

LAKE MICHIGAN WATER TRAIL PLAN, PHASE I: Inventory and Analysis of Access Sites in Support of a Lake Michigan Water Trail

Southwest Michigan, West Michigan, Northwest Michigan, and the Upper Peninsula

July 2014

Prepared by the



in partnership with:



This project was funded, in part, by the Michigan Coastal Zone Management Program, Department of Environmental Quality Office of the Great Lakes and the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.







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- Eastern Upper Peninsula Regional Planning & Development Commission
- Land Information Access Association

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Introduction & Background

Introduction

The Lake Michigan Water Trail is a historic effort to catalyze the various governmental, economic and cultural institutions that benefit from our globally unique freshwater coastline. The development of Michigan's Lake Michigan Water Trail is oriented around increasing and improving public access to the Lake Michigan shoreline and the coastal waters within the state of Michigan.

The development of the Lake Michigan Water Trail is a natural extension of on-going green infrastructure planning and implementation efforts being coordinated by the regional planning organizations located along Michigan's Lake Michigan shoreline. The RPOs serve local communities and collaborate on a variety of programs that cross jurisdictional boundaries.

Background

To date, 385 public access sites, 55 campgrounds, and 255 other water trail assets in 21 Michigan counties were inventoried through a collaborative process. Public access site features and associated amenities such as campgrounds and other cultural assets were included in the assessment. This information will be used to assess the gaps and needs for the development of the Lake Michigan Water Trail. In addition, the information will be displayed on the new website (www.michiganwatertrails.org) to begin promoting the use of the Lake Michigan Water Trail where public access is currently available. In 2010, Michigan Sea Grant, in collaboration with the Michigan Department of Environmental Quality Office of the Great Lakes Coastal Zone Management Program (OGL CZM), convened a visionary group of volunteers from all over the state — people who work with coastal communities to develop water trails and love the Great Lakes – to create the Michigan Great Lakes Water Trails Advisory Council. The voluntary group coalesced around the idea of a system of contiguous regional water trails along Michigan's Great Lakes coasts and connecting waters. The Council's ultimate ambition was to more effectively share informa-



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Introduction & Background Continued

tion and coordinate marketing efforts for visitors and residents interested in accessing Michigan's spectacular shoreline. The framework would promote sustainability, tourism, recreation and related economic development in coastal communities.

Stemming from this and from momentum created by local trail groups, Western Michigan University held a Lake Michigan Water Trail Summit in Saugatuck, Michigan in October 2012. The purpose of the Summit was to expand water trail partnerships and advance the development of the Lake Michigan Water Trail. Also with CZM support, Western Michigan University developed a map atlas of Lake Michigan shoreline public access sites. The Lake Michigan Water Trail Association, a non-profit organization that promotes the development and safe use of a continuous water trail around the entire lake, also invited summit participants to help advance their efforts. As a result, four Regional Planning Organizations (RPOs) along Michigan's Lake Michigan shoreline convened a Lake Michigan Water Trail Advisory Group (LMWTAG) to advance establishment of the Lake Michigan Water Trail in Michigan. The development of the Lake Michigan Water Trail also implements the Lake Michigan Action and Management Plan (LAMP) and advances the work of the Lake Michigan Watershed Academy, a collaborative group of RPOs from the Lake Michigan Watershed States of Michigan, Wisconsin, Illinois and Indiana, who coordinate activities.

Helpful Links:

- Lake Michigan Management Plan (Lamp) www.great-lakes.net/lakes/ref/lamps.html
- Lake Michigan Watershed Academy lakemichiganacademy.org
- National Water Trails System National Park Service www.nps.gov/watertrails
- Michigan Great Lakes Water Trail -www.michiganwatertrails.org/default.asp



What is a Water Trail?

Water trails are recreational routes on waterways with a network of public access points supported by broad-based community partnerships. Water trails provide both conservation and recreation opportunities. They are marked routes along rivers, lakes and coastlines for boating, usually intended for quiet water recreation (kayaks, canoes and stand up paddle boards). The trails include: signs and route markers; maps and promotion of water routes; facilities for parking, boat put-in/take-out areas, and places to picnic and sometimes camp. Water trails can be used for both single day and multiple day trips. An established trail provides safe/legal access and information about waterways while providing connections to Michigan's diverse history, ecology, geology, heritage and wildlife.

Drawing the Larger Picture

Lake Michigan Water Trail

The Lake Michigan Water Trail spans more than 760 miles of Michigan's Lake Michigan shoreline. Beginning in Michigan's Upper Peninsula and south to the Indiana State border, the trail includes:

- 287 public access sites available for paddlers and 55 public campgrounds located at shoreline access sites
- 32 major river systems that provide access to an additional connecting water trails and public access sites

When completed, the Lake Michigan Water Trail will offer safe, legal, and adequate access around the entire 1,600 mile long lakeshore of America's Greatest Lake, Lake Michigan. The Lake Michigan Water Trail will be the longest continuous - loop water trail in the world. In 2011, the Lake Michigan Water Trail (75 miles from Chicago to New Buffalo) was designated by the National Parks Service (NPS) as a a National Recreation Trail. Michigan, Indiana and Wisconsin completed detailed inventories for access to Lake Michigan in support of trail development. Wisconsin has applied for a NPS Lake Michigan National Water Trail designation.

Michigan's Regional Planning Organizations completed inventories of access sites along the Lake Michigan shoreline from Wisconsin to Indiana from 2012-2014. As a result of this, approximately 287 paddler-friendly, public access sites along the Lake Michigan shoreline and more than 215 within connecting harbors, lakes and rivers have been identified. For more information visit www.michiganwatertrails.org.

Michigan Great Lakes Water Trails

The Michigan Great Lakes Water Trails website had its genesis in a visionary group of volunteers from all over the state — people who work with coastal communities and love the Great Lakes. The goal is to promote coastal public access by linking regional water trails to form a statewide water trail system along every mile of Great Lakes shoreline. Some regional trails exist and some are still being mapped, but all will benefit from this site. Support has been provided by the Michigan Department of Environmental Quality Coastal Zone Management Program, with content provided by communities and volunteers all over the state.

Michigan Department of Natural Resources (MDNR) State Trails Implementation Plan

The MDNR completed a comprehensive trail implementation plan in May 2013. Water trails are an important part of Michigan's economic development strategy and significant grant funding is now available to support them. For more information, visit www.michigan.gov/documents/ dnr/MI_Comprehensive_Trail_Plan_425377_7. pdf

Vision and Goals Continued

Vision

The Lake Michigan Water Trail system reflects the abundance of water that defines Lake Michigan watershed communities throughout the Great Lakes Region. Citizens and visitors are able to explore coastlines and navigable waters through geographically dispersed water trails that offer a diversity of experiences including lengths, scenery, challenges, amenities and attractions.

Goals and Objectives

Goal: Follow guidelines and enhancement recommendations contained in the Lake Michigan Water Trail Plan (Phase I)

Objectives

- A. Provide Lake Michigan Water Trail users access to the shoreline every five miles along the Lake Michigan shoreline and/ or in connecting rivers, lakes and harbors
- B. Provide Lake Michigan Water Trail users access to restroom facilities every five miles
- C. Establish universal access for Lake Michigan Water Trail users in every harbor and at sites where installation of universal access is feasible
- D. Ensure camping or paddler-friendly lodging a minimum of every ten miles along the Lake Michigan Water Trail
- Goal: Embrace National Park Service National Water Trail Best Management Practice (BMP) criteria. See Appendix B for detailed descriptions.

Objectives

- A. Establish public access points that provide recreational opportunities that accommodate a diversity of trip lengths and provide access to a variety of opportunities for recreation and education
- B. Provide trail users with opportunities to learn about the value of water resources, cultural heritage, boating skills, and outdoor ethics
- C. Provide opportunities for communities to develop and implement strategies that

enhance and restore the health of local waterways and surrounding lands

- D. Encourage community support and advocacy for maintenance and stewardship of the water trail
- E. Provide public with accessible and understandable water trail information, including details for identifying access and trail routes; cultural, historic, and natural features; hazards; and water quality. Promote the water trail to the community and broad national audience
- F. Demonstrate ability to support routine and long-term maintenance investments on the water trail and construct, design, and maintain facilities incorporating sustainability principles.
- G. Maintain a water trail plan that describes a vision, desired future conditions, and strategies to strengthen best management practices

Action Program

Water Trail Development and Enhancements

- A. Install signage and amenities at access sites on the Lake Michigan Water Trail and for all Regional Water Trail Segments of the Lake Michigan Water Trail
- Acquire land to provide additional access to the Lake Michigan Water Trail for water trail use
- C. Acquire land for additional parks with a special interest in the Lake Michigan Water Trail, river frontage, wetlands and other natural areas.

Inventory Process

Description of the Inventory Process

The Lake Michigan Water Trail Advisory Group (LMWTAG) convened in 2012 as an outcome of the Lake Michigan Water Trail Summit. Four Michigan Regional Planning Organizations (RPO) from along the Lake Michigan shoreline agreed to collaborate as part of a larger Michigan Great Lakes water trails initiative and a four-state Lake Michigan Water Trail effort. LMWTAG participants and advisors included:

- Southwest Michigan Planning Commission
- West Michigan Shoreline Regional Development Commission
- Northwest Michigan Council of Governments
- Eastern Upper Peninsula Regional Planning & Development Commission
- National Park Service
- Michigan Department of Environmental Quality - Office of the Great Lakes Coastal Zone Management Program
- Michigan Department of Natural Resources -Parks Division
- Land Information Access Association
- Local tourism and convention and visitors bureaus

The LMWTAG agreed upon a standardized planning process to develop a plan for the Lake Michigan Water Trail, using similar methods within each region located along the shoreline from Indiana to Wisconsin. The LMWTAG embraced the principles of the National Park Service (NPS) Best Management Practice (BMP) Criteria as a planning guideline. NPS BMPs are required for a National Water Trail designation. The LMWTAG also determined that the State of Wisconsin water trail plan criteria for access every five miles and lodging every ten miles along the Lake Michigan shoreline should also be applied during the planning process.

