Promote trail etiquette and responsible behavior.

9. Encourage Positive Interaction Among Different Users: Trail users are usually not as different from one another as they believe. Providing positive interactions both on and off the trail will help break down barriers and stereotypes, and build understanding, good will, and cooperation. This can be accomplished through a variety of strategies such as sponsoring "user swaps," joint trail-building or maintenance projects, filming trail-sharing videos, and forming Trail Advisory Councils.

10. Favor Light-Handed Management: Use the most "light-handed approaches" that will achieve area objectives. This is essential in order to provide the freedom of choice and natural environments that are so important to trail-based recreation. Intrusive design and coercive management are not compatible with high-quality trail experiences.

11. Plan and Act Locally: Whenever possible, address issues regarding multiple-use trails at the local level. This allows greater sensitivity to local needs and provides better flexibility for addressing difficult issues on a case-by-case basis. Local action also facilitates involvement of the people who will be most affected by the decisions and most able to assist in their successful implementation.

12. Monitor Progress: Monitor the ongoing effectiveness of the decisions made and programs implemented. Conscious, deliberate monitoring is the only way to determine if conflicts are indeed being reduced and what changes in programs might be needed. This is only possible within the context of clearly understood and agreed upon objectives for each trail area.

APPENDIX A: MILEAGE BETWEEN ACCESS POINTS

From / To	Smithville Park (0.00)	McArthur Park - Eaton Rapids (1.47)	Mill Street - Eaton Rapids (2.27)	Bunker Road Landing (6.55)	McNamara Landing (10.52)	Riverbend Natural Area (12.58)	Burchfield Park (13.08)	Danford Island Park - Dimondale (18.24)	Lions Community Park - Dimondale (18.30)	Fulton Park - Lansing (23.40)	Grand River Park & Boat Launch (26.06)	Moores Dam & Park (27.35)	Sweeneys Landing (28.67)	Lansing City Market (29.35)	Adado Park - East (29.57)	Adado Park - West (29.59)	Burchard Park - N Lansing Dam (30.04)	Tecumseh Park	Grand Woods Park (34.41)	Delta Mills Park (36.81)	Hunter's Orchard Park (37.14)	Jaycee Park - Grand Ledge (42.96)	Second Island Park - Grand Ledge (43.40)	Fitzgerald Park - Grand Ledge Dam (44.46)	Charlotte Hwy - Portland (56.65)	Erdman Road End (61.55)	Thompson Field - Portland (69.73)	Portland Municipal Dam (73.44)	Webber Dam Fishing Access - East (80.66)	Webber Dam Access - West (80.68)	Tabor Street Boat Ramp - Lyons (86.09)	Lyons Dam Take-out (86.94)
Smithville Park (0.00)	0																															
McArthur Park - Eaton Rapids (1.47)	N 1.47	0																														
Mill Street - Eaton Rapids (2.27)	* 2.27	* 0.8	0																													
Bunker Road Landing (6.55)	C 6.55	* 5.08	N 4.28	0																												
McNamara Landing (10.52)	C 10.52	* 9.05	N 8.25	N 3.97	0																											
Riverbend Natural Area (12.58)	C 12.58	* 11.11	N 10.31	N 6.03	N 2.06	0																										
Burchfield Park (13.08)	C 13.08	* 11.61	N 10.81	N 6.53	N 2.56	N 0.5	0																									
Danford Island Park - Dimondale (18.24)	C 18.24	* 16.77	E 15.97	N 11.69	N 7.72	N 5.66	N 5.16	0																								
Lions Community Park - Dimondale (18.30)	C 18.3	* 16.83	E 16.03	E 11.75	E 7.78	E 5.72	E 5.22	E 0.06	0																							
Fulton Park - Lansing (23.40)	C 23.4	* 21.93	E 21.13	E 16.85	E 12.88	E 10.82	E 10.32	E 5.16	N 5.1	0																						
Grand River Park & Boat Launch (26.06)	C 26.06	* 24.59	E 23.79	E 19.51	E 15.54	E 13.48	E 12.98	E 7.82	N 7.76	N 2.66	0																					
Moores Dam & Park (27.35)	C 27.35	* 25.88	E 25.08	E 20.8	E 16.83	E 14.77	E 14.27	E 9.11	N 9.05	N 3.95	N 1.29	0																				
Sweeneys Landing (28.67)	C 28.67	* 27.2	C 26.4	C 22.12	E 18.15	E 16.09	E 15.59	E 10.43	E 10.37	E 5.27	E 2.61	N 1.32	0																			