Regional Planning Organizations researched and collected information about access site features and paddling-related amenities in partnership with local governments, paddling groups, convention and visitor bureaus and the public. Volunteers were trained and assisted with the inventories. The information was entered on the Michigan Great Lakes Water Trails website, www.michiganwatertrails.org.

Photo by Ken Johnson



Regional Water Trail Segments

Four Michigan regional planning councils completed detailed inventories of public access sites and trail segments. These trail segments are divided into four sections:

- Lake Michigan Water Trail Southwest
- Lake Michigan Water Trail West
- Lake Michigan Water Trail Northwest Michigan
- Lake Michigan Water Trail Upper Peninsula

Contact information for each water trail segment:



Southwest Michigan Council of Governments (269) 925-1137 www.swmpc.org



West Michigan Shoreline Regional Development Commission (231) 722-7878 www.wmsrdc.org



Northwest Michigan Council of Governments 1-800-692-7774 www.nwm.org



Eastern Upper Peninsula Regional Planning & Development (906) 635-1581 www.eup-planning.org

Access Classification

The compiled inventory of public access points and trail segments for the four trail segments details their current characteristics. The dataset details the presence or absence of parking, public camping land, restrooms, power outlets, lighting, signage, boat launches, and launching fee requirements. Based on these attributes, each site was then classified as offering developed access, carry-in access, alternate access, or emergency access.

Access Type Descriptions		
Description		
A site that provides water access via a public boat ramp or dock.		
A site with a beach that provides easy kayak access to the water with little user conflict from adjacent landowners.		
Non-ideal carry-in access site that may be only a road that ends at the water. Alternate access sites my have a bit of steep slope to the water, require wading or paddling through marsh, or present minimal potential for user conflict from adjacent landowners.		
Use of these sites (primarily road ends) is restricted by limited parking options, high user conflict potential, or agreements with site owners that only permit emergency egress. Primarily during inclement weather.		

Segment Details

The following pages describe the four regional trail segments and provides details through text and maps regarding location, number of miles of shoreline, access point information, and notable features.

Water Trail Segments - Lake Michigan Water Trail



Water Trail Segments - Southwest Michigan

Southwest Michigan Segment

The Southwest Michigan portion of the Lake Michigan Water Trail extends for 84 miles of shoreline, beginning at the Indiana state line near New Buffalo, Michigan and extending north to Tunnel Park, Ottawa County. The 84 miles of shoreline includes 10 miles of parklands, 44 miles of sand dunes, 47 miles of forests and 32 miles of high bluffs. The following counties are along the Southwest Michigan Lake Michigan Water Trail: Berrien, Van Buren, Allegan and Ottawa.

In total, the Southwest Lake Michigan water trail connects 24 local municipalities across the region including: 7 cities, 3 villages, and 14 townships. The southwest shoreline of Lake Michigan provides access to 4 major river systems and one lake: the Galien River (New Buffalo), St. Joseph River (St . Joseph/Benton Harbor), Black River (South Haven), Kalamazoo River (Saugatuck/Douglas) and Lake Macatawa (Holland). There are established water trails on connecting rivers: Galien River Marsh Trail, St, Joseph River, Bangor to South Haven Heritage Water Trail on the Black River, and the Kalamazoo River Heritage Water Trail.

The southwest Michigan shoreline is very scenic with its sand dunes, forests, wetlands and miles of sandy beaches. Along the way, tourist/beach towns are marked with historic lighthouses including New Buffalo, St. Joseph, South Haven, Saugatuck and Holland. The countryside has many small rural towns and inland lakes to explore. Southwest Michigan leads the world in non-citrus fruit production and 70% of the crop diversity in the United States grows in Berrien County. Throughout southwest Michigan there are numerous wineries, u-picks, farmer's markets and farm stands offering fresh produce and more. Southwest Michigan is a birding hot spot with its diverse medley of habitats and its proximity to the southern end of Lake Michigan. Through 2011, 353 bird species have been recorded and has made this a popular destination for birders throughout Michigan and the Midwest for many years.

The Lake Michigan Water Trail- Southwest include:

- 29 public access launching sites and 8 rest areas available for paddlers along the Lake Michigan water trail
- 5 campgrounds located at shoreline access sites along the Lake Michigan water trail.
- 4 major river systems that provide access to an additional water trails.



Other Southwest Michigan Water Trails include:

- 27 inventoried public access launching sites available for paddlers along inland water trails
- 5 inventoried campgrounds located at shoreline access sites along water trails.

ACCESS TYPE	Total
Alternate	0
Carry-In	36
Developed	20
Other	0
Rest Stops	8
Grand Total	64

Water Trail Segments - West Michigan

West Michigan Segment

The West Michigan Water Trail is an extension of the West Michigan Blueways/Greenways Plan (Phase I and Phase II). The plans are available at www. wmsrdc.org under Publications and Resources. The West Michigan Blueways/Greenways Plan describes and maps the region's recreation-based green infrastructure assets, including public greenspace, water access, population, demographic and economic analysis, and land cover for Muskegon, Oceana and Mason Counties. It addresses West Michigan's vision to protect and preserve public access to the region's abundant natural resources and assists local governments in the continued preservation of green infrastructure and public access.

ACCESS TYPE	Total
Alternate	24
Carry-In	60
Developed	58
Other	0
Rest Stops	2
Grand Total	144

The West Michigan Water Trail extends from the Lake Michigan Recreation Area north of Ludington (Mason County) to Tunnel Park in southern Ottawa County. The water trail lies within portions of Mason, Oceana, Muskegon, Kent and Ottawa counties. The West Michigan coastline features 105 miles of Lake Michigan public beaches, large sand dunes, forests, wetlands, lakes and streams. Lake Michigan provides access to 4 major river systems, scenic lakes, harbors, natural areas, working waterfronts, and federally designated wild and scenic rivers. The Grand River (Michigan's longest) and the Muskegon River (Michigan's second longest) enter Lake Michigan through West Michigan.

The Lake Michigan Water Trail- West includes:

- 39 public access launching sites and 2 rest areas available for paddlers along the Lake Michigan water trail
- 15 campgrounds located at shoreline access sites along the Lake Michigan water trail.
- 4 major river systems that provide access to an additional water trails.

Other West Michigan Water Trails include:

- 103 inventoried public access launching sites available for paddlers along water trails
- 4 inventoried campgrounds located at shoreline access sites along water trails.



Water Trail Segments - Northwest Michigan

Northwest Michigan Segment

The Northwest Michigan portion of the Lake Michigan Water Trail extends across more than 350 miles of shoreline in seven counties in northwest Lower Michigan. From north to south these include: Emmet, Charlevoix, Antrim, Grand Traverse, Leelanau, Benzie and Manistee Counties.

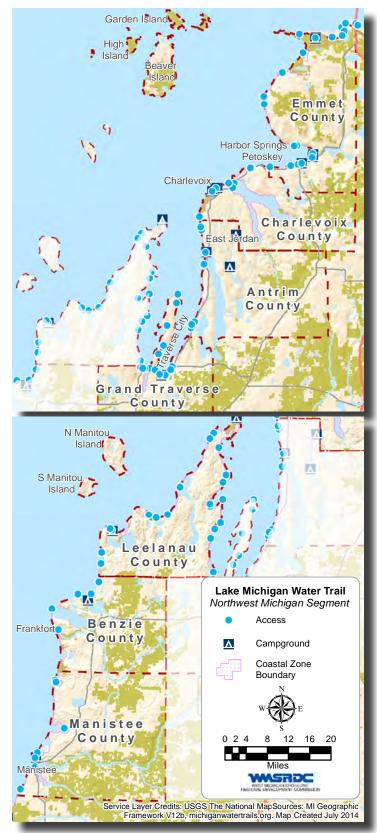
ACCESS TYPE	Total
Alternate	11
Carry-In	98
Developed	42
Other	17
Rest Stops	25
Grand Total	193

In total, the water trail connects 56 communities across the region including: 6 cities, 6 villages, and 36 townships. This portion of the Lake Michigan Water Trail includes access to 9 rivers and 14 lakes. Two inland water trail systems- the Inland Lakes Water Trail and Inland Waterway- link up in Elk Rapids and Petoskey. Both of these systems have access to several inland rivers and lakes along their length.

The northern limit of the trail begins in the shadow of the Mackinaw Bridge at Colonial Michilimackinac State Park (Emmet County). This reconstructed fort and fur trading post was founded in 1715. The site includes the fort as well as Mackinac Point Lighthouse. The trail continues on, following along peninsulas and bays across more than 350 miles of shoreline. This shoreline is dotted with several resort communities, cites and villages, orchards, beaches, vineyards, lighthouses, islands and natural areas. The southern limit of the trail extends just beyond the "Victorian Port City" of Manistee (Manistee County) which links to several access sites in Manistee Lake and along the Manistee River.

The Lake Michigan Water Trail - Northwest includes:

- 168 public access sites
- 16 campgrounds located at shoreline access sites
- 9 major river systems that provide access to additional water trails.



Water Trail Segments - Upper Peninsula

Upper Peninsula Segment

The Upper Peninsula Water Trail is an extension of the Lake Huron Blueways planning effort completed in 2012 (www.lakehuronrec.com). The Blueways Plan maps and describes the recreation-based infrastructure assets along the Lake Huron shoreline in Chippewa and Mackinac Counties of the Eastern Upper Peninsula.

ACCESS TYPE	Total
Alternate	0
Carry-In	22
Developed	17
Other	12
Rest Stops	6
Grand Total	57

The Lake Michigan Water Trail - UP extends from the city of St. Ignace, west of the Mackinac Bridge, to Menominee County in the Central Upper Peninsula. This segment lies within Mackinac, Schoolcraft, Delta and Menominee counties. It includes 70 miles of sandy, public beaches and forested dunes in Mackinac County, 40 miles in Schoolcraft County, 140 miles in Delta County, and 40 miles in Menominee County.