Lansing City Market (29.35)	C 29.35	* 27.88	C 27.08	C 22.8	E 18.83	E 16.77	E 16.27	E 11.11	E 11.05	E 5.95	E 3.29	N 2	N 0.68	0																		
Adado Park - East (29.57)	C 29.57	* 28.1	C 27.3	C 23.02	E 19.05	E 16.99	E 16.49	E 11.33	E 11.27	E 6.17	E 3.51	N 2.22	N 0.9	N 0.22	0																	
Adado Park - West (29.59)	C 29.59	* 28.12	C 27.32	C 23.04	E 19.07	E 17.01	E 16.51	E 11.35	E 11.29	E 6.19	E 3.53	N 2.24	N 0.92	N 0.24	N 0.02	0																
Burchard Park - N Lansing Dam (30.04)	C 30.04	* 28.57	C 27.77	C 23.49	E 19.52	E 17.46	E 16.96	E 11.8	E 11.74	E 6.64	E 3.98	N 2.69	N 1.37	N 0.69	N 0.47	N 0.45	0															
Tecumseh Park ( )	C 32.2	* 30.73	C 29.93	C 25.65	C 21.68	C 19.62	C 19.12	E 13.96	E 13.9	E 8.8	E 6.14	E 4.85	E 3.53	E 2.85	E 2.63	E 2.61	N 2.16	0														
Grand Woods Park (34.41)	C 34.41	* 32.94	C 32.14	C 27.86	C 23.89	C 21.83	C 21.33	E 16.17	E 16.11	E 11.01	E 8.35	E 7.06	E 5.74	E 5.06	E 4.84	E 4.82	N 4.37	N 2.21	0													
Delta Mills Park (36.81)	C 36.81	* 35.34	C 34.54	C 30.26	C 26.29	C 24.23	C 23.73	E 18.57	E 18.51	E 13.41	E 10.75	E 9.46	E 8.14	E 7.46	E 7.24	E 7.22	N 6.77	N 4.61	N 2.4	0												
Hunter's Orchard Park (37.14)	C 37.14	* 35.67	C 34.87	C 30.59	C 26.62	C 24.56	C 24.06	E 18.9	E 18.84	E 13.74	E 11.08	E 9.79	E 8.47	E 7.79	E 7.57	E 7.55	N 7.1	N 4.94	N 2.73	N 0.33	0											
Jaycee Park - Grand Ledge (42.96)	C 42.96	* 41.49	C 40.69	C 36.41	C 32.44	C 30.38	C 29.88	E 24.72	E 24.66	E 19.56	E 16.9	E 15.61	E 14.29	E 13.61	E 13.39	E 13.37	N 12.92	N 10.76	N 8.55	N 6.15	N 5.82	0										
Second Island Park - Grand Ledge (43.40)	C 43.4	* 41.93	C 41.13	C 36.85	C 32.88	C 30.82	C 30.32	C 25.16	E 25.1	E 20	E 17.34	E 16.05	E 14.73	E 14.05	E 13.83	E 13.81	E 13.36	E 11.2	E 8.99	N 6.59	N 6.26	N 0.44	0									
Fitzgerald Park - Grand Ledge Dam (44.46)	C 44.46	* 42.99	C 42.19	C 37.91	C 33.94	C 31.88	C 31.38	C 26.22	E 26.16	E 21.06	E 18.4	E 17.11	E 15.79	E 15.11	E 14.89	E 14.87	E 14.42	E 12.26	E 10.05	E 7.65	E 7.32	E 1.5	E 1.06	0								
Charlotte Hwy - Portland (56.65)	C 56.65	* 55.18	C 54.38	C 50.1	C 46.13	C 44.07	C 43.57	C 38.41	C 38.35	C 33.25	C 30.59	C 29.3	C 27.98	C 27.3	C 27.08	C 27.06	E 26.61	E 24.45	E 22.24	E 19.84	E 19.51	E 13.69	E 13.25	N 12.19	0							
Erdman Road End (61.55)	C 61.55	* 60.08	C 59.28	C 55	C 51.03	C 48.97	C 48.47	C 43.31	C 43.25	C 38.15	C 35.49	C 34.2	C 32.88	C 32.2	C 31.98	C 31.96	C 31.51	C 29.35	C 27.14	C 24.74	C 24.41	E 18.59	E 18.15	E 17.09	N 4.9	0						
Thompson Field - Portland (69.73)	C 69.73	* 68.26	C 67.46	C 63.18	C 59.21	C 57.15	C 56.65	C 51.49	C 51.43	C 46.33	C 43.67	C 42.38	C 41.06	C 40.38	C 40.16	C 40.14	C 39.69	C 37.53	C 35.32	C 32.92	C 32.59	C 26.77	C 26.33	E 25.27	N 13.08	N 8.18	0					
Portland Municipal Dam (73.44)	C 73.44	* 71.97	C 71.17	C 66.89	C 62.92	C 60.86	C 60.36	C 55.2	C 55.14	C 50.04	C 47.38	C 46.09	C 44.77	C 44.09	C 43.87	C 43.85	C 43.4	C 41.24	C 39.03	C 36.63	C 36.3	C 30.48	C 30.04	C 28.98	E 16.79	N 11.89	N 3.71	0				
Webber Dam Fishing Access - East (80.66)	C 80.66	* 79.19	C 78.39	C 74.11	C 70.14	C 68.08	C 67.58	C 62.42	C 62.36	C 57.26	C 54.6	C 53.31	C 51.99	C 51.31	C 51.09	C 51.07	C 50.62	C 48.46	C 46.25	C 43.85	C 43.52	C 37.7	C 37.26	C 36.2	E 24.01	E 19.11	E 10.93	N 7.22	0			
Webber Dam Access - West (80.68)	C 80.68	* 79.21	C 78.41	C 74.13	C 70.16	C 68.1	C 67.6	C 62.44	C 62.38	C 57.28	C 54.62	C 53.33	C 52.01	C 51.33	C 51.11	C 51.09	C 50.64	C 48.48	C 46.27	C 43.87	C 43.54	C 37.72	C 37.28	C 36.22	E 24.03	E 19.13	E 10.95	N 7.24	E 0.02	0		
Tabor Street Boat Ramp - Lyons (86.09)	C 86.09	* 84.62	C 83.82	C 79.54	C 75.57	C 73.51	C 73.01	C 67.85	C 67.79	C 62.69	C 60.03	C 58.74	C 57.42	C 56.74	C 56.52	C 56.5	C 56.05	C 53.89	C 51.68	C 49.28	C 48.95	C 43.13	C 42.69	C 41.63	C 29.44	E 24.54	E 16.36	E 12.65	E 5.43	E 5.41	0	
Lyons Dam Take-out (86.94)	C 86.94	* 85.47	C 84.67	C 80.39	C 76.42	C 74.36	C 73.86	C 68.7	C 68.64	C 63.54	C 60.88	C 59.59	C 58.27	C 57.59	C 57.37	C 57.35	C 56.9	C 54.74	C 52.53	C 50.13	C 49.8	C 43.98	C 43.54	C 42.48	C 30.29	E 25.39	E 17.21	E 13.5	E 6.28	E 6.26	N 0.85	0