The Upper Peninsula segment of the Lake Michigan Water Trail features access to 15 major river systems, scenic lakes, harbors, natural areas, working waterfronts, and federally designated wild and scenic rivers. The Menominee, Escanaba, Rapid, Manistique, Millecoquins, Brevoort, Black, and Cut Rivers all enter Lake Michigan through segments of the Upper Peninsula Michigan Water Trail.

The Lake Michigan Water Trail - UP includes:

- 51 public access sites available for paddlers.
- 10 campgrounds located at shoreline access sites.
- 15 major river systems that provide access to additional water trails.



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Enhancement Zone Analysis

The Lake Michigan Water Trail contains more than 287 public access sites, 55 campgrounds, and a wide variety of natural, cultural and historic attractions and amenities. The inventory of LMWT public access points has been analyzed to identify gaps or additional needs of public access and camping. The goal of this analysis is to identify which segments of the trail should be targeted for improvement. The built-out Lake Michigan Water Trail should have no more than five miles between sites with restroom access and no more than ten miles between sites with public camping.

The inventory of existing sites was analyzed for its capacity to provide public access to water, public access to the shoreline from the water, and access to public camping sites. As the maps show, there are already many locations along Michigan's Lake Michigan shoreline that are suitable launching points for day trips. More than 287 public locations offer some level of lake access. However, many portions of the coastline that would benefit from improved access and amenities. Detailed information about each access site, amenities, attractions and campgrounds is available at www.michiganwatertrails.org.

Overall, the greatest need is for more:

- public camping sites
- secure lockups for paddlecraft
- additional public restrooms and universal access features
- ADA accessible launch ramps and lifts to make the water trail more accessible to people with a variety of abilities.
- Visible wayfinding and interpretive con-

servation signage at access sites

 Paddler friendly soft access features near existing motorized/paved boat launch ramps

A goal of the LMWT Advisory Group is to have a minimum of one ADA accessible launch ramp in each harbor.

The Regional Enhancement Zone Maps show segments that could be targeted for trail development. Each segment is described in the corresponding table. The gaps of most concern are the trail segments longer than five miles with public access but not restrooms, and the segments longer than ten miles without public camping availability.

Gap Analysis Criteria

Each Regional Enhancement Zone gap analysis is based on, at a minimum, the following criteria:

- The presence of public access sites with restrooms within each five-mile stretch of the Lake Michigan shoreline.
- The presence of a public campground at access sites within each ten-mile stretch of the Lake Michigan shoreline.
- Conservation and wayfinding and interpretive signage that faces both ways (water and land access).

Enhancement Zones - Southwest Michigan

Access Sites

Each zone begins and ends at a public access site with a restroom. Restrooms may be year-round, seasonal, pit or flush. Additional access sites located between these sites may be developed for a variety of public outdoor recreational purposes, but do not provide restrooms.

Zone	Length (miles)	Begin and Sites with	End Public Access Restrooms	
A	9.7	Tunnel County Park	Oval Beach Saugatuck Lake Michigan	
Michiga access State F have b	This is one of the longest gaps along the Lake Michigan coast in southwest Michigan without an access site with bathrooms. Saugatuck Dunes State Park (a resting stop along this gap) does have bathrooms, but they are a long hike from the water's edge.			
В	11.7	Westside Park	Packard Park-City of South Haven	
coast i site wi making rooms ing sto	This is the longest gap along the Lake Michigan coast in southwest Michigan without an access site with bathrooms. This stretch has high bluffs making public access difficult. There are bath- rooms at Casco Township Nature Preserve (a rest- ing stop); however, one must climb several stairs to reach them.			
С	7	Hagar Township Park	Jean Klock Park- Benton Harbor	
This gap would need to be addressed with the purchase and development of a park. The only public park in this stretch is Rocky Gap (which is only 0.4 miles from Jean Klock Park.				
D	6.3	Lions Park-St. Joseph	Lincoln Township Park	
This gap could be addressed with making public areas such as Glenlord Beach accessible from the beach/water and developing restrooms. Because of the high bluff, this site would only provide a resting stop with bathrooms and not an access to launch.				
E	5.7	Lincoln Township Park	Weko Beach	

This gap is not a concern as it is just over the 5 mile goal.

-			
F	10.5	Warren	New Buffalo Beach
		Dunes	
		State	
		Park	

This is one of the longest gaps along the Lake Michigan coast in southwest Michigan without an access site with bathrooms. There are bathrooms at the Cherry Street Beach resting stop, but it is not an ideal access/launching spot because of the stairs.

Total Access Gap Miles: 51



Enhancement Zones - Southwest Michigan Continued

Campgrounds

Each zone begins and ends at a campground that provides public access. Campgrounds are not necessarily located immediately on the shoreline, but are present somewhere within the public access area.

Zone	Length (miles)	Begin and End Public Access Sites with Restrooms		
G	31.7	Holland State Camp- ground	Van Buren State Park Campground	
In this stretch, there may be opportunities to develop and offer camping at Saugatuck Dunes State Park, West Side County Park or Casco Town- ship Nature Preserve. In addition, there are lodging options at both the Saugatuck and South Haven harbors and along the coast at Bed and Breakfasts.				
Η	28.1	Covert Park Beach & Campground	Weko Beach Campground	
In this stretch, there are not many parks ap- propriate for campground development. There are lodging options at the St. Joseph harbor and along the coast at Bed and Breakfasts.				
I	15.6	Warren Dunes State Campground	MI/Indiana Border	
priate lodging	this stretch, there are not many parks appro- ate for campground development. There are ging options at the New Buffalo harbor and ng the coast at Bed and Breakfasts.			
Total Campground Gap Miles: 75.4				



Access Sites

Each zone begins and ends at a public access site with a restroom. Restrooms may be year-round, seasonal, pit or flush. Additional access sites located between these sites may be developed for a variety of public outdoor recreational purposes, but do not provide restrooms.

Zone	Length (miles)			
A	6	Magoon Creek Natural Water Access	Lake Michigan Recreation Area-MNF	
This zone begins in Southern Manistee County in the Northwestern region and extends into the Northern part of Mason County. The Manistee National Forest runs the length of the gap zone providing undeveloped public access to water trail users. This gap could be improved with the addi- tion of public access and restroom facility within the Mainistee National Forest area.				
В	6.4	Lake Michigan Recreation Area-MNF	Big Sable Lighthouse Ac- cess	
The zone extends through the Southern part of the Mainistee National Forest into Ludington State Park. The Nordhouse Dunes Wilderness Camp- ground Area provides the best opportunity for im- proved access and restrooms as foot trails already exist to the Lake Michigan Shoreline from the designated camping area. However, as the only nationally designated wilderness area in the Lower Peninsula, improved access may not be desired or feasible in the area.				
С	7.4	Big Sable Light- house Access	Stearns Park	
The zone is the second largest access gap zone along the West Michigan section of the Lake Michigan Water Trail. Additional access is available about 3.2 miles south of the Big Sable Lighthouse Access site at the North Ludington State Park Pull- off and may benefit from access improvements				

off and may benefit from access improvements and the addition of a restroom facility. Additional access is also available at the Ludington State Park South Pull-off and may also be a good candidate for access improvements at either of the two additional access sites in the zone would reduce the access gap to under 5 miles.

Zone	Length (miles)	Begin and End I Sites with Rest	Public Access rooms
D	6.6		Summit Town- ship Park

This zone presents unique access challenges as the Ludington Pumped Storage Facility is located within this gap zone. Water trail users are strongly discouraged from traversing around the facilities' safety barrier and are prohibited from crossing into the safety zone altogether. Pick-up zones are available at Buttersville Beach Access approx. 2.7 miles North of the facility and also at Summit Township Park located approx. 2.4 miles south of the facility. This zone would benefit from additioanl access just north and south of the safey zone as well as from the addition of a more permanent portage solution for water trail users.

E	Cedar Point County Park Ac-	Golden Town-
	County Park AC-	Ship Park AC-
	cess	cess

Zone E begins 3 miles north of the northern edge of Silver Lake State Park and extends to just south of Silver Lake State Park in Golden Twp. Recommended enhancements include the addition of a restroom facility at the Harrison Road Access site located appoximately 2 miles from the Cedar Point County Access site, which would reduce the access gap length to below 5 miles. Silver Lake State Park offers nearly 5 miles of public access to water trail users though access improvements are not recommended due to steep sand dunes and potential conflict with off-road recreational vehicles within the park's designated ORV areas. The extent of the state park shoreline may benefit from the addition of designated rest areas.

F		Point Light-	Lake Michigan Oval Park Ac- cess
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This zone begins in Golden Township and extends South through to the Southern edge of Benona Township. No rest stops or alternative access sites lie within this gap zone and the majority of the land is privately-owned, with low-density housing scattered through areas adjacent to the shoreline. To improve this zone, communities may need to consider the acquisition of property for access site development along the Lake Michigan Shoreline. Road endings may also be good candidates for additional access though no road endings were specifically identified as good candidates for improvements during this analysis.

Enhancement Zones - West Michigan Continued

Zone	Length	Begin and End	Public Access
	(miles)	Sites with Rest	rooms
G	6.1	U U	Medbery Park Access

This zone begins near the Northern edge of White River Twp. in Muskegon County and extends to the White Lake Area. Carry-in access is available at the Lloyd's Landing at Old Channel Inn Access site though no restrooms are currently available. Lloyd's Landing could be improved to include restroom facilities however, the additional access is recommended at a site approx. half of the distance between the Northern and Southern Access sites. Land use patterns similar to those found in gap zone F are present in this zone with much of the land along the Lake Michigan Shoreline privately owned with low-density residential scattered throughout. Road endings may be good candidates for additional access though site acquisition may be necessary to increase public access.

Н	6	Duck Lake State	Muskegon
		Park Access	County Pioneer
			Park Access

This zone begins in Fruitland Township and extends into Laketon Township and is one of the shortest along the West Michigan Segment of the Lake Michigan Water Trail. No additional access or public property was identified along this stretch of shoreline. Recommended improvements to this zone include the addition of an access site with restroom. Public road endings, such as the McMillan Road Ending, may be good candidates for additional access or minor improvements to accommodate water trail users & to access local restaurants. However, local ordinances currently prohibit access to Lake Michigan.

I	0	Tunnel County
	DNR Ramp	Park

This is the longest access gap zone along the West Michigan section of the Lake Michigan Water Trail. Kouw Park was identified as a rest stop for water trail users. Riley Street Beach and James Street Road ending were identified as additional access sites within this zone. Recommended improvements include the addition of restroom facilities at Riley Street Beach or at the James Street Road ending or access improvements at Kouw Park where many amenities, including restrooms, already exist. Improvements at Kouw Park or the other identified access sites would reduce the access gap to less than 5 miles.

Total Access Gap Miles: 59.3



Enhancement Zones - West Michigan Continued

Campgrounds

Each zone begins and ends at a campground that provides public access. Campgrounds are not necessarily located immediately on the shoreline, but are present somewhere within the public access area.

Zone	Length			
	(miles)	Sites with Rest	Public Access rooms	
J	11.4	Buttersville Campground	Charles Mears State Park-Mears Modern	
Ludingt improve facility Non-mo	on Pumped ed by deve and provid	Summit Township F Storage facility. The loping access on either ing for portage or or tercrafts are discour facility.	is area could be her side of the h-land transport.	
К	19.6	Charles Mears State Park-Mears Modern	Claybanks Town- ship Park-Camp- ground	
This is one of the longest zones along the West Michi- gan Portion of the Lake Michigan Water Trail stretching from Charles Mears State Park to Claybanks Township Park. Silver Lake State Park Campground is located within this zone, but is located about 2 miles inland from Lake Michigan. Additional camping along Lake Michigan would improve this zone.				
L	12.9	Muskegon Cnty Meinert Park	Muskegon Cnty Pioneer Park	
through zone ale Lake Ar would b along L access	This zone includes Duck Lake State Park and passes through the White Lake area and is the shortest gap zone along the West Michigan Water Trail. The White Lake Area provides lodging opportunities but the area would benefit from additional camping opportunities along Lake Michigan. Duck Lake State Park offers good access to water trail users and may be a good candi- date for a campground area.			
Μ	19.5	Grand Haven State Park Camp- ground	Holland State Campground	
This is one of the longest zones along the West Michi- gan portion of the Lake Michigan Water Trail and includes a number of access sites such as the Rosy Mound Natural Area, Kirk Park and Tunnel Park. These public access sites may be candidates for site improve- ments that include a campground or accommodations for water trail users though this may not be desired or feasible. To reduce the gap zone, a campground facility could be located about mid-way between Grand Haven State Park and Holland State Park or at one of the nu- merous public access sites identified along this stretch. Total Campground Gap Miles: 63.4				



Access Sites

Each zone begins and ends at a public access site with a restroom. Restrooms may be year-round, seasonal, pit or flush. Additional access sites located between these sites may be developed for a variety of public outdoor recreational purposes, but do not provide restrooms.

Zone	Length (miles)	Begin and End Public Access Sites with Restrooms		
A	9	Wilderness State Park-Wau- gochance Point Parking	Wilderness State Park- Sturgeon Bay Picnic Area	
Park. F users of at the provide	Restrooms could be lo mouth of e access fi	ne within the Wild for trail users and ocated along Sturg Little Sucker Cree from the rest stop with the State Pa	d for water trail geon Bay Road k. This would named Stur-	
В	6.4	Wilderness State Park-Stur- geon Bay Picnic Area	Port of Cross Village Access	
Restroom facilities could be located at or near the Sturgeon Bay Roadside access location to serve beachgoers as well as water trail users. This site is within the Wilderness State Park boundaries.				
С	6.7	Port of Cross Village	Readmond Township Beach Reserve Access	
No public access sites have been identified be- tween the Port of Cross Village and Readmond Township Beach Reserve. The Rosen Family Na- ture Preserve is located just north of the intersec- tion of Scott Road and M119 and across from the Scott Family Nature Preserve. If restroom facilities by the shoreline at the Rosen Family Nature Pre- serve are an allowed and acceptable improvement on the parcel, this could serve as an important location for trail users.				
D	13.6	Middle Village Park Access	Zorn Park Ac- cess	
Iocation for trail users.D13.6Middle VillageZorn Park Ac-				

Nature Preserve. There are restrooms located at

the preserve, but are located in a convenient location for trail users away from the shoreline. The Little Traverse Conservancy and West Traverse Township could consider wayfinding signage pointing water trail users to the existing restrooms and encouraging a donation, or the existing restroom could be relocated to a spot that is convenient to users of the preserve trails, as well as water trails.

users of the preserve trails, as well as water trails.				
E	4	Michigan Beach Water Access	Fisherman's Is- land State Park North Camp- ground Access	
could h during	nave a sea spring, su	eshore Drive boat isonal restroom br ummer and fall mc and paddlers.	ought on-site	
F	7.3	Fisherman's Is- land State Park South Camp- ground Access	Norwood Township Park Access	
Park co	ould benef	tent of Fisherman' ît from a restroom d any future land-	n located near	
G	12.6	Torch Bay Na- ture Preserve Water Access	North Beach Water Access	
as a gr cess re Milton serve a to one	Wilcox-Palmer-Shah Nature Preserve would serve as a great location for water trail users to ac- cess restroom facilities. Torch Lake Township and Milton Township also have several road ends that serve as public water access sites. Improvements to one or more of these sites would serve as important facilities to fill the 12.6 mile gap in this location			
Н	9.7	Antrim County Day Park-Elk Rapids Day Park Access	Bayside Park Water Access	
Maple Bay Natural Area and the Yuba Park Road road end site could serve as sites for restroom facilities in the stretch between Antrim County's Elk Rapids Day Park and Bayside Park in Acme Township.				
I	10.1	Archie Park Wa- ter Access	Haserot Park Boat Launch	
The shoreline between Archie Park and the Hase- rot Park boat ramp site in Peninsula Twp is pre- dominantly private residential property.				

Enhancement Zones - Northwest Michigan Continued

Zone	Length (miles)	Begin and End Sites with Rest		Signa	ge pointin	s by installing resti g water trail users	to nearby ame-
		r development of				ne convenience sto se locations.	re could also be
		cilities within this I		instal	ied at thes		•
		e otherwise made available for		N	9.1	Omen Beach	Northport
public	r	r	r			Water Access	Marina Water
J	11.8	Old Mission	Bowers Harbor				Access
		Point Park Wa- ter Access	Boatramp			horeline from Ome a is predominantly	
The sh	oreline be	etween Old Missior	Point Park and			esorts and private	-
		oor boat ramp site				rivate marinas in t	
		ominantly private				h these private fac	
		tunities for develop				s could provide par	ddiers along the
		other facilities wit				these facilities.	
	r public u	arcels are otherwis	se made avail-	0	18.2	Northport	Christmas
	<u> </u>					Marina Water	Cove Park Ac-
К	9.9	Bowers Harbor	Bryant Park			Access	cess
		Boatramp	Water Access			istance between N	•
		etween the Bowers				Cove could be cut i	
		t Park in Peninsula				vere easily availab	
		rivate residential				au State Park. Sigr	
		evelopment of put				g park facilities, as are easy solution	
		s within this leg ar rwise made availa			1		i i
use.		i wise made avalia	ble for public	Р	11.5	Peterson Park	Leland Harbor
	6.7	Elmwood Town-	Doughov Dark			Access	Access
L	0.7	ship Beach and	Boughey Park Water Access			etween Peterson P	
		Harbor and	Water Access			eelanau and Lelar	-
		Water Access			J .	private residential levelopment of pul	
	I DOT roads	side parks are loca	ted along the			s within this leg ar	
		en M-22 and West	<u> </u>			erwise made availa	
		Township. Roadsid				n could include ins	•
		thern park, is large				es at Onomonee B	
parkin	g spaces a	available making it	the most suit-	Q	6.1	Van's Beach	Good Harbor
		nal restroom facilit	3				Beach Access
•		es access to the w	ater and picnic	Facilit	ies access	ible to water trail u	
tables,	inviting p	people to linger.				Inde to water train to	
Μ	5.1	Suttons Bay	Graham			oom gap in this le	
		Village Marina	Greene Park			between Van's Be	
		Park Water Ac-				Leland and Cleve	
		cess		is pre	dominantl	y private residenti	al property. Op-
The Ey	aawing M	useum and Cultura	al Center and			levelopment of pul	
		ld serve as importa				s within this leg ar	
		ions for users of t			Is are othe	erwise made availa	ble for public
	-	useum location wo		use.		1	ř.
		I designated trail f		R	10.8	Good Harbor	Glen Haven
		entrance that is fre				Drive Access	Beach Access
		long the shoreline.					
also co	Julu serve	park and beach u	sers, as well as				

Enhancement Zones - Northwest Michigan Continued

Zone Length Begin and End Public Access (miles) Sites with Restrooms

The steep dunes and limited trails around the Pyramid Point area limit the necessity for restrooms in this area. Most of this area is inaccessible by car which also limits the ability of water trails users to piggy back on other facility amenities. There is one facility at the Pyramid Point trailhead parking area which is one of the important visitor spots near Pyramid Point, however this is separated from the water trail by a steep bluff and a long hike.

S	Glen Haven Maritime Mu-	North Bar Lake Launch
	seum	

The Sleeping Bear Dune covers the shoreline of this leg. The unique topography in this location makes the installation of any facilities impractical and undesirable.