Skill Level – the amount of training and experience possessed by the paddlers

N – Novice – little to no experience and training – No Portages – Less than 4 Hours

E – Experienced – paddler has had both some instruction and some experience paddling a craft – May have short Portages – Less than 8 Hours

C – Challenge – paddler has had both significant training and significant experience paddling in a variety of circumstances – May have long Portages – May have long paddling days or overnight stays

* The State Street Dam in Eaton Rapids does not have a portage path available, so the distance from McArthur Park to Mill Pointe must be covered on land (approximately one mile)

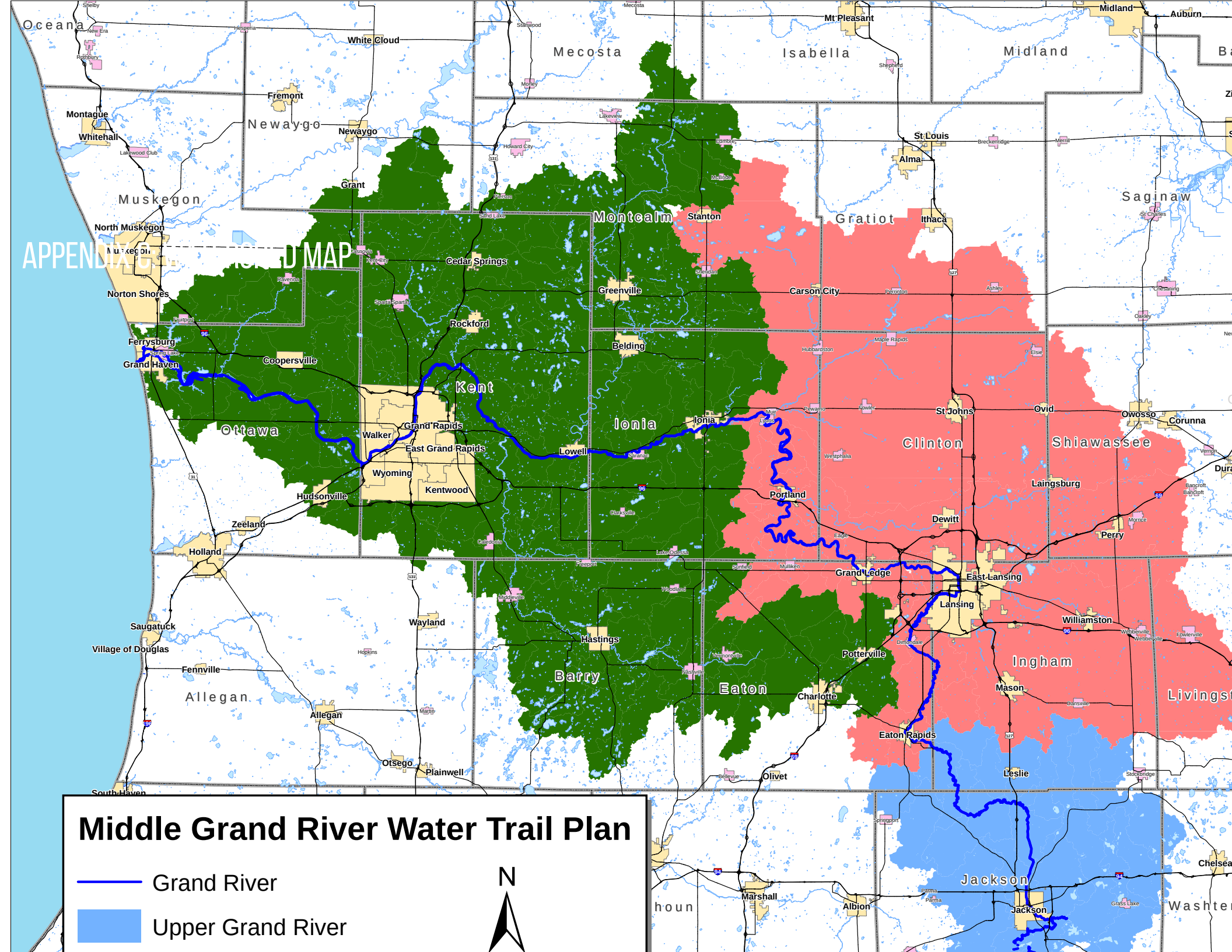
APPENDIX B: MILES FROM LAKE MICHIGAN TO WATER TRAIL FEATURE

LOCATION	DISTANCE TO LAKE MICHIGAN	TYPE	OWNER	LATITUDE	LONGITUDE
Maple River Confluence	Mile 93.5			42.996	-84.955
Hazel Devore Park - Lyons	Mile 94.9	Access	Lyons	42.984	-84.948
Bridge Street Bridge (Lyons), Ionia County	Mile 95.1	Bridge	Ionia CRC	42.982	-84.950
Tabor Street Launch	Mile 96.0	Access	Lyons	42.978	-84.942
Wager Dam Site (hazard)	Mile 99.4	Hazard	Private	42.966	-84.914
Webber Dam (portage)	Mile 101.4	Dam	Consumers Energy	42.953	-84.903
David Hwy Bridge	Mile 103.6	Bridge	Ionia CRC	42.929	-84.896
Goodwin Road	Mile 106.0	Bridge	closed	42.915	-84.933
Portland Dam (Portage)	Mile 108.1	Dam	Portland	42.889	-84.931
Bogue Flats Recreation Area	Mile 110.1	Park	Portland	42.880	-84.903
Portland Riverwalk	Mile 111.0	former RR	Portland	42.874	-84.902
Looking Glass River Confluence	Mile 111.1			42.871	-84.902
E Grand River Ave. Bridge (Portland), Ionia County	Mile 111.1	Bridge		42.871	-84.903
Bridge Street Bridge (Portland), Ionia County	Mile 111.2	Bridge	Portland	42.870	-84.904
Thompson Field Boat Launch	Mile 111.6	Access	Portland	42.867	-84.910
I-96 Bridge, Ionia County	Mile 112.2	Bridge	MDOT	42.861	-84.917
New Kent Street Bridge, Ionia County	Mile 113.0	Bridge		42.857	-84.912
Old Grand River Trail Ford	Mile 116.5	Ford	Private	42.836	-84.919
Erdman Road Access	Mile 119.7	Landing	DNR	42.814	-84.936
Charlotte Hwy Access	Mile 124.4	Access	DNR	42.815	-84.895
Charlotte Hwy. Bridge (Portland), Ionia County	Mile 124.4	Bridge	Ionia CRC. DNR site, downstream of bridge	42.815	-84.894
Jones Road Bridge, Clinton County	Mile 130.9	Bridge	Clinton CRC. Informal access - upstream of bridge	42.792	-84.818
W. State Rd Bridge, Clinton County	Mile 133.2	Bridge	Clinton CRC	42.785	-84.799
Grand Ledge Dam	Mile 136.6	Dam		42.763	-84.763
Fitzgerald Park	Mile 136.9	Park	Eaton County	42.760	-84.759
Rail Road Tressel	Mile 137.1			42.758	-84.755
Island Park	Mile 137.6	Park	Grand Ledge	42.756	-84.746
Island Park Access	Mile 137.6	Access	Grand Ledge	42.755	-84.746

LOCATION	DISTANCE TO LAKE MICHIGAN	TYPE	OWNER	LATITUDE	LONGITUDE
S. Bridge Street M-100 Bridge, Clinton County	Mile 137.7	Bridge	MDOT	42.755	-84.744
Jaycee Park, Grand Ledge	Mile 138.1	Access	Grand Ledge	42.751	-84.740
Jaycee Park	Mile 138.1	Park	Grand Ledge	42.750	-84.740
New Willow Hwy Access	Mile 140.4	Access	Delta Twp	42.757	-84.710
Willow Hwy Park	Mile 140.4	Park	Delta Twp	42.757	-84.710
I-96 Bridge, Eaton County	Mile 142.7	Bridge	MDOT	42.768	-84.669
Delta Mills Park Access	Mile 144.0	Access	Delta Twp	42.761	-84.650
Delta Mills Park	Mile 144.0	Park	Delta Twp	42.761	-84.650
Webster Road Bridge, Eaton County	Mile 144.1	Bridge	Eaton CRC	42.761	-84.649
Grand Woods Park Access	Mile 146.4	Access	Eaton Co	42.761	-84.612
Grand Woods Park	Mile 146.4	Park	Delta Twp	42.761	-84.612
N. Waverly Road Bridge, Ingham/Eaton CL	Mile 147.2	Bridge		42.753	-84.603
Tecumseh Park Access	Mile 148.6	Access	Lansing	42.758	-84.579
Tecumseh Park	Mile 148.6	Park	Lansing	42.758	-84.578
Rail Road Tressel	Mile 149.2			42.759	-84.571
N. Martin Luther King Jr. Blvd. Bridge, Ingham County	Mile 149.4	Bridge	Lansing	42.756	-84.568
Dietrich Park	Mile 150.2	Park	Lansing	42.750	-84.556
N Grand River Ave Bridge	Mile 150.2	Bridge	Lansing	42.750	-84.555
Turner Dodge	Mile 150.3	Park	Lansing	42.750	-84.551
E. Grand River Ave. (Lansing), Ingham County	Mile 150.5	Bridge	Lansing	42.747	-84.551
North Lansing Dam	Mile 150.6	Dam	LBWL	42.746	-84.55
Burchard Park/North Lansing Dam	Mile 150.7	Park	Lansing	42.745	-84.549
Oakland Street River Trail Access	Mile 150.8	Park	Lansing	42.744	-84.550
Oakland Ave. Bridge, Ingham County	Mile 150.8	Bridge	MDOT	42.743	-84.550
Saginaw Street Bridge, Ingham County	Mile 151.0	Bridge	MDOT	42.741	-84.549
Pedestrian Bridge, Lansing (may be able to get it on a bridge	Mile 151.1	Bridge	Lansing	42.739	-84.549
Adado Riverfront Park	Mile 151.2	Park	Lansing	42.738	-84.549
Shiawassee Street Bridge, Ingham County	Mile 151.3	Bridge	Lansing	42.737	-84.549
Radisson Pedestrian Bridge	Mile 151.4	Bridge		42.734	-84.549
Wentworth Park	Mile 151.5	Park	Lansing	42.734	-84.550
Michigan Ave. Bridge, Ingham County	Mile 151.5	Bridge	Lansing	42.734	-84.550