Т	5.9	Lake Twp Park	Point Betsie
		Water Access-	Lighthouse
		Sleeping Bear	Water Access
		National Lake-	
		shore	

The shoreline between Lake Township Park and Point Betsie Lighthouse in Lake Township is predominantly private residential property or fragile dunes. Opportunities for development of public water access or other facilities within this leg are limited.

U	11.6	Frankfort Beach	Grebe Park Ac-
		Water Access	cess

The topography and steep dune bluffs along the Lake Michigan shoreline limit the development of facilities from Frankfort Beach to the MDNR Lower Herring Lake boat launch. Restroom facilities in this location would provide a stop at about halfway between Frankfort Beach and the next nearest facilities at Arcadia Beach Natural Area.

V	12.5	Arcadia Natural	Onekama Vil-
		Beach Access	lage Park
Grebe	Park to Or	nekama Village Pa	rk. Seasonal re-

strooms at 13 Mile Road end would provide facilities at a point near halfway between the Arcadia and Portage Lake areas. Facilities at the MDNR Portage Lake boat launch would also provide a convenient location for paddlers entering or exiting the Portage Lake area.

Total Access Gap Miles: 205.1



Campgrounds

Each zone begins and ends at a campground that provides public access. Campgrounds are not necessarily located immediately on the shoreline, but are present somewhere within the public access area.

	Length (miles)	Begin and End Public Access Sites with Restrooms		
W	45.7	Lakeshore Campground- Wilderness State Park	Dunes Camp- ground	
The Lake Michigan shoreline in Emmet County primarily consists of privately owned residential property. There are few public access sites along the shoreline, each with limited potential for host- ing campsites. Limitations include the intended nature of the sites (natural area or rural park), bluffs and steep terrain, and limited accessibility by road.				
X	21.2	Magnus Park Campground	Fisherman's Island North Campground	
u u 13		TOULO STATE PACK	on Lake Char-	
levoix campir West P Emme that Ea	which also ng might k Park in Res t County F ast Park ha	p provides camping be a possibility at l sort Township, Em Parks and Recreati as a regional servi	East Park or met County. The on Plan states ce area and all	
levoix campir West P Emme that Ea	which also ng might k Park in Res t County F ast Park ha	p provides camping be a possibility at l cort Township, Emp Parks and Recreati	g. Limited East Park or met County. The on Plan states ce area and all	

Z	29.5	5	Traverse City State Park
		ground	Campground

Much of the local camping needs of the communities between Lake Michigan and Torch Lake are served by the Barnes County Park or Thurston Park in Central Lake which is only five miles inland. Many other privately owned campsites line Torch Lake and Elk Lake which serve to fill the local camping demand.

AA	94.7	Traverse City	Leelanau State
		State Park	Park Camp-
		Campground	ground

Due to the geography of the Grand Traverse Bay area, more campsites may be called for in our requirements than be necessary. The shoreline doubles over on itself three times near Traverse City due to the Old Mission Peninsula. There are campsites available in the immediate area at Traverse City State Park and on Power Island in West Grand Traverse Bay. The Suttons Bay community has contemplated the idea of installing a camping area in the village or in the township near the village. This would provide facilities at a convenient location for paddlers along the trail.

AB			D.H. Day Campground
----	--	--	------------------------

Expanded camping opportunities along the Lake Michigan shoreline between Leland and Glen Arbor is primarily through the Sleeping Bear Dunes National Lakeshore. Campsites are placed at strategic locations to protect the natural landscape and nearly half of the park was further protected as dedicated wilderness through the National Wilderness Preservation System earlier this year.

AC	15.4	D.H. Day Camp- ground	Platte River Campground Sleeping Bear Dunes National Lakeshore
----	------	--------------------------	--

The overwhelming majority of shoreline from the D.H. Day Campground to the Platte River Campground is within the Sleeping Bear Dunes National Lakeshore. Campsites are placed at strategic locations to protect the natural landscape and nearly half of the park was further protected as dedicated wilderness through the National Wilderness Preservation System earlier this year.

Enhancement Zones - Northwest Michigan Continued

Zone	Length (miles)	Begin and End Sites with Rest	
AD	38.1	Platte River Campground Sleeping Bear Dune National Lakeshore	Orchard Beach State Park Campground

There is ample opportunity to provide camping along the shoreline in Benzie and Manistee Counties. The existing public campsites are more than 13 miles inland on small lakes or along rivers. Camping near Frankfort and Elberta, and on Lower Herring Lake, Arcadia Lake and Portage Lake each would provide convenient camping locations along the trail well within the 10 mile suggested distance.

AE		Lake Michigan Recreation
	Campground	Area-Manistee
		N.F.

Orchard Beach State Park is located within Manistee Township just north of the City of Manistee. The area south of the State Park covers the City of Manistee and Filer Township. Filer Township owns two park properties on Lake Michigan- Sundling Park and Magoon Creek Natural Area. Sundling Park is a 66' wide strip of land with minimal improvements. Magoon Creek Natural Area may have suitable area near the trails for campground development if that use is compatible with surrounding land uses and the nature of the natural area itself.

Total Campground Gap Miles: 313



Enhancement Zones - Upper Peninsula

Access Sites

Each zone begins and ends at a public access site with a restroom. Restrooms may be year-round, seasonal, pit or flush. Additional access sites located between these sites may be developed for a variety of public outdoor recreational purposes, but do not provide restrooms.

Zone	Length (miles)	Begin and End Public Access Sites with Restrooms		
А	7.7	Stoney Point Launch (draft)	Bailey County Park	
		nclude ADA Access blic campground.	ibility and the	
В	8.4	Kleinke County Park	Cedar River Mouth Ramp	
Cedar ground		rovements include	a public camp-	
С	24.8	Fox County Park	Ludington Beach Access	
dingtor campg	Fox County Park needs ADA improvement. Lud- dington Beach improvements include a public campground: Fuller Campground on Bark River near Escanaba may be an option.			
D	15.4	Rapid River DNR Launch	Farmers Dock DNR Access Site	
Both si proven		ADA and public ca	mpground im-	
E	26.1	Farmers Dock DNR Access Site	Ogontz Bay DNR Launch	
Both si proven		ADA and public ca	mpground im-	
F	7.9	Nahama Boat Ramp	Little Fishdam River Ramp	
Both sites need ADA and public campground im- provements. Little Fishdam River Ramp is operated by Indian River State Park, which has a campground just north of Lake Michigan.				
G	9.9	Garden Town- ship Park	Garden Bay Boat Launch	
Both sites need ADA and public campground improvements.				

Н	16.7	Garden Bay Boat Launch	Sac Bay Beach		
	Both sites need ADA and public campground im- provements.				
I	48.7	Sac Bay Beach	Portage Bay Campground Access Point		
		ADA accessibility. ed with a public ca			
J	23.1	Portage Bay Campground Access Point	Thompson Creek DNR Ac- cess		
Thomp	Both sites need ADA Accessibility. Thompson Creek could be improved with a public campground.				
К	5.8	Thompson Creek DNR Ac- cess	Manistique City Boardwalk		
		c could use ADA ac d possibly a public			
L	50.4	Manistique City Boardwalk	Naubinway Rest Area		
No add	litional rea	commendations.			
М	15.9	Naubinway Harbor	Hog Island Point Access		
Harbor	Both sites need ADA improvements. Naubinway Harbor has a small grassy area where tents could be setup.				
N	33.8	Hendricks Township Campground	McGuplin Point Access		
This ga	ap crosses	into the lower pe	ninsula.		
Total	Access G	ap Miles: 294.6			

Enhancement Zones Continued - Upper Peninsula



Enhancement Zones - Upper Peninsula Continued

Campgrounds

Each zone begins and ends at a campground that provides public access. Campgrounds are not necessarily located immediately on the shoreline, but are present somewhere within the public access area.

Zone	Length (miles)	Begin and End Public Access Sites with Restrooms		
0	86.3	MI/Wisconsin Border	Noquet Na- tional Forest Campsites	
	There are no current enhancements recommend- ed for this zone.			
Ρ	146.3	Noquet Bay National Forest Campsites	Woodstar Beach Camp- ground	
	There are no current enhancements recommend- ed for this zone.			

Q	47.6	Woodstar Beach Campground	Big Knob Campground
	are no cur this zone.	rent enhancemen	ts recommend-
R	36.1	Big Knob Camp- ground	White Tail Re- sort RV Park
	are no cur this zone.	rrent enhancemen	ts recommend-
S	34.8	White Tail Re- sort RV Park	Lakeshore Campgound- Wilderness State Park
There are no current enhancements recommend- ed for this zone.			
Total	Campgro	und Gap Miles: 3	351.1



Michigan Great Lakes Water Trail Website

Public Tool for Planning Paddling Trips

The Michigan Great Lakes Water Trail Website (MGLWT) is a public tool for planning paddling trips around the Great Lakes in Michigan. The website provides user-friendly information about the locations and amenities at access sites and community information about paddler-friendly lodging, restaurants, rentals, attractions. The website can be used to plan Lake Michigan Water Trail trips, regional trips or local trips within navigable rivers that connect to Lake

Michigan and the Great Lakes. Detailed information about access sites on Lake Michigan and its connecting lakes, harbors and rivers is available on the Michigan Great Lakes Water Trails website (www. michiganwatertrails.org).



Lake Michigan Water Trail - Local Government Plan Model Language

This model language was developed by the Lake Michigan Water Trail Advisory Group with support from the Michigan Department of Environmental Quality Office of the Great Lakes Coastal Zone Management Program.

The language may be considered for use in local recreation or master plans as a means to support local water trail planning and implementation efforts.

A standard definition of a water trail is provided along with brief summaries for the Lake Michigan Water Trail and for four Regional Water Trail systems in Michigan.

Also provided is a suite of language options that can be considered for adoption in local recreation plans under the categories of Resource Inventory, Vision, Goals and Objectives and Action Program.

Standard Water Trail Definition:

Water trails are recreational routes on waterways with a network of public access points supported by broad-based community partnerships. Water trails provide both conservation and recreational opportunities (NPS, MIDNR).

Lake Michigan Water Trail Definition and Description:

The Lake Michigan Water Trail spans more than 760 miles of Michigan's Lake Michigan shoreline. From its western-most access point in Michigan's Upper Peninsula, south along the Lake Michigan shoreline to Indiana, the trail includes:

- 287 public access sites available for paddlers
- 55 campgrounds located at shoreline access sites
- The Lake Michigan Watershed includes 32 major river systems that provide access to additional water trails in Michigan.

When completed, the Lake Michigan Water Trail will offer safe, legal and adequate access around the four Great Lakes States of Michigan, Wisconsin, Illinois and Indiana. The 1,600 mile long Lake Michigan Water Trail will be the longest continuous- loop water trail in the world. Wisconsin completed detailed inventories for access to Lake Michigan in support of trail development. In 2011, 75 miles from Chicago to New Buffalo was designated as the Lake Michigan Water Trail National Recreation Trail by the National Parks Service. In 2014, Michigan's Regional Planning Councils completed inventories of access sites along the Lake Michigan shoreline from Wisconsin to Indiana. There are approximately 287 paddler-friendly, public access sites along the Lake Michigan shoreline harbors, lakes and rivers. More information can be found at www. michiganwatertrails.org.

Regional Water Trail Definitions

Lake Michigan Water Trail - South West:

The Southwest Michigan Water Trail extends for about 90 miles of shoreline, beginning at the Indiana state line near New Buffalo, Michigan and extending north to Kirk Park in West Olive, Ottawa County. The 90 miles of shoreline includes 14 miles of parklands, 48 miles of sand dunes, 35 miles of forest and 36 miles of high bluffs. The following counties are along the Southwest Michigan Lake Michigan Water Trail: Berrien, Van Buren, Allegan and Ottawa.

The Southwest Michigan Water Trail connects 24 municipalities including: 7 cities, 4 villages, and 15 townships. The southwest shoreline provides access to 4 major river systems and one lake: the Galien River (New Buffalo), St. Joseph River (St. Joseph/Benton Harbor), Black River (South Haven), Kalamazoo River (Saugatuck/Douglas) and Lake Macatawa (Holland). There are three established water trails on connecting rivers: Galien River Marsh Trail, Bangor to South Haven Heritage Water Trail on the Black River, and Kalamazoo River Heritage Water Trail.

The shoreline is very scenic with its sand dunes, forests, wetlands and miles of sandy beaches. Along the way, tourist/beach towns are marked with historic lighthouses including New Buffalo, St. Joseph, South Haven, Saugatuck and Holland. Southwest Michigan leads the world in non-citrus fruit production and 70% of the crop diversity in the United States grows in Berrien County. Throughout southwest Michigan there are numerous wineries, u-picks, farmer's markets, and farm stands offering fresh produce and more. Southwest Michigan is a birding hot spot with its diverse medley of habitats and its proximity to the southern end of Lake Michigan.

The Lake Michigan Water Trail - Southwest includes:

- 29 public access launching sites and 8 rest areas available for paddlers
- 5 campgrounds located at shoreline access sites
- 4 major river systems that provide access to an additional water trails.

Lake Michigan Water Trail - West

The West Michigan Water Trail is part of the Lake Michigan Water Trail. It features 105 miles of Lake Michigan shoreline from the Lake Michigan Recreation Area north of Ludington, south along Pentwater and Silver Lake State Park, on to 26 miles of sandy, public beaches and forested dunes in Muskegon County, through the Grand Haven area to Holland State Park. The West Michigan Water Trail features access to 4 major river systems, scenic lakes, harbors, natural areas, working waterfronts and federally designated wild and scenic rivers. The Grand River (Michigan's longest) and the Muskegon River (Michigan's second longest) both enter Lake Michigan through segments of the West Michigan Water Trail The Lake Michigan Water Trail - West includes:

- 39 public access sites available for paddlers
- 15 campgrounds located at shoreline access sites
- 4 major river systems that provide access to additional water trails.

Lake Michigan Water Trail - Northwest

The Northwest Michigan portion of the Lake Michigan Water Trail extends across more than 350 miles of shoreline in seven counties in northwest Lower Michigan. From north to south these include: Emmet, Charlevoix, Antrim, Grand Traverse, Leelanau, Benzie and Manistee Counties.

In total, the water trail connects 56 communities across the region including: 6 cities, 6 villages, and 36 townships. This portion of the Lake Michigan Water Trail includes access to 9 rivers and 14 lakes. Two inland water trail systems- the Inland Lakes Water Trail and Inland Waterway- link up in Elk Rapids and Petoskey. Both of these systems have access to several inland rivers and lakes along their length.

The northern limit of the trail begins in the shadow of the Mackinaw Bridge at Colonial Michilimackinac State Park (Emmet County). This reconstructed fort and fur trading post was founded in 1715. The site includes the fort as well as Mackinac Point Lighthouse. The trail continues on, following along peninsulas and bays across more than 350 miles of shoreline. This shoreline is dotted with several resort communities, cites and villages, or-chards, beaches, vineyards, lighthouses, islands and natural areas. The southern limit of the trail extends just beyond the "Victorian Port City" of Manistee (Manistee County) which links to several access sites in Manistee Lake and along the Manistee River.

The Lake Michigan Water Trail - Northwest includes:

- 168 public access sites available for paddlers
- 16 campgrounds located at shoreline access sites
- 9 major river systems that provide access to additional water trails.

Lake Michigan Water Trail - Upper Peninsula

The Upper Peninsula Water Trail is an extension of the Lake Huron Blueways planning effort completed in 2012 (www.lakehuronrec.com). The Blueways Plan maps and describes the recreation-based infrastructure assets along the Lake Huron shoreline in Chippewa and Mackinac Counties of the Eastern UP.

The Lake Michigan Water Trail - UP extends from the city of St. Ignace, west of the Mackinac Bridge, to Menominee County in the Central Upper Peninsula. This segment lies within Mackinac, Schoolcraft, Delta and Menominee counties. It includes 70 miles of sandy, public beaches and forested dunes in Mackinac County, 40 miles in Schoolcraft County, 140 miles in Delta County, and 40 miles in Menominee County.

Implementation - Appendix A Continued

The Upper Peninsula segment of the Lake Michigan Water Trail features access to 15 major river systems, scenic lakes, harbors, natural areas, working waterfronts, and federally designated wild and scenic rivers. The Menominee, Escanaba, Rapid, Manistique, Millecoquins, Brevoort, Black, and Cut Rivers all enter Lake Michigan through segments of the Upper Peninsula Michigan Water Trail.

The Lake Michigan Water Trail - Upper Peninsula includes:

- 51 public access sites available for paddlers
- 10 campgrounds located at shoreline access sites
- 15 major river systems that provide access to additional water trails

Resource Inventory

The following is a broad summary of resources that exist in some form throughout the entire length of the Lake Michigan Water Trail, and provides a brief snapshot of how local communities' recreational assets relate to a larger system.

Lake Michigan - The presence of Lake Michigan is an obvious water resource for communities and the entire State. Lake Michigan is the third largest Great Lake by surface area and the sixth largest freshwater lake in the world. Thirty Michigan cities are located along the shores of Lake Michigan. The Lake Michigan Water Trail provides the public with access to the shoreline and to connecting rivers and lakes.

Coastal Dunes - The windswept dunes gracing Michigan's Great Lakes Shoreline represent the largest collection of freshwater dunes in the world. The diversity of environmental elements wildlife, topographic relief, vegetation, habitats, and climatic conditions occurring within these landforms represent a phenomenon unique to the State of Michigan (MDNR). The presence of the Lake Michigan Water trail along the shoreline provides trail users with unique opportunities to experience this resource. Along the trail, there are numerous locations where sand dunes can be found and enjoyed in a way that is not disruptive to the fragile dune habitat.

Parks, Campgrounds, and Natural Areas - Michigan is home to over 240 state parks and campgrounds, putting each state resident within an hour's drive (Pure Michigan). Along the Lake Michigan shoreline, there are over thirty state parks and campgrounds, one national park, two national forest areas, and numerous local municipal parks, private parks and campgrounds. Each of these areas offer unique amenities including camp grounds, trails and pathways, designated biking and mountain biking areas, hunting lands, and fishing facilities.

Cultural Sites - Over sixty sites along the Lake Michigan Shoreline are designated by the National Parks Service as Historic Places. Many of these nationally designated historic places are lighthouses. Michigan has the most lighthouses of any state many of which of-

fer trail users tour opportunities to walk out and take in a view of Lake Michigan or the vastness of the shoreline (Pure Michigan). The Michigan State Historic Preservation Office has also designated historic sites along the shoreline, providing informational markers at many sites. Many sites are private, but markers have been erected at sites of shipwrecks, historically significant buildings or homes, lighthouses, and at other significant historic or archeological sites along the shoreline.

Transportation Assets

Multi-Use Trails & Bike Routes - Numerous local and regional trail systems link communities to the Lake Michigan Shoreline including two federally designated U.S. Bicycle Routes. U.S. 20 is an east-west 310 mile route connecting Marine City in East Michigan to Ludington in West Michigan. U.S. 35 is a north-south 505 mile route connecting New Buffalo at Michigan's Southern border to Sault Ste. Marie in the Upper Peninsula. This route connects through most cities along the shoreline, as well as smaller shoreline villages and townships. Ten multi-use local and regional trails run north and south along the Lake Michigan Shoreline and three create east and west connections in the Lower Peninsula. Three regional multi-use trails in the Upper Peninsula connect near shoreline communities.

Great Lakes Circle Tour – The Great Lakes Circle Tour is a designated, scenic road system connecting all of the Great Lakes and the St. Lawrence River. The Circle Tour road route is over 6,500 miles and is marked by distinctive green and white signs usually along the closest major road or highway to the Great Lakes shorelines. The tour was established by the Great Lakes Commission in cooperation with its eight member states and the province of Ontario, promoting travel and tourism along the shores of "North America's Fresh Coast."