LOCATION	DISTANCE TO LAKE MICHIGAN	TYPE	OWNER	LATITUDE	LONGITUDE
Kalamazoo Street Bridge, Ingham County	Mile 151.8	Bridge	Lansing	42.730	-84.547
Kalamazoo Plaza	Mile 151.8	Park	Lansing	42.730	-84.548
Sweeney's Landing/Cherry Hill Park	Mile 152.0	Access	Lansing	42.726	-84.546
Cherry Hill Park	Mile 152.0	Park	Lansing	42.726	-84.546
I-496 Bridge, Ingham County	Mile 152.1	Bridge	MDOT	42.726	-84.546
Red Cedar River Confluence combine with Riverpoint Park	Mile 152.2			42.725	-84.548
Riverpoint Park	Mile 152.3	Park	Lansing	42.724	-84.550
S. Washington Ave. Bridge, Ingham County	Mile 152.5	Bridge	Lansing	42.724	-84.552
Upper Town & Elm Street Bridge, Ingham County	Mile 152.7	Bridge	Lansing	42.722	-84.554
Rail Road Tressel	Mile 152.9			42.719	-84.554
Island Avenue Bridge	Mile 153.0	Bridge	Lansing	42.719	-84.555
Lansing River Trail	Mile 153.1	Bridge	Lansing	42.718	-84.556
Glenn Island	Mile 153.1	Park		42.718	-84.556
Moores Dam Portage	Mile 153.3	Dam	LBWL	42.718	-84.561
Moores Park Access	Mile 153.3	Park		42.718	-84.562
SB MLK Blvd M-99 (Logan St.), Ingham County	Mile 153.7	Bridge	MDOT	42.720	-84.567
Riverside Park	Mile 153.8	Park		42.720	-84.570
Grand River Park Launch	Mile 154.6	Access	Lansing	42.721	-84.586
Grand River Park	Mile 154.8	Park		42.721	-84.589
Frances Park	Mile 155.1	Park		42.718	-84.593
Waverly Road Bridge, Ingham/Eaton CL	Mile 155.9	Bridge		42.709	-84.603
Hunter's Ridge Park	Mile 156.7	Park	Lansing	42.700	-84.611
Fulton Park	Mile 157.3	Access	Lansing	42.693	-84.614
Fulton Park	Mile 157.3	Park	Lansing	42.693	-84.614
Fine Park	Mile 157.7	Park	Lansing	42.689	-84.620
Woldumar	Mile 158.7	Preserve		42.685	-84.632
Creyts Road Bridge, Eaton County	Mile 160.3	Bridge	Eaton CRC	42.671	-84.642
EB I-96 Bridge, Eaton County	Mile 160.5	Bridge	MDOT	42.671	-84.645
Danford Island Park Access	Mile 162.3	Access	Dimondale	42.646	-84.651
Bridge Street Bridge (Dimondale), Eaton County	Mile 162.4	Bridge	Eaton CRC	42.645	-84.650
M-99/N. Michigan Rd., Eaton County	Mile 164.2	Bridge	MDOT	42.631	-84.623
Waverly Road Bridge, Ingham/Eaton CL	Mile 165.4	Bridge		42.622	-84.603

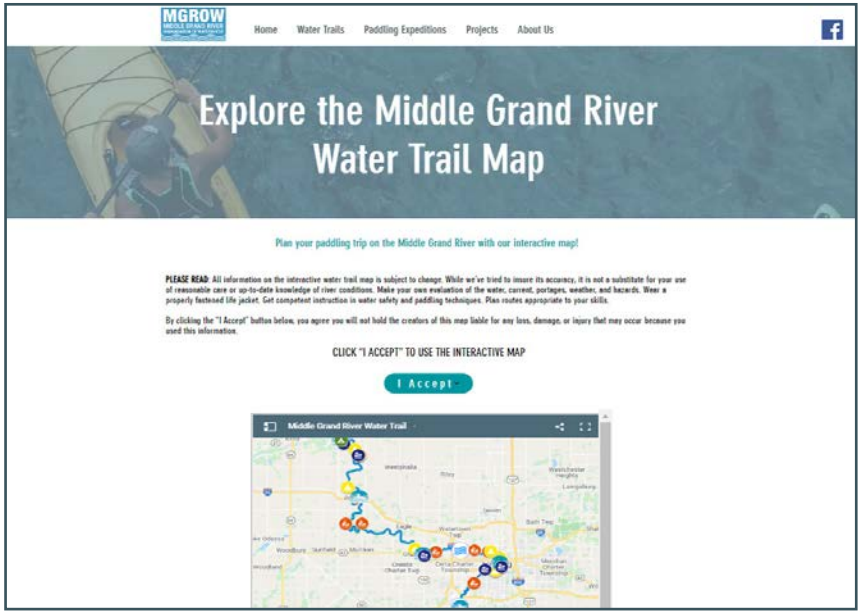
LOCATION	DISTANCE TO LAKE MICHIGAN	TYPE	OWNER	LATITUDE	LONGITUDE
Burchfield Park - North - Livery	Mile 166.9	Access	Ingham Co	42.610	-84.589
Burchfield Park - South	Mile 167.4	Access	Ingham Co	42.607	-84.592
Riverbend Natural Area	Mile 167.9	Access	Ingham Co	42.601	-84.594
McNamara Landing	Mile 169.9	Access	Ingham Co	42.583	-84.601
W. Columbia Rd Bridge, Ingham County	Mile 170.0	Bridge	Ingham CRC	42.582	-84.601
English Inn Derelict Bridge	Mile 173.4	Bridge	Private	42.557	-84.619
Bunker Road Bridge, Eaton County	Mile 173.8	Bridge	Eaton CRC	42.553	-84.622
Bunker Road Canoe Landing	Mile 173.9	Access	Ingham Co	42.552	-84.621
Petrieville Hwy. Bridge	Mile 175.7	Bridge	Eaton CRC	42.536	-84.624
Mill Pointe Park Access	Mile 178.1	Access	Eaton Rapids	42.514	-84.654
E. Knight St. Bridge, Eaton County	Mile 178.2	Bridge		42.513	-84.654
Hamlin Street Pedestrian Bridge	Mile 178.3	Bridge	Eaton Rapids	42.512	-84.654
State St. Bridge, Eaton County	Mile 178.4	Bridge		42.509	-84.655
State Street Dam	Mile 178.5	Dam	Private	42.509	-84.655
McArthur Park Launch	Mile 178.9	Access	Eaton Rapids	42.505	-84.649
Smithville Road Bridge, Eaton County	Mile 180.3	Bridge	Eaton CRC	42.500	-84.631
Hamlin Township Park Access	Mile 180.3	Access	Hamlin Twp	42.500	-84.630
Smithville Dam	Mile 180.4	Dam	Private	42.5	-84.629