Major Interstates or State Routes - Four major interstate highways run adjacent to the shoreline or connect to communities along Lake Michigan providing connections to the major population centers of Grand Rapids, Lansing, Ann Arbor, Detroit, Kalamazoo, Battle Creek, & Jackson to the East of the Lakeshore. From the South, interstate highways provide connections to Chicago, Gary, and Michigan City. One major US route runs along the lakeshore as well as three state highway systems. One state highway system on the Northwest shores of Lake Michigan connects the lakeshore to Green Bay.

Transit Systems - Seventeen transit systems operate along the Lake Michigan Shoreline, three of which operate fixed-route services in the urbanized cities of Benton Harbor, Holland, and Muskegon. A demand response or advanced reservation system is available in Grand Haven. The thirteen other transit systems operate in the non-urbanized communities along the lakeshore and are advanced reservation or demand response systems. Many of these transit systems provide access to the shoreline. Operating frequencies and hours vary widely. Most do not offer Sunday service or service on that day is limited.

Airports - Five airports with passenger air service are located along Lake Michigan, pro-

Implementation - Appendix A Continued

viding access to the Lake Michigan Shoreline from many Midwestern cities such as Chicago, Detroit, Grand Rapids, Milwaukee, and Green Bay to name a few. Charter service is offered at many of these airports providing greater convenience and options to those looking to travel to shoreline communities.

Ferries - Five ferries provide passenger service on Lake Michigan, two of which provide access to the cross lake destinations of Manitowoc, Wisconsin and Milwaukee, Wisconsin. The other three ferries provide access to Beaver Island, and the Manitou Islands.

Vision

The Lake Michigan Water Trail system reflects the abundance of water that defines Lake Michigan watershed communities throughout the Great Lakes Region. Citizens and visitors are able to explore coastlines and navigable waters through geographically dispersed water trails that offer a diversity of experiences including lengths, scenery, challenges, amenities and attractions.

Goals and Objectives

Goal: Embrace National Park Service National Water Trail Best Management Practice (BMP) criteria

Objectives

- 1. Establish public access points that provide recreational opportunities that ac commodate a diversity of trip lengths and provide access to a variety of opportunities for recreation and education.
- 2. Provide trail users with opportunities to learn about the value of water resources, cultural heritage, boating skills, and outdoor ethics
- 3. Provide opportunities for communities to develop and implement strategies that enhance and restore the health of local waterways and surrounding lands
- 4. Encourage community support and advocacy for maintenance and stewardship of the water trail
- 5. Provide the public with accessible and understandable water trail information, including details for identifying access and trail routes; cultural, historic, and natural features; hazards; and water quality. Promote the water trail to the community and broad national audience.
- 6. Demonstrate ability to support routine and long-term maintenance investments on the water trail and construct, design, and maintain facilities incorporating sustainability principles.
- 7. Maintain a water trail plan that describes a vision, desired future conditions, and strategies to strengthen best management practices.

Goal: Follow guidelines and enhancement recommendations contained in the Lake Michigan Water Trail Plan

Objectives

- 1. Provide Lake Michigan Water Trail users access to the shoreline every five miles along the Lake Michigan shoreline and/or in connecting rivers, lakes and harbors
- 2. Provide Lake Michigan Water Trail users access to restroom facilities every five miles
- 3. Establish universal access for Lake Michigan Water Trail users in every harbor and at sites where installation of universal access is feasible
- 4. Ensure camping or paddler-friendly lodging a minimum of every ten miles along the Lake Michigan Water Trail.

Action Program

Water Trail Development and Enhancements

- 1. Install signage or other amenities for canoe and kayak users for the West Michigan Water Trail (West Michigan Segment of the Lake Michigan Water Trail)
- 2. Install signage and amenities at access sites for kayakers for the West Michigan Water Trail/Lake Michigan Water Trail
- 3. Acquire land to provide additional access to the West Michigan Water Trail / Lake Michigan Water Trail for water trail use
- 4. Acquire land for additional parks with a special interest in Lake Michigan and the West Michigan Water Trail, river frontage, wetlands and other natural areas.

Lake Michigan Water Trail Best Management Practices

The Lake Michigan Water Trail Advisory Group embraced the principles of the National Park Service (NPS) Best Management Practices (BMP) to guide development of the Lake Michigan Water Trail. The implementation of BMPs are a requirement of NPS criteria for a National Water Trail designation (watertrails.nps.gov/WaterTrails/Home/Apply).

The National Water Trail BMP Categories are: Community Support, Conservation, Education, Mapping, Planning, Public Information, Recreation Opportunities and Trail Maintenance.

This document provides a definition of each BMP and begins to identify some examples of the organizations and programs that are in place to implement BMPs in support of the Lake Michigan Water Trail. This is the first phase of an inventory of BMPs already in place. It is not a comprehensive list.

1. Best Management Practice Category: Community Support

Definition: Local communities provide support and advocacy for the maintenance and stewardship of the water trail.

Stewardship and Maintenance: Virtually all of the communities who maintain public access sites along Lake Michigan and its connecting waterways maintain them according to local recreation plans and policies and standard public outdoor recreation maintenance procedures. In addition, 502 public access sites were approved for placement and promotion on the Michigan Great Lakes Water Trails website by local communities, www.michiganwatertrails.org.

The following organizations host annual paddling trips, advocate or support stewardship and maintenance activities for the Lake Michigan Water Trail and connecting waterways:

- A. Central Upper Peninsula
 - 1. Paddling Michigan (www.paddlingmichigan.com)
- B. Northwest Michigan
 - 1. Traverse Area Paddle Club (www.traverseareapaddleclub.org)
 - 2. Northern Michigan Paddling Club (www.northernmichiganpaddlingclub.com)
- C. West Michigan
 - 1. Mason/Lake Conservation District (www.mason-lakeconservation.org/invasive-plants-and-insects/)
 - 2. Muskegon River Watershed Assembly (mrwa.org/VoD.htm)

3. Grand River Heritage Trail (www.miottawa.org/OC_GRHT)

D. Southwest Michigan

- 1. Allegan Conservation District (www.facebook.com/allegancd).
- 2. Southwest Michigan, Bangor/South Haven Heritage Water Trail Association (www.swmichigan.org/entertainment/boat-canoe-rentals/316-ban gorsouth-haven-heritage-water-trail-association.html).

2. Best Management Practice Category: Conservation

Definition: The water trail provides opportunities for communities to develop and implement strategies that enhance and restore the health of the local waterways and surrounding lands.

- A. Water Quality Protection: Water quality protection, enhancement and restoration of Lake Michigan and its connecting waterways is carried out by local, state and federal agencies and non-governmental organizations.
 - Regional Planning Organizations (RPO) in Michigan, Indiana, Illinois and Wisconsin collaborate as the Lake Michigan Watershed Academy (lakemichiganacademy.org). The RPOs work with local governments to meet the goals of the U.S. EPA Lake Michigan Lake Action Management Plan (LAMP) to improve nearshore water quality and biodiversity along Lake Michigan and its rivers, lakes and streams. The 2013 annual report is available at www.epa.gov/glnpo/lakemich/lake-michigan-lamp-2013-eng.pdf.
 - 2. Many Michigan Watershed Organizations host paddling events and provide hands-on stewardship opportunities for volunteers:
 - Muskegon River Voyage of Discovery, mrwa.org/VoD.htm
 - Paddling Michigan, www.paddlingmichigan.com/mission
 - 3. Michigan Conservation Districts and the Michigan Association of Conservation Districts work on many fronts to improve land and water resources along Lake Michigan: www.macd.org/local-districts.html.
 - 4. The Alliance for the Great Lakes coordinates the Adopt-A-Beach program, providing opportunities for volunteer stewardship and actions to help improve beaches: www.greatlakes.org/ADOPTABEACH.
 - 5. The National Oceanic and Atmospheric Administration (NOAA) has developed a Great Lakes Marine Debris Strategy that communities use to guide prevention and cleanup efforts: www.marinedebris.noaa.gov/regional-coordination/great-lakes-region.

Implementation - Appendix B Continued

- 6. The Statewide Public Advisory Council for Michigan Areas of Concern (AOC) coordinates with local communities, state and federal agencies and the Great Lakes Commission to restore water bodies listed as AOCs: www.glc.org/proj-ects/habitat/spac/
- B. Land Protection: Land protection and conservation along Lake Michigan and the Coastal Zone is carried out or supported by the Michigan Department of Natural Resources (MDNR) and the Department of Environmental Quality (MDEQ). Private land conservancies also play important roles in the health of waterways and surrounding lands.
 - 1. The MDNR maintains parks and recreational areas along the Lake Michigan shoreline and its navigable rivers, harbors, lakes and streams. The MDNR Parks and Recreation Division offers volunteer stewardship opportunities: www.michigan.gov/dnr/0,4570,7-153-10365---,00.html
 - The Michigan Department of Environmental Quality, under the National Coastal Zone Management Program partners with local government landowners to acquire, improve and permanently protect coastal shorelines and outdoor public recreation features: www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-11188--,00.html
 - 3. Michigan's Land Conservancies are pro-active about acquiring and protecting lands with special ecological features. Links to the accredited Land Conservancies in Michigan's Lake Michigan Watershed are listed here: www.landtrustal-liance.org/land-trusts/accredited-land-trusts.
 - Chikaming Open Lands
 - Chippewa Watershed Conservancy
 - Grand Traverse Regional Land Conservancy
 - Land Conservancy of West Michigan
 - Leelanau Conservancy
 - Little Forks Conservancy
 - Michigan Nature Association
 - Southwest Michigan Land Conservancy
 - Little Traverse Conservancy

3. Best Management Practice Category: Education

Definition: The water trail users are provided with opportunities to learn about the value of water resources, cultural heritage and boating skills and outdoor ethics.

Implementation - Appendix B Continued

- A. Opportunities to Explore
 - 1. National Recreation Area Programs
 - 2. Michigan DNR Parks Programs
 - 3. Ottawa County Parks and Recreation, Nature Education Center: www.miottawa. org/Parks/nature_center.htm
 - 4. Others
- B. Boating Skills and Outdoor Ethics
 - 1. The U.S. Coast Guard Auxillary (USCG) and the American Canoe Association signed a Memorandum of Agreement to promote safety among those who use kayaks, canoes and other paddle craft. The new agreement establishes cooperative efforts broadening outreach and education to the paddle sports community. Paddle Sports America is a paddlecraft safety course for paddlecraft boaters of all ages: www.cgaux.org/boatinged/classes/2011/psam.php
 - Vessel Examinations for paddlecraft include an annual vessel check and decal for vessels that meet the federal standards for a paddlecraft vessel.
 - IF-FOUND contact stickers, in cooperation with the National Safe Boating Council, distribute stickers to identify kayaks and canoes.
 - The Leave No Trace Center for Outdoor Ethics: Leave No Trace provides education for those who enjoy the outdoors about the nature of their recreational impacts, as well as techniques to prevent and minimize such impacts: https:// Int.org/
- C. Ecosystem Education
 - 1. Inland Seas Education Association School Ship Education: www.schoolship. org/
 - 2. GVSU Annis Water Resources Institute Hands On Science on a Research and Education Vessel: www.gvsu.edu/wri/education/
 - 3. Gillette Sand Dune Visitor Center at P.J. Hoffmaster State Park- Sand Dune Interpretive Center Programs: www.gillettenature.org/
 - 4. Great Lakes Stewardship Initiative Hands on Curriculum tied to Great Lakes Stewardship: www.glstewardship.org/AboutGLSI/OurStewards.aspx
- D. Safety Education and Information
 - 1. Michigan State University and Michigan Sea Grant: Great Lakes Paddling Safety Tips: www.msue.anr.msu.edu/news/great_lakes_paddling_safety_in_2013
 - 2. Paddle Safe Paddle Smart: www.paddlesmart.org/index.htm
 - 3. "Rules of the Road: What Paddlers Need to Know", American Canoe Association. http://c.ymcdn.com/sites/www.americancanoe.org/resource/resmgr/seieducational_resources/rules_of_the_road.pdf

4. Best Management Practice Category: Mapping

Definition: This (National Park Service) toolbox provides geospatial resources for water trail managers. In this toolbox you will find instructions and examples on how to create x- and y-coordinates and maps for your water trail. These resources help you complete 'Section 5: Photo, Mapping, and Logo' in the National Water Trail System Application. www.nps.gov/WaterTrails/Toolboxes/Mapping%20toolbox

- A. Michigan Great Lakes Water Trails Website
 - 1. This on-line tool allows paddlers to plan a variety of paddling experiences along the Great Lakes, Lake Michigan and its connecting rivers, lakes and harbors. It provides site-specific information about access sites, lodging, community amenities, regional water trails and attractions: www.michiganwatertrails.org
- B. Google Earth Maps
 - 1. Explore creating a map of your entire water trail using Google Earth. Google Earth enables you to draw the entire length of your trail and add placemarks and labels for access points or other important locations.
- C. Maps on the Web
 - 1. Web maps enable you to create a map directly in your web browser. All you need is an internet connection and the Microsoft Silverlight Plugin. The Web map provides tools to trace the length of your water trail and add trail access locations and other points of interest. The Web map automatically creates a map layout with a legend, scale bar, and north arrow via the print function.

5. Best Management Practice Category: Planning

Definition: The water trail managers maintain a water trail plan that describes a vision, desired future conditions, and strategies to strengthen best management practices.

- A. Plans
 - Michigan Comprehensive Trail Plan: Chapter 5 of Michigan's 2014 Trail Plan addresses Water Trails, what the vision of a quality water trail system would look like, five year goals and action steps: www.michigan.gov/documents/dnr/ MI_Comprehensive_Trail_Plan_425377_7.pdf
 - 2. Lake Michigan Water Trail Plan (LMWT): The LMWT Plan features a water trail enhancement analysis and recommendations for each region along the shoreline. It includes a vision, desired future conditions and strategies that support the National Park System Best Management Practices for National Water Trails and Michigan's Comprehensive Trail Plan. Sample recreation plan language is provided for local communities who wish to maintain local water trails in sup-

port of the LMWT Plan. The LMWT Plan was completed by Michigan Regional Planning Organizations with support from a MDEQ Coastal Zone Management Program grant to the Land Information Access Association: www.wmsrdc.org

- 3. Local and Regional Water Trail Plans
- 4. Heritage Trail Plans
 - Michigan Heritage Water Trails: wmich.edu/glcms/watertrails/index.htm
- 5. Local Recreation Plans

Manistee County- Manistee County provides a terrific example of promoting water access, as well as universal accessibility in its county recreation plan. Goals 1 states, "Develop a community-wide system of parks and recreation areas and facilities adequate to the needs of local residents, visitors and people of all abilities through universal accessibility." Goal 4 states, "Develop more water-based recreation facilities." These two goals have been greatly advanced through the "Explore the Shores" initiative: www.exploretheshores.org/

Village of Suttons Bay - The Village of Suttons Bay also specifically points to water trails in two goals of their 2012-2017 Parks and Recreation Plan- "Increase access points to the waters for Suttons Bay/Grand Traverse Bay..." and "Create a blue water trail system along the shoreline of the Township, using existing public lands as access points. Explore the possibility of providing an accessible launch site and primitive camping sites for users."

6. Watershed Management Plans: Virtually all of the watersheds within the Lake Michigan Watershed in Michigan have in place approved Section 319 Watershed Management Plans, 604 B Plans, or watershed plans that are approved under the Michigan DEQ Clean Michigan Initiative Non Point Source Program: www.michigan.gov/deq/0,4561,7-135-3313_3682_3714-101788--,00.html

6. Best Management Practice Category: Public Information

Definition: The public is provided with accessible and understandable water trail information, including details for identifying access and trail routes; cultural, historic, and natural features; hazards; and water quality. The water trail is promoted to the community and broad national audience.

- A. Access, Routes, and Maps
 - 1. Michigan Great Lakes Water Trails Website: www.michiganwatertrails.org
 - 2. Mason/Lake Conservation District (handbook and map): www.mason-lakeconservation.org/

3. Regional Planning Organizations (maps, outreach materials)

B. Signage

- 1. The Lake Michigan Water Trail and Michigan Great Lakes Water Trails advisory committees are collaborating on standard signage for the various signage needs along the trails.
- C. General Information Programs
 - 1. The West Michigan Paddlers Association, Muskegon River Watershed Assembly, Traverse Area Paddle Club and the Grand Traverse Regional Land Conservancy host a number of events throughout the summer which help disseminate important information about Lake Michigan, the rivers, recreation, stewardship and other related resources.
- D. Hazards and Water Quality
 - 1. The Great Lakes Commission, in partnership with the Great Lakes states, LimnoTech and the Great Lakes Observing System has developed myBeachCast to provide convenient, public access to swim advisories and related environmental conditions for public beaches in the Great Lakes region. Funded by the Great Lakes Restoration Initiative, the app also includes real-time and forecasted weather and lake conditions, and nearshore marine forecasts. Beachgoers and boaters can download myBeachCast, beachcast.glin.net, to get the latest swim advisories, weather conditions and hazard alerts for more than 2,000 beaches in the Great Lakes region. To help protect swimmers from dangerous currents, myBeachCast now features beach hazard statements issued by the National Oceanic and Atmospheric Administration (NOAA) Coastal Storms Program. Beach hazard statements are issued for Great Lakes beaches by the NOAA National Weather Service (NWS) when the potential for strong and dangerous (rip) currents and waves is medium or high. For additional information, visit www.glin.net/beachcast/.
 - 2. The National Weather Service and NOAA provide weather information at http:// www.weather.gov/. NOAA and Sea Grant have developed an educational course discussing the structure of rip currents, how they form, and the different types you may encounter. The course also explains why you are vulnerable to rip currents, how to spot them, how forecasters predict them, and safety guidelines that can be used to keep you and your family safe: http://www. erh.noaa.gov/ilm/RipA/2014/player.html
 - 3. Pure Michigan Outdoors Kayak Blog: www.michigan.org/blog/outdoors/michigan-kayaking-beginners-guide/

7. Best Management Practice Category: Recreation Opportunities

Definition: The water trail route has established public access points that accommodate a diversity of trip lengths and provide access to a variety of opportunities for recreation and education.

- A. Map of Access Points Along the Water Trail: Good maps are essential to helping users find where they can access a waterway, how far they can reasonably go in a day, where they can camp, and where to take out.
 - 1. Maps for the Lake Michigan Water Trail and regional water trail segments can be found on the Michigan Great Lakes Water Trails website at www.michigan-watertrails.org.
 - 2. Google Maps
- B. Trip Planning Along the Water Trail: Planning your trip is critically important to having fun on a water trail. Good water trails have trip planning tools to help users determine where they should go, what they should take, and so forth.
 - 1. Michigan Great Lakes Water Trails Website Trip Planner Maps: www.michiganwatertrails.org/
 - 2. Lake Michigan Water Trail Association: www.lmwt.org/

8. Best Management Practice Description: Trail Maintenance

Definition: The water trail managers demonstrate ability to support routine and long-term maintenance investments on the water trail. Facilities are designed, constructed, and maintained by incorporating sustainability principles.

- A. Launches and Access Sites
 - 1. Prepare to Launch: The National Park Service has resources designed to help water trail managers and parks planners consider and build "put-in and take out" sites as they address the evolving needs of paddlers. "Prepare to Launch!" provides guidelines for assessing, designing and building access sites for carry-in watercraft http://preparetolaunch.river-management.org/
 - 2. Lasting Logical Launches: Rivers, Trails, and Conservation Program created a document entitled Lasting Logical Launches which gives examples of access docks and ramps and provides some basic instruction in evaluating launch design.



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