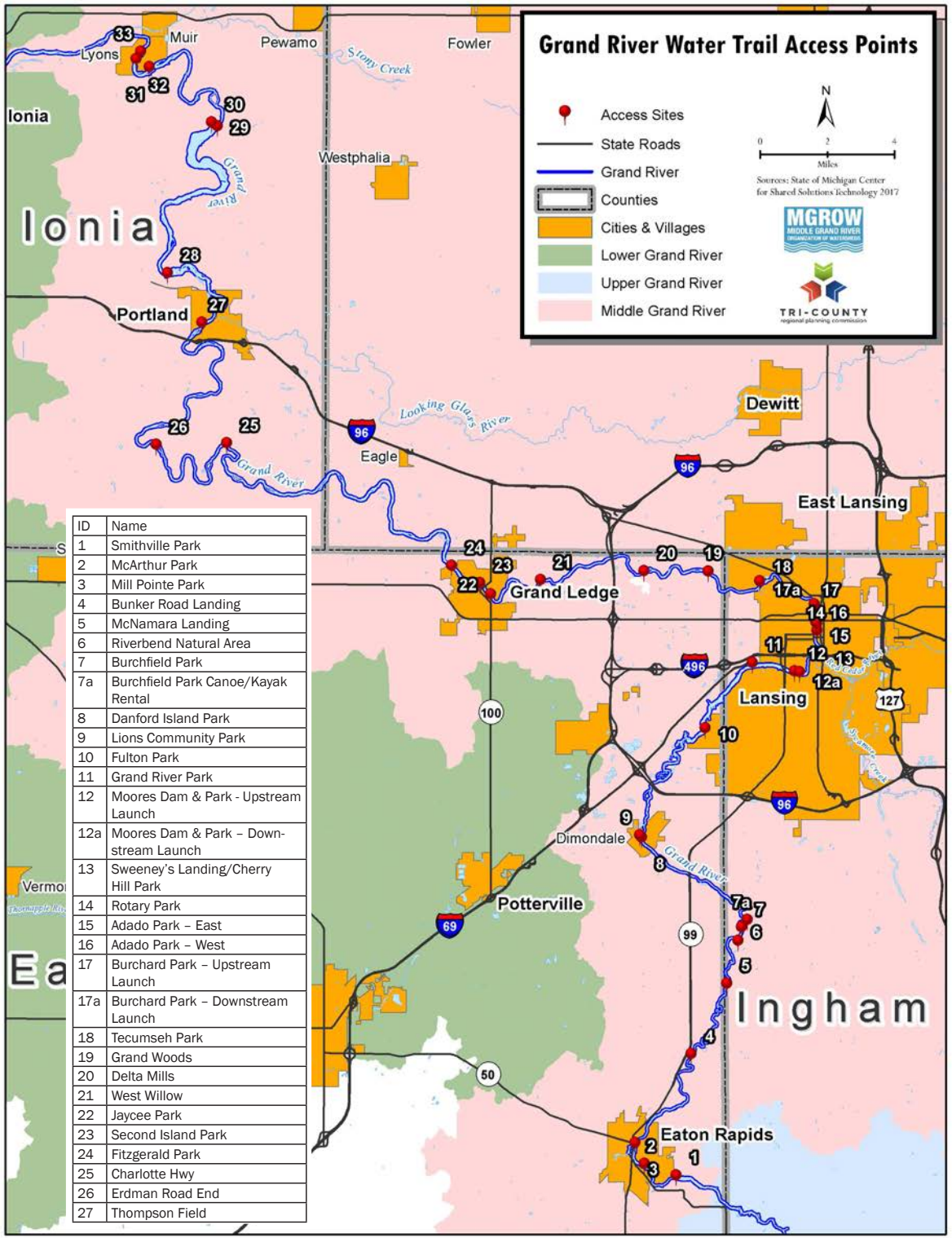

APPENDIX D MAP
Middle Grand River Water Trail Plan
Grand River
Upper Grand River
N
Oceana
Muskegon
Newaygo
Mecosta
Isabella
Midland
Saginaw
Gratiot
Clinton
Shiawassee
Ingham
Eaton
Barry
Kent
Ottawa
Montcalm
Ionia
Allegan
Jackson
Grand Haven
Ferrysburg
Norton Shores
Muskegon
North Muskegon
Whitehall
Montague
Fremont
White Cloud
Newaygo
Grant
Cedar Springs
Rockford
Greenville
Belding
Ionia
Coopersville
Grand Rapids
Walker
East Grand Rapids
Wyoming
Kentwood
Hudsonville
Zeeland
Holland
Saugatuck
Village of Douglas
Fennville
Allegan
Otsego
Plainwell
Wayland
Hastings
Middleville
Lowell
Stanton
Carson City
Ithaca
St Louis
Alma
Mt Pleasant
Midland
Auburn
St Johns
Ovid
Owosso
Corunna
Laingsburg
Perry
Dewitt
Portland
Grand Ledge
East Lansing
Lansing
Williamston
Mason
Charlotte
Potterville
Eaton Rapids
Leslie
Olivet
Albion
Marshall
Jackson
Chelsea

APPENDIX D: WATER TRAIL MAPS

A interactive water trail map is available at

www.MGROW.org/trailmap





ID	Name
1	Smithville Park
2	McArthur Park
3	Mill Pointe Park
4	Bunker Road Landing
5	McNamara Landing
6	Riverbend Natural Area
7	Burchfield Park
7a	Burchfield Park Canoe/Kayak Rental
8	Danford Island Park
9	Lions Community Park
10	Fulton Park
11	Grand River Park
12	Moores Dam & Park - Upstream Launch
12a	Moores Dam & Park – Down-stream Launch
13	Sweeney's Landing/Cherry Hill Park
14	Rotary Park
15	Adado Park – East
16	Adado Park – West
17	Burchard Park – Upstream Launch
17a	Burchard Park – Downstream Launch
18	Tecumseh Park
19	Grand Woods
20	Delta Mills
21	West Willow
22	Jaycee Park
23	Second Island Park
24	Fitzgerald Park
25	Charlotte Hwy
26	Erdman Road End
27	Thompson Field

APPENDIX E: PHOTOGRAPHY CREDITS

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APPENDIX F: WAYFINDING SIGNAGE INVENTORY

LOCATION	DISTANCE TO LAKE MICHIGAN	DISTANCE TO NEXT ACCESS	TYPE	OWNER
Hazel Devore Park Launch	Mile 94.9	Ionia Fairgrounds 8.2 miles	Access	Lyons
Tabor Street Launch	Mile 96.0	Hazel Devore Park Launch 1.1 miles	Access	Lyons
Webber Dam Access	Mile 101.4	Tabor Street Launch 5.4 miles	Dam	Consumers Energy
Webber Dam Portage	Mile 101.4	Portage Here	Dam	Consumers Energy
Portland Dam Access	Mile 108.1	Webber Dam 6.7 miles	Dam	Portland
Portland Dam Portage	Mile 108.1	Portage Here	Dam	Portland
Bogue Flats Recreation Area	Mile 110.1	Portland Dam 2 miles	Park	Portland
Thompson Field Boat Launch	Mile 111.6	Portland Dam 3.5 miles	Access	Portland
Erdman Road Access	Mile 119.7	Thompson Field Boat Launch 8.1 miles	Landing	DNR
Charlotte Highway Access	Mile 124.4	Erdman Road Access 4.7 miles	Access	DNR
Fitzgerald Park Access	Mile 136.9	Charlotte Hwy Access 12.2 miles	Access	Eaton County
Grand Ledge Dam Portage	Mile 136.9	Portage Here	Park	Eaton County
Island Park Access	Mile 137.6	Grand Ledge Dam Portage 1 mile	Access	Grand Ledge
Jaycee Park Launch	Mile 138.1	Island Park Access .5 miles	Access	Grand Ledge
Willow Canoe Launch	Mile 140.4	Jaycee Park Access 2.3 miles	Access	Delta Twp
Delta Mills Canoe Launch	Mile 144.0	Willow Canoe Launch 3.6 miles	Access	Delta Twp
Grand Woods Canoe Launch	Mile 146.4	Delta Mills Canoe Launch 2.4 miles	Access	Eaton Co
Tecumseh Park Launch	Mile 148.6	Grand Woods Canoe Launch 2.2 Miles	Access	Lansing
Dietrich Park	Mile 150.2	Tecumseh Park Launch 1.6 miles	Park	Lansing
Burchard Park Access	Mile 150.7	Tecumseh Park Launch 2.0 miles	Park	Lansing
North Lansing Dam Portage	Mile 150.7	Portage Here	Dam	Lansing
Adado Riverfront Park	Mile 151.2	North Lansing Dam Portage .6 miles	Park	Lansing

LOCATION	DISTANCE TO LAKE MICHIGAN	DISTANCE TO NEXT ACCESS	TYPE	OWNER
Sweeney's Landing/Cherry Hill Park Launch	Mile 152.0	Rotary Park Launch .6 miles	Access	Lansing
Riverpoint Park/Red Cedar River Confluence	Mile 152.2	Sweeneys Landing/ Cherry Hill Park .2 miles	Park	Lansing
Moores Park Access	Mile 153.3	Sweeneys Landing/ Cherry Hill Park 1.3 miles	Dam	LBWL
Moores Dam Portage	Mile 153.3	Portage Here	Park	LBWL
Riverside Park	Mile 153.8	Moores Dam Portage .5 miles	Park	Lansing
Grand River Park Launch	Mile 154.6	Moores Dam Portage 1.3 miles	Access	Lansing
Frances Park	Mile 155.1	Grand River Park Launch .5 miles	Park	Lansing
Fulton Park	Mile 157.3	Grand River Park Launch 2.7 miles	Access	Lansing
Danford Island Park Access	Mile 162.3	Grand River Park Launch 7.7 miles	Access	Dimondale
Burchfield Park Livery	Mile 166.9	Danford Island Park 4.6 miles	Access	Ingham Co
Riverbend Natural Area Access	Mile 167.9	Burchfield Park Livery- 1 mile	Access	Ingham Co
McNamara Landing	Mile 169.9	Riverbend Natural Area Access 2 miles	Access	Ingham Co
Bunker Road Landing	Mile 173.9	McNamara Landing- 4 miles	Access	Ingham Co
Mill Pointe Park Access	Mile 178.1	Bunker Road Lansing- 4.2 miles	Access	Eaton Rapids
McArthur Park Launch	Miles 178.9	Portage to Mill Point	Access	Eaton Rapids
Smithville Park Access	Mile 180.4	McArthur Park Launch 1.5	Access	Hamlin Township

APPENDIX G: MIDDLE GRAND WATER TRAIL LOGO

The Grand River Heritage Water Trail logo, the inspiration for the MGRWT logo design.

The design of the logo was selected to match the logo of the Grand River Heritage Water Trail, a 41-mile water trail in Ottawa County. The planning team worked with the Grand River Partnership to select distinct color combinations for each watershed.

APPENDIX H: RECOMMENDED WAYFINDING FORMAT

The following labels are used to describe various site characteristics on wayfinding signage. However, it is more important for labels to be recognizable to first responders and trail users than to fit within these definitions. For example, the site "Bunker Hill Canoe Landing" was not labeled under this system, as the community knows it as a "Landing."

Launch: indicates a site with a dedicated feature to get people on and off the river, like an EZ-Launcher or dock.

Portage: indicates the required portage point around a hazard, like a dam. Dams have two signs each: "Portage" sign at the upstream exit, "Access" at the downstream access.

Access: indicates a site with available and safe access, but no dock/launcher (i.e beach or shore landings)

Park: indicates a park with no paddling amenities, but public ownership allows for sign posting.

APPENDIX I: SUGGESTED SIGNAGE CONSTRUCTION

LAND SIGNAGE

Quality .080 anodized aluminum sign

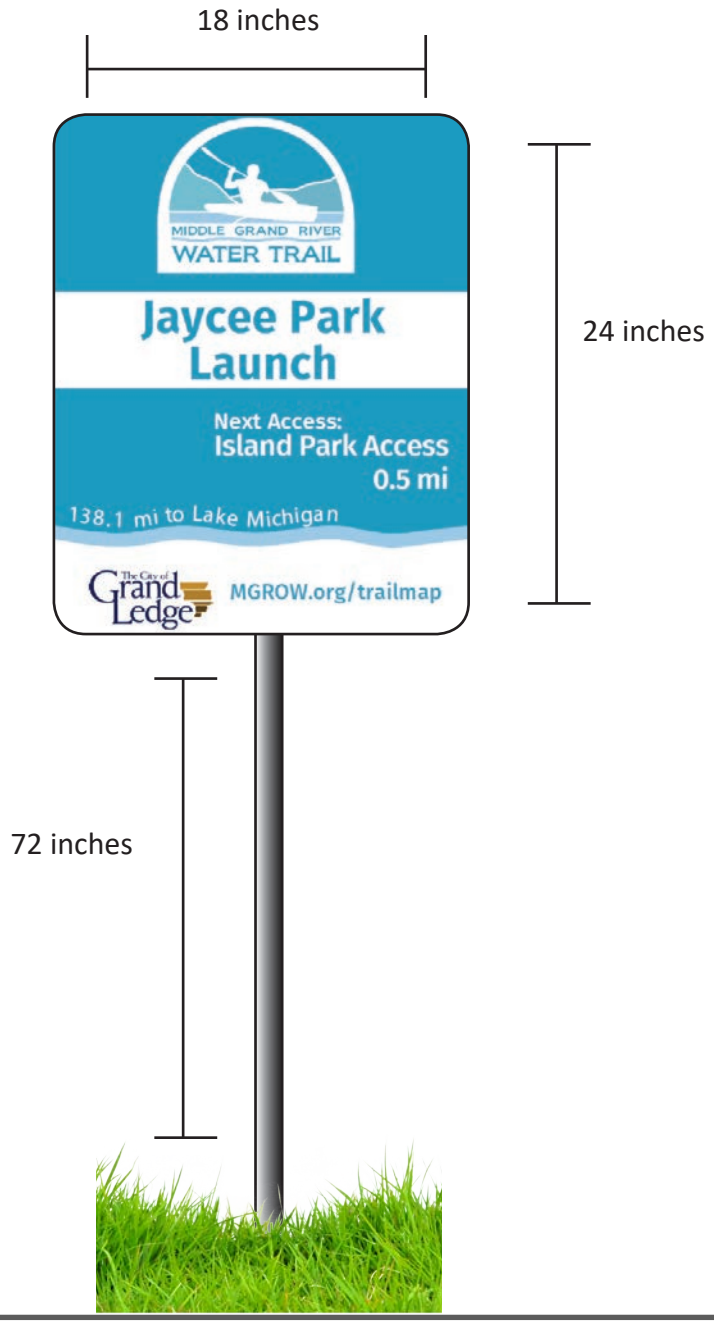
Pre-punched 3/8’ mounting holes for easy installation

Radius corners

3M™ reflective sheeting

Can be installed on a fence post, wooden 4”x4”post, tree, or dock railing

Facing river (visible to paddlers)



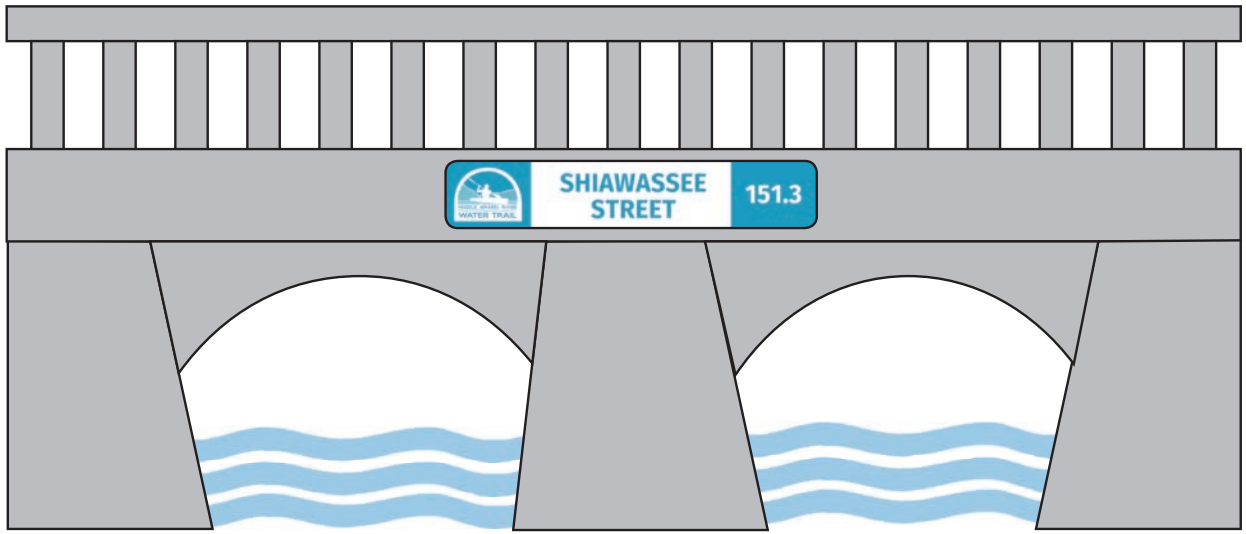
BRIDGE SIGNAGE

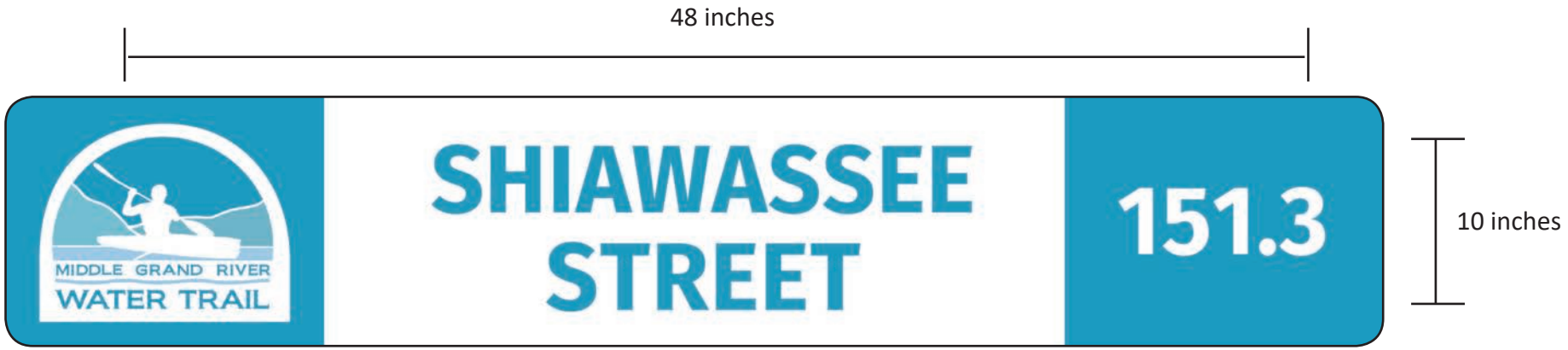
Quality .080 anodized aluminum sign

Radius corners

3M™ reflective sheeting

Can be installed on the bridge column or deck





APPENDIX J: MAINTENANCE REQUIREMENTS

MILE MARKER	PLACE NAME	TYPE	MAINTENANCE OPERATOR	MAINTENANCE CODE	SPECIAL/PERIODIC MAINTENANCE
180.4	Smithville Park Access	Access	Hamlin Township	TR/GK/LM	VS/PG
178.9	McArthur Park Launch	Access	City of Eaton Rapids Parks & Rec	TR/RR/GK/LM	VS
178.1	Mill Pointe Park Access	Access	City of Eaton Rapids Parks & Rec	TR/RR/GK/LM	VS/PG/WD
173.9	Bunker Road Landing	Access	Ingham County Parks	TR/RR/GK/LM	VS/PG
169.9	McNamara Landing	Access	Ingham County Parks	TR/RR/GK/LM	VS/PG/WD
167.9	Riverbend Natural Area Access	Access	Ingham County Parks	TR/RR/GK/LM	VS/PG
166.9	Burchfield Park Livery	Access	Ingham County Parks	TR/RR/GK/LM	VS/PG
162.3	Danford Island Park Access	Access	Village of Dimondale Parks & Rec	TR/GK/LM	VS/WD
157.3	Fulton Park	Park	City of Lansing Parks & Rec	*	VS
155.1	Frances Park	Park	City of Lansing Parks & Rec		VS
154.6	Grand River Park Launch	Access	City of Lansing Parks & Rec	TR/RR/GK/LM	VS
153.8	Riverside Park	Park	City of Lansing Parks & Rec	*	VS
153.3	Moores Park Access	Dam	City of Lansing Parks & Rec	TR/RR/GK/LM	VS
152.2	Riverpoint Park/Red Cedar River Confluence	Park	City of Lansing Parks & Rec	*	VS
152	Sweeney's Landing/Cherry Hill Park Launch	Access	City of Lansing Parks & Rec	TR/GK/LM	VS/WD
151.4	Rotary Park Launch	Access	City of Lansing Parks & Rec	TR/GK/LM	VS/WD
151.2	Adado Riverfront Park	Park	City of Lansing Parks & Rec	TR/GK/LM	VS
150.7	Burchard Park Access	Park	City of Lansing Parks & Rec	TR/GK/LM	VS
150.2	Dietrich Park	Park	City of Lansing Parks & Rec	*	VS
148.6	Tecumseh Park Launch	Access	City of Lansing Parks & Rec	TR/LM	VS/WD
146.4	Grand Woods Canoe Launch	Access	Delta Twp Parks, Recreation, & Cemeteries	TR/RR/GK/LM	VS/PG
144	Delta Mills Canoe Launch	Access	Delta Twp Parks, Recreation, & Cemeteries	TR/RR/GK/LM	VS/WD
140.4	Willow Canoe Launch	Access	Delta Twp Parks, Recreation, & Cemeteries	TR/RR/GK/LM	VS/WD
138.1	Jaycee Park Launch	Access	City of Grand Ledge Parks & Rec	TR/RR/GK/LM	VS/WD
137.6	Island Park Access	Access	City of Grand Ledge Parks & Rec	TR/RR/GK/LM	VS
136.9	Fitzgerald Park Access	Access	Eaton County Parks & Rec	TR/RR/GK/LM	VS/PG
124.4	Charlotte Highway Access	Access	DNR		VS/PG
119.7	Erdman Road Access	Landing	DNR		VS/PG
111.6	Thompson Field Boat Launch	Access	City of Portland Parks & Rec	TR/RR/GK/LM	VS
110.1	Bogue Flats Recreation Area	Park	City of Portland Parks & Rec	*	VS
108.1	Portland Dam Access	Dam	City of Portland Parks & Rec	TR/RR/GK/LM	VS/PG
101.4	Webber Dam Access	Dam	DNR	TR/RR/GK/LM	VS/PG
96	Tabor Street Launch	Access	Village of Lyons	TR/LM	VS
94.9	Hazel Devore Park Launch	Access	Village of Lyons	TR/RR/GK/LM	VS/PG/WD

MAINTENANCE CODES

TR: Trash Removal
RR: Restroom/Portajohn Maintenance
GK: Grounds-keeping (mowing/tree care)
LM: Launch Maintenance (silt clearing, erosion control, EZ Launch/dock maintenance)
VS: Vandalism Repairs/Sign Replacement
PG: Parking Lot Grading (gravel parking)
WD: Woody Debris Management
*: Only signage on site, no access assets

APPENDIX K: ACCESS SITE INVENTORY FIELD FORM

Middle Grand River Access Point Inventory

Name: _____ Date: _____

Nearest Roads: _____ Inspector: _____

Access Coordinates Up: _____

Access Coordinates Down: _____

Parking Coordinates: _____

❑ River Left ❑ River Right

Number of Parking spaces: # paved _____, # gravel _____, # on street _____, # on Shoulder _____
Lighted? ❑ no ❑ yes Comment: _____

Distance - nearest parking to access: _____ Distance - loading to access: _____

Launch Type: ❑ Riverbank ❑ Beach ❑ Launch ❑ ADA
❑ Dock - fixed ❑ Dock - floating ❑ Other _____
Comments: _____

Restrooms: ❑ none ❑ primitive ❑ flush

Drinking Water: ❑ none ❑ hand pump ❑ running water

Refuse Disposal: ❑ none ❑ trash cans (open) ❑ dumpster (covered)
Number of Picnic Tables: _____ Number of Shelters: _____
Camping Sites: _____ rustic _____ improved
Boat Racks: _____ boats Storage Lockers: _____
Bulletin Board / Kiosk (size): _____

WiFi: ❑ no ❑ yes, secured ❑ yes, open
Electricity: ❑ no ❑ yes, available ❑ yes, not readily available
Fee for use: ❑ no ❑ yes ❑ state ❑ county ❑ local
❑ yes Other: _____

Comments: _____
(encumbrances, features, issues, limits, concerns)

❑ More comments on back

Pix Needed

- ❑ Road Access Sign
- ❑ Access Road
- ❑ Parking
- ❑ Restroom
- ❑ Potable Water
- ❑ Electricity
- ❑ Picnic Area (tables, grills, fire pits, shelters)
- ❑ Refuse Collection
- ❑ Bulletin Board / Kiosk
- ❑ Approach from Water (Signage?)
- ❑ Access Site
- ❑ Boat Rack
- ❑ Storage Lockers
- ❑ Camping Sites

Additional Comments